



General considerations

9 & 10 June 2026

What we will review

- Private Fire Service Mains and Connections (Data Sheet 3-10)
- Underground piping
- Hydrants
- Waterflow alarms
- Inspector Test Connections (ITC)
- FM Red Tag Permit system

PRIVATE FIRE SERVICE MAINS AND CONNECTIONS

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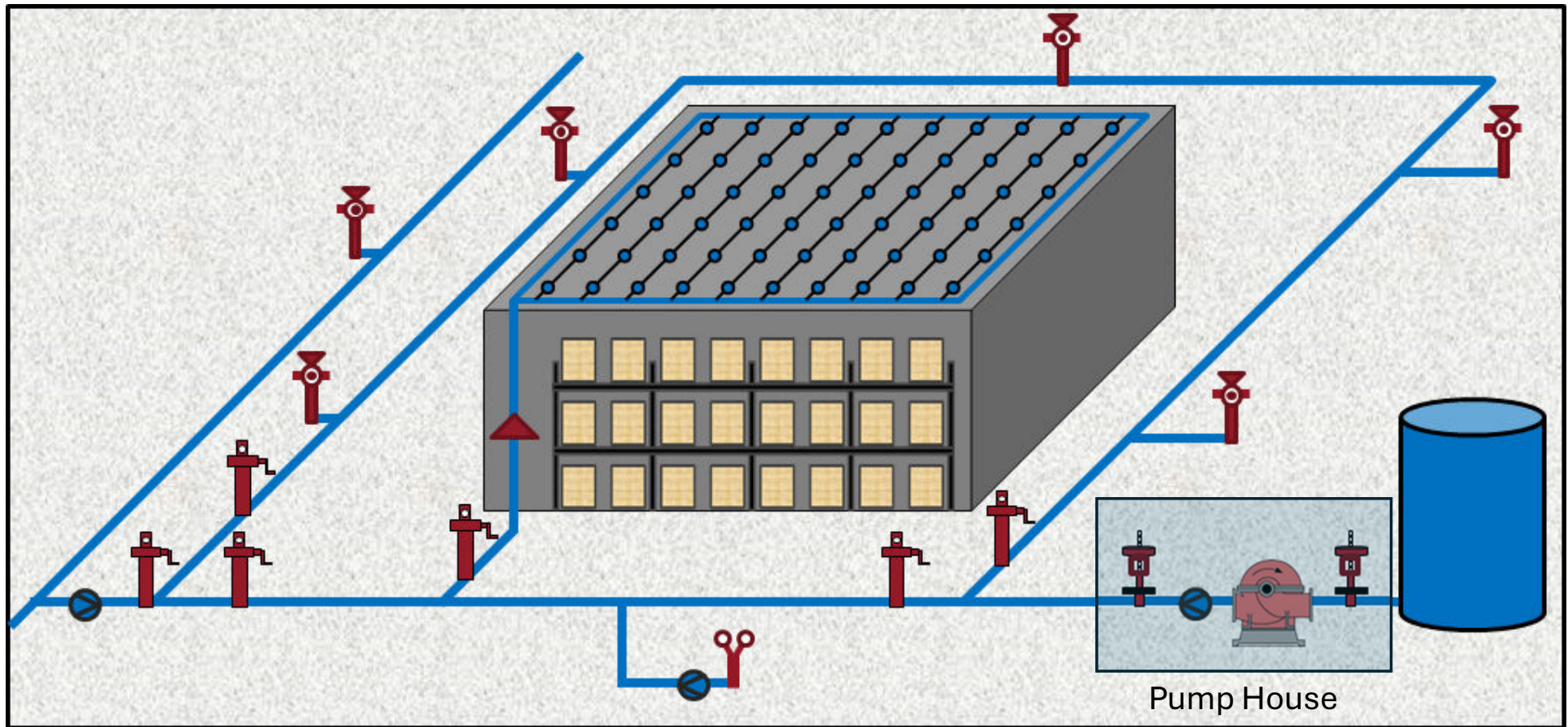
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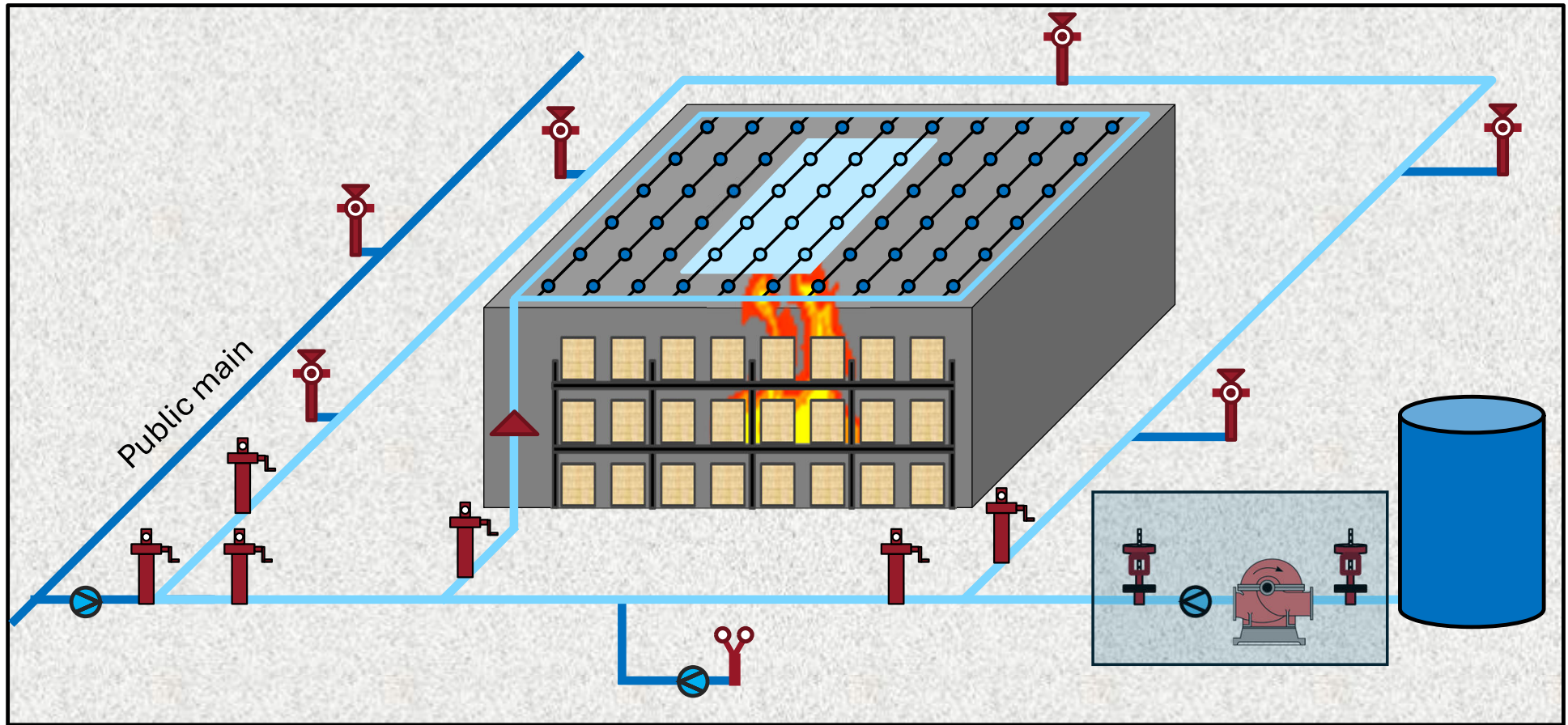
GENERAL CONSIDERATIONS

Underground Mains

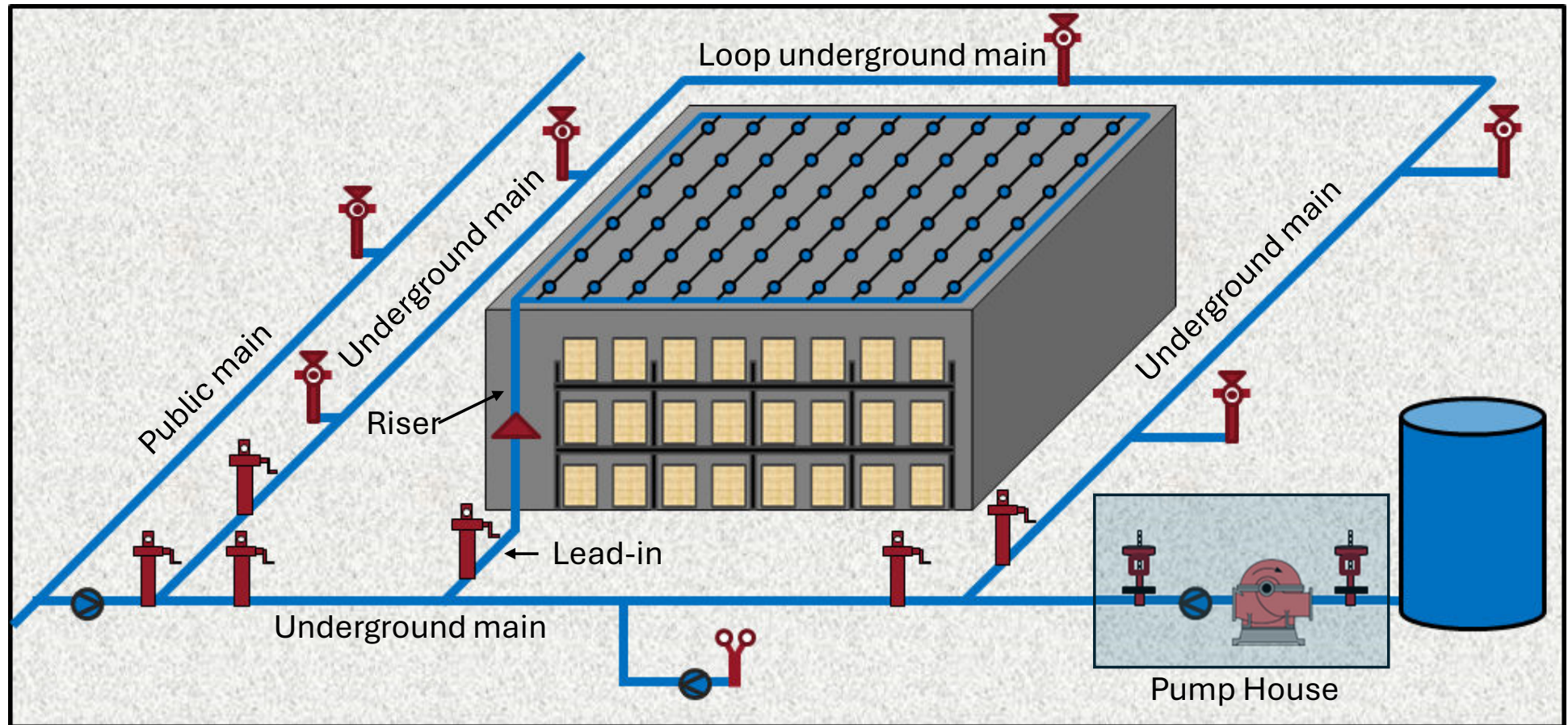


GENERAL CONSIDERATIONS

Underground Mains

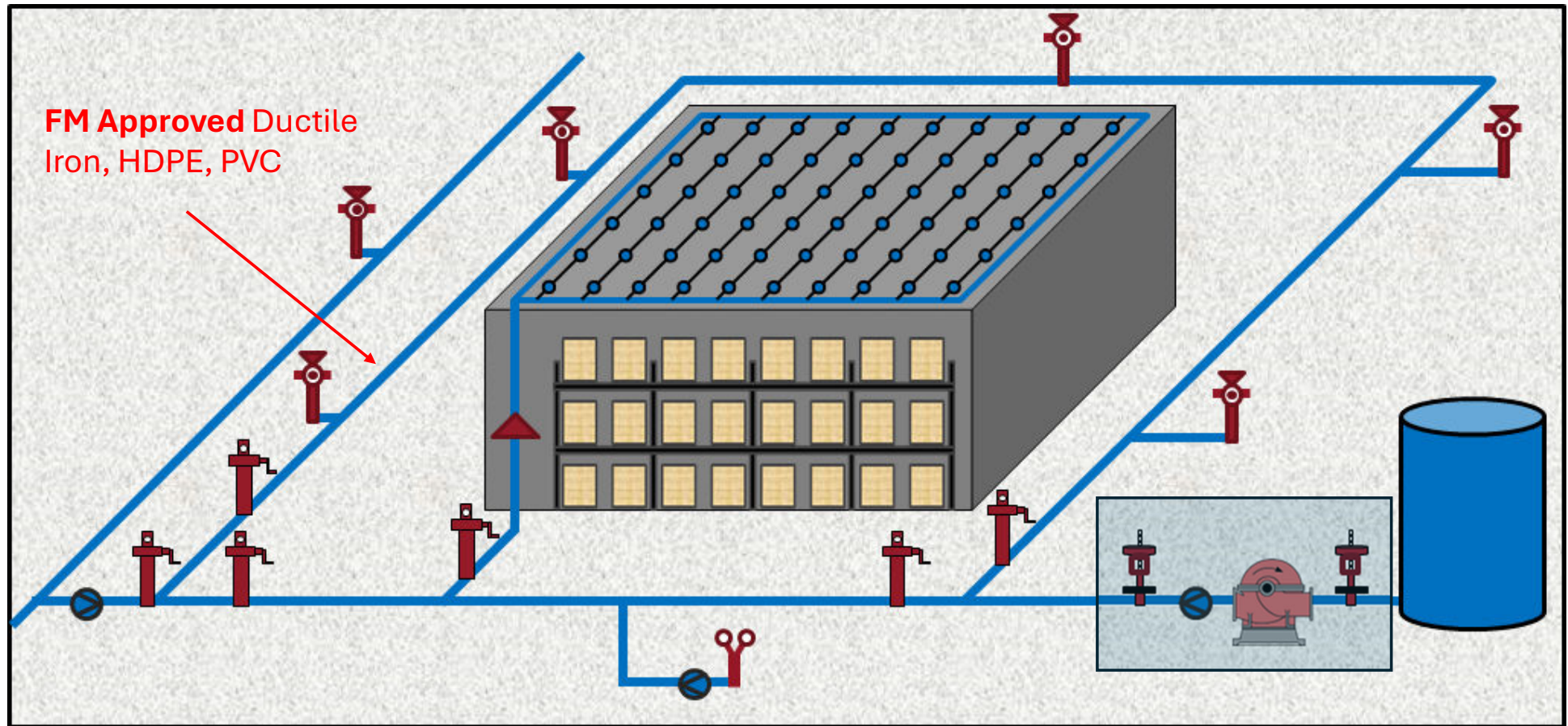


Underground Mains



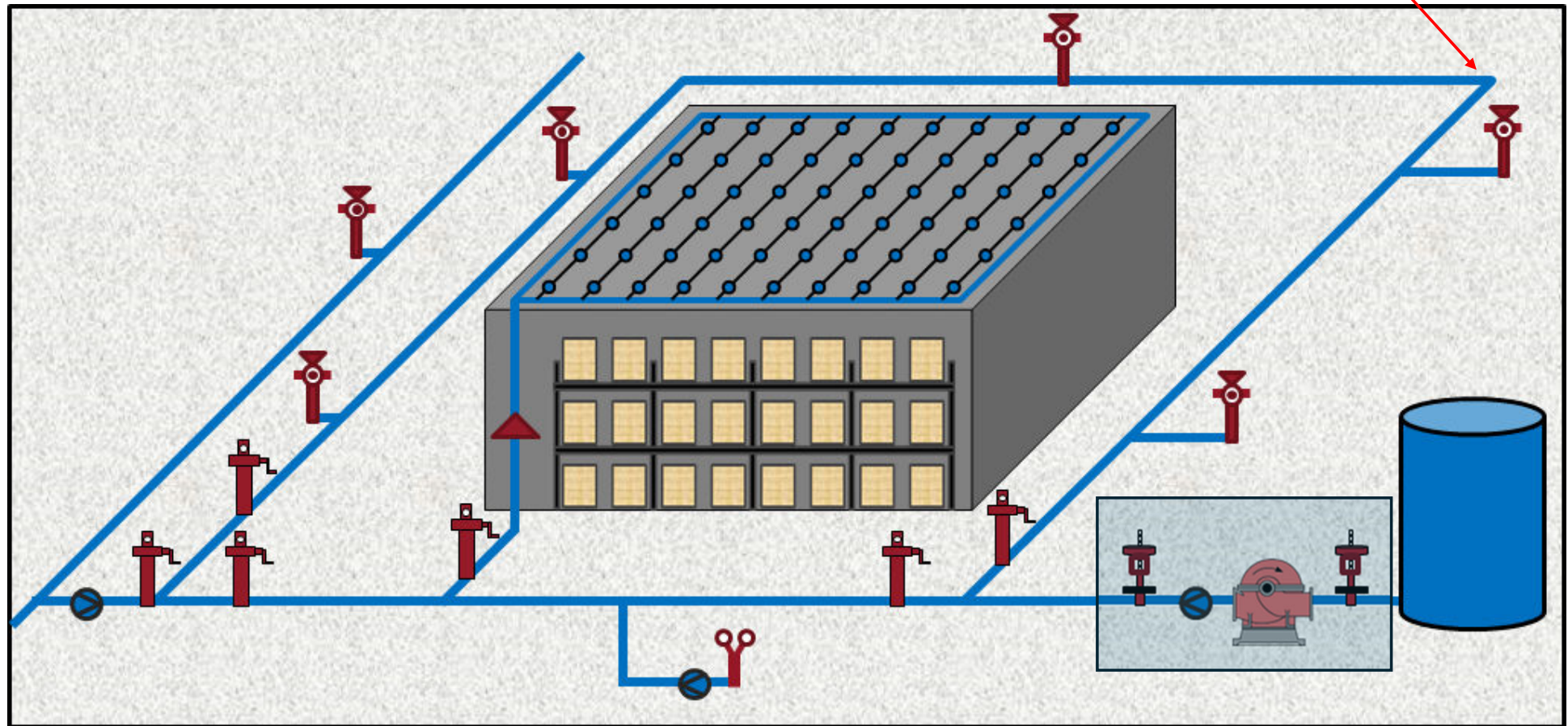
GENERAL CONSIDERATIONS

Underground Mains



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Underground Mains

FM Approved restrained pipes

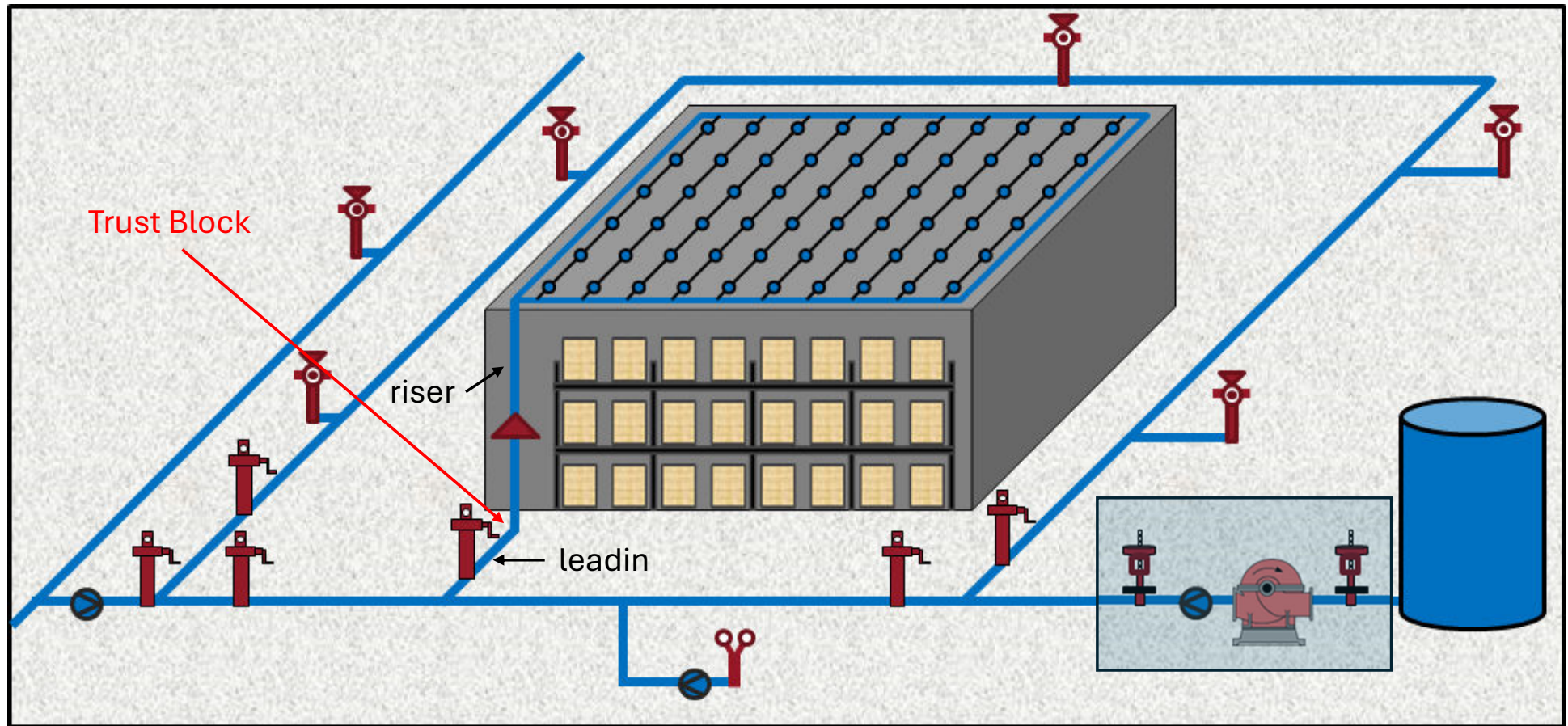


Trust block



GENERAL CONSIDERATIONS

Underground Mains



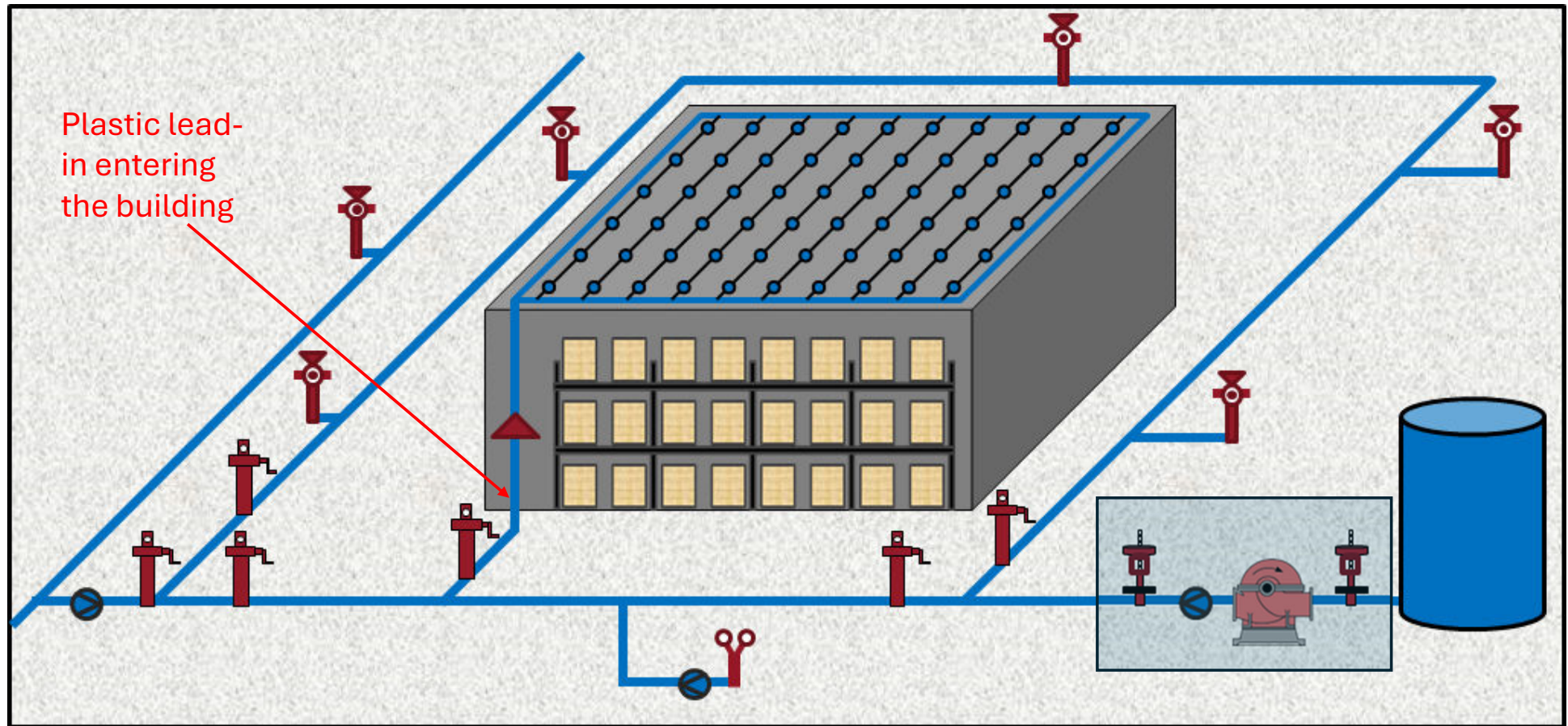
GENERAL CONSIDERATIONS

Underground Mains



Preferably with trust block

Underground Mains



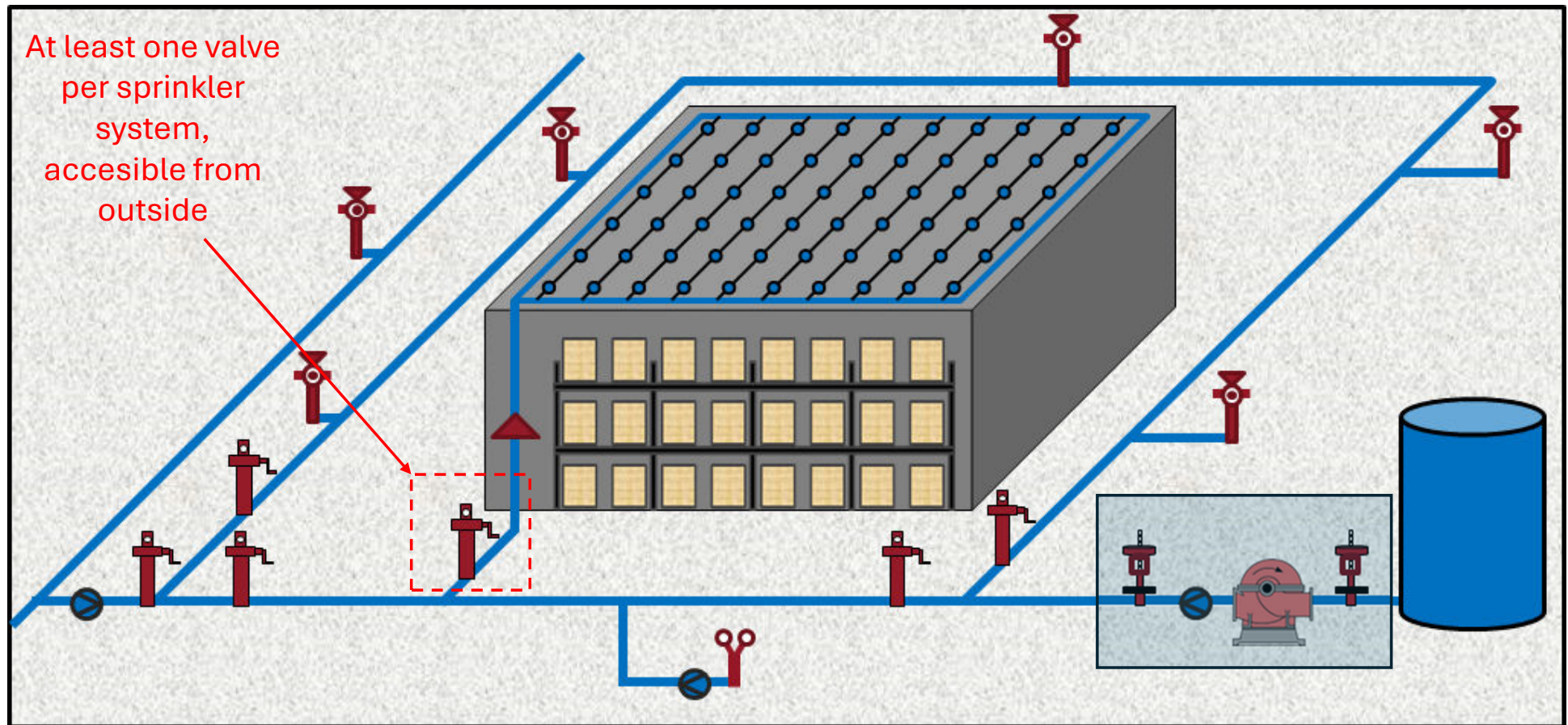
GENERAL CONSIDERATIONS

Underground Mains

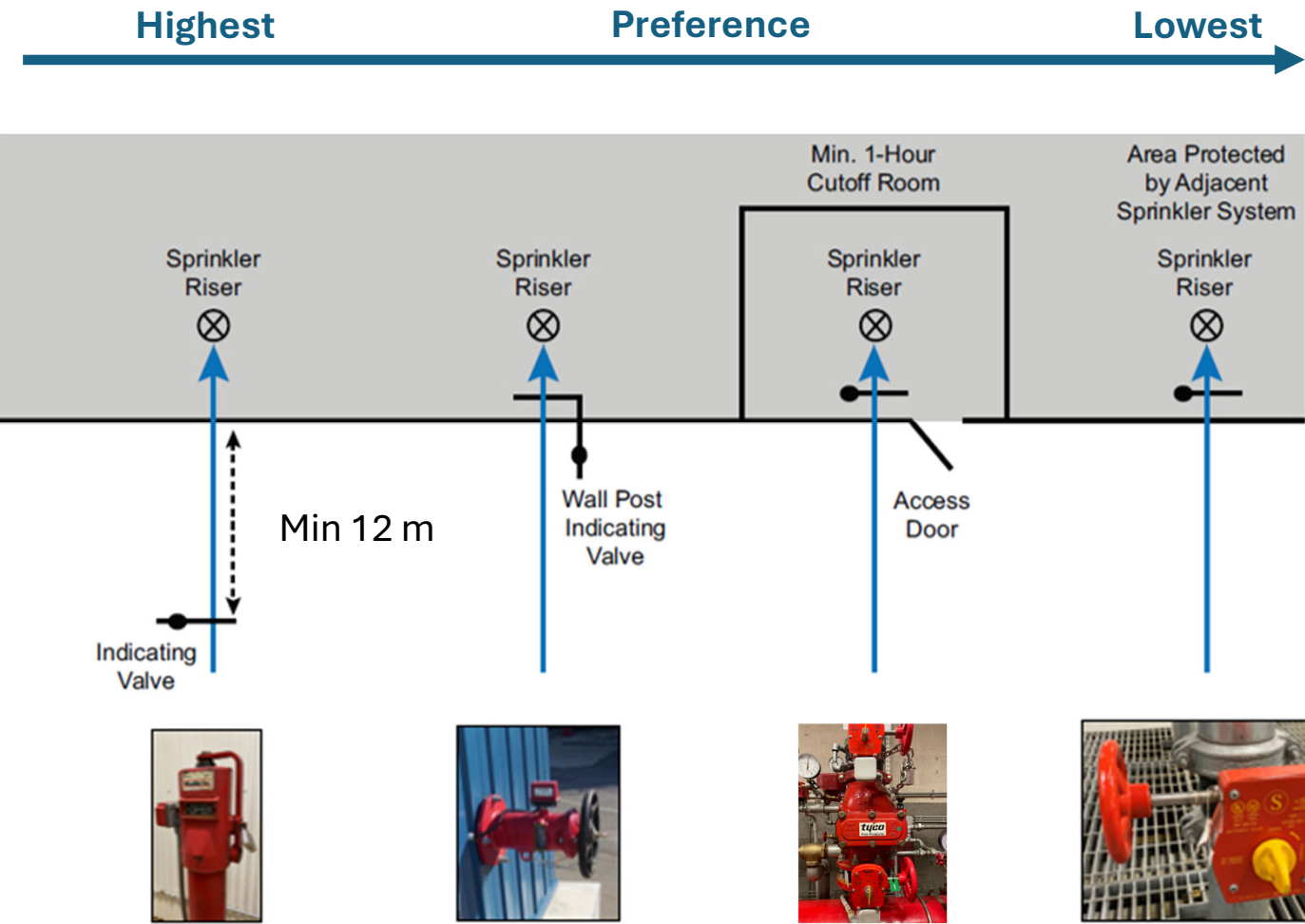


Fireproofing protection

Main sprinkler control valves

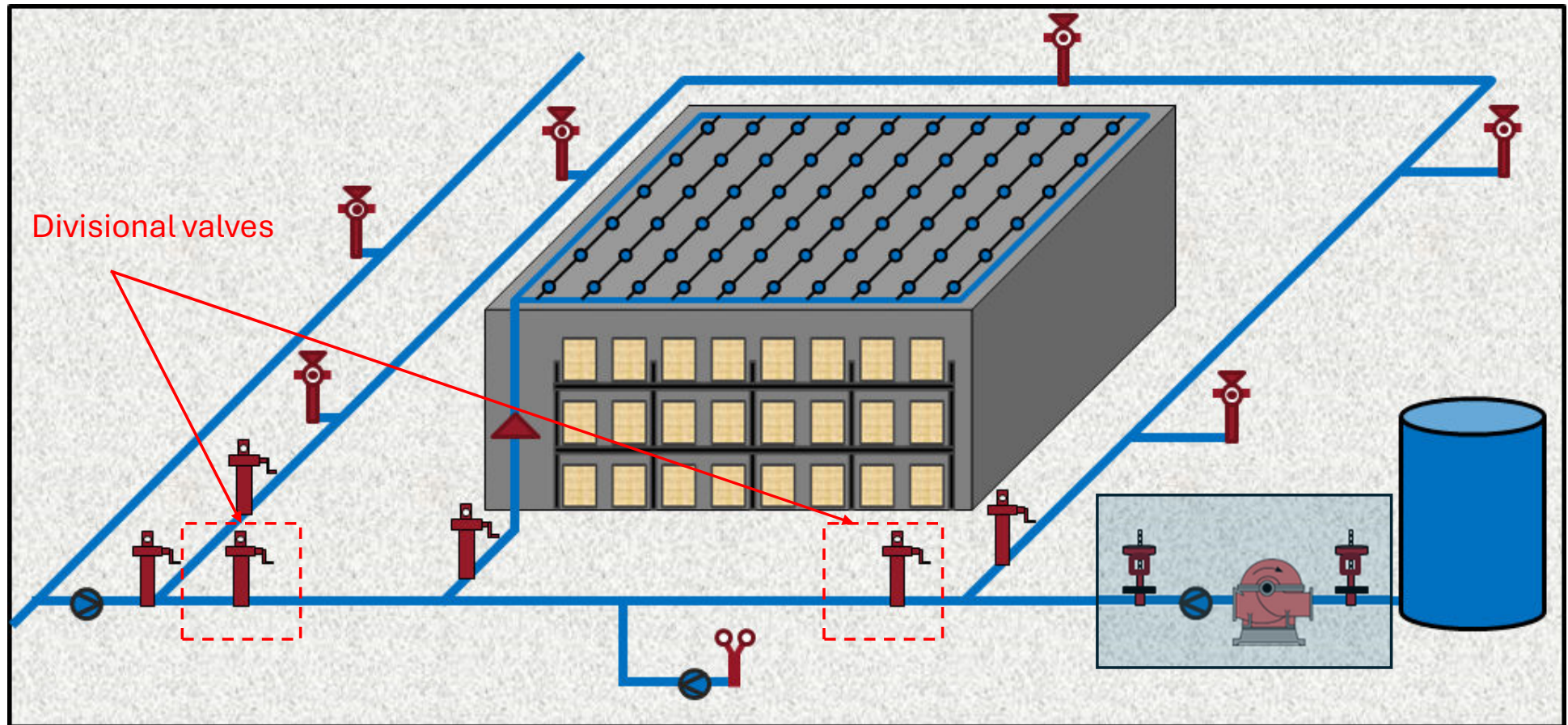


Main sprinkler control valves



Locked

Divisional valves

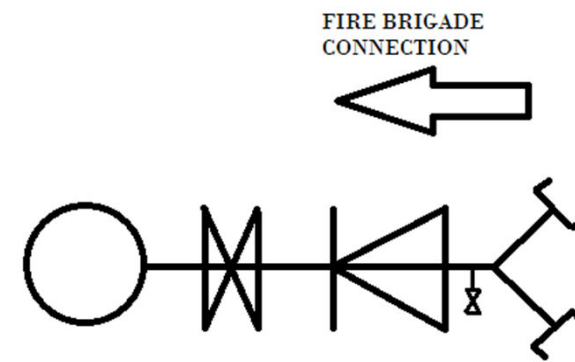
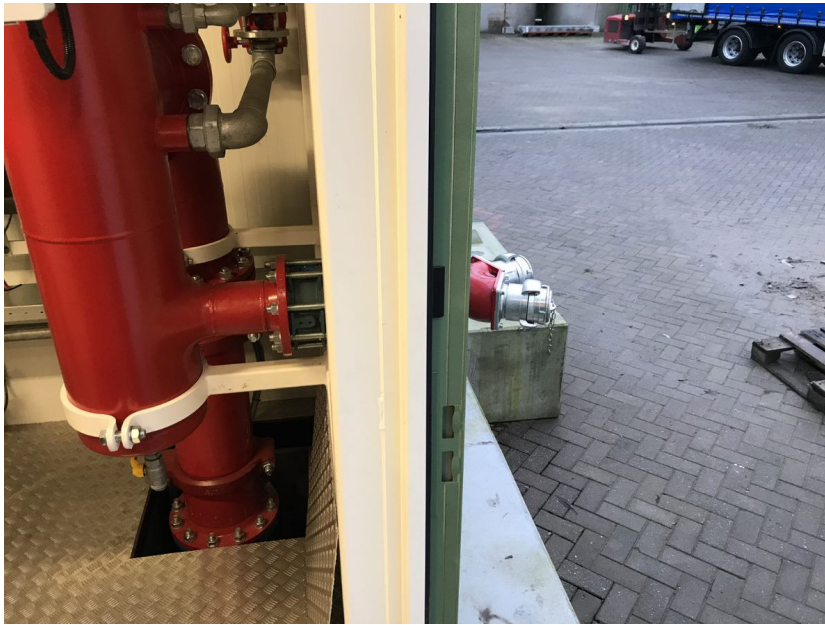


Inspection and testing of sprinkler valves

Frequency	What?
weekly	Visual inspection all control valves (locked in open position)
monthly	Physical test control valves: PIV, Wall-PIV, non-FM Approved, curb-box valves and non indicating butterfly valves
Semi annually	Test control valve supervision alarms
Yearly	Full-travel exercises of all control valves

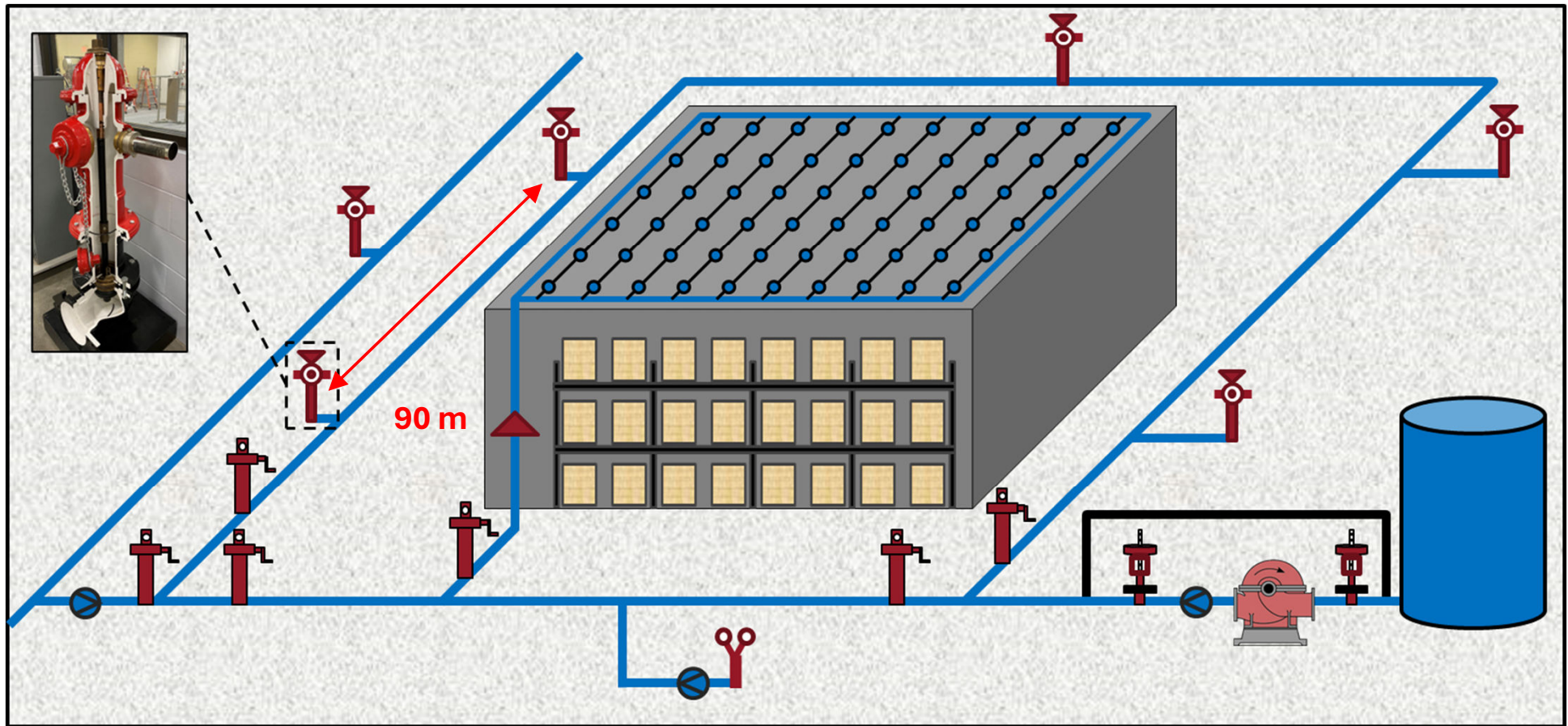
GENERAL CONSIDERATIONS

Fire Department connection



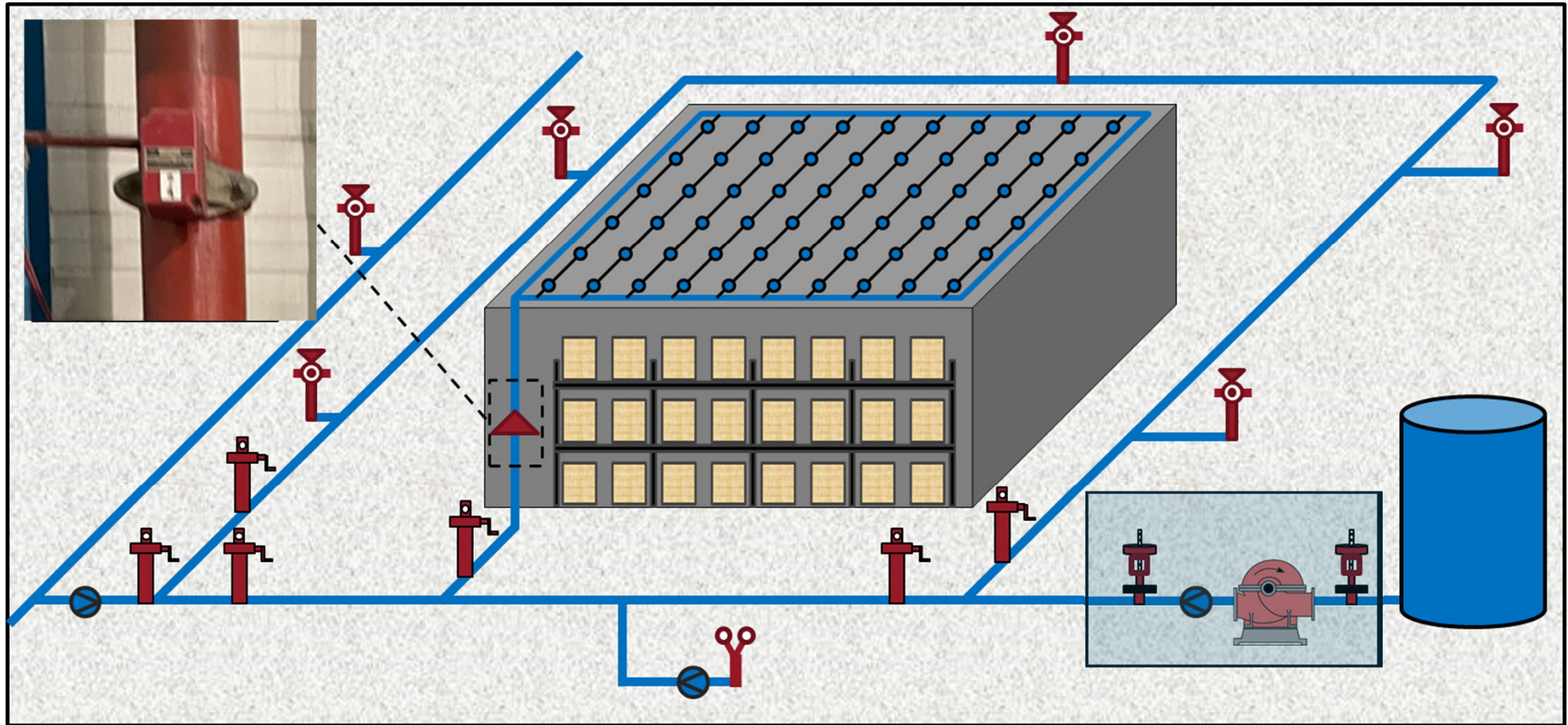
GENERAL CONSIDERATIONS

Hydrants



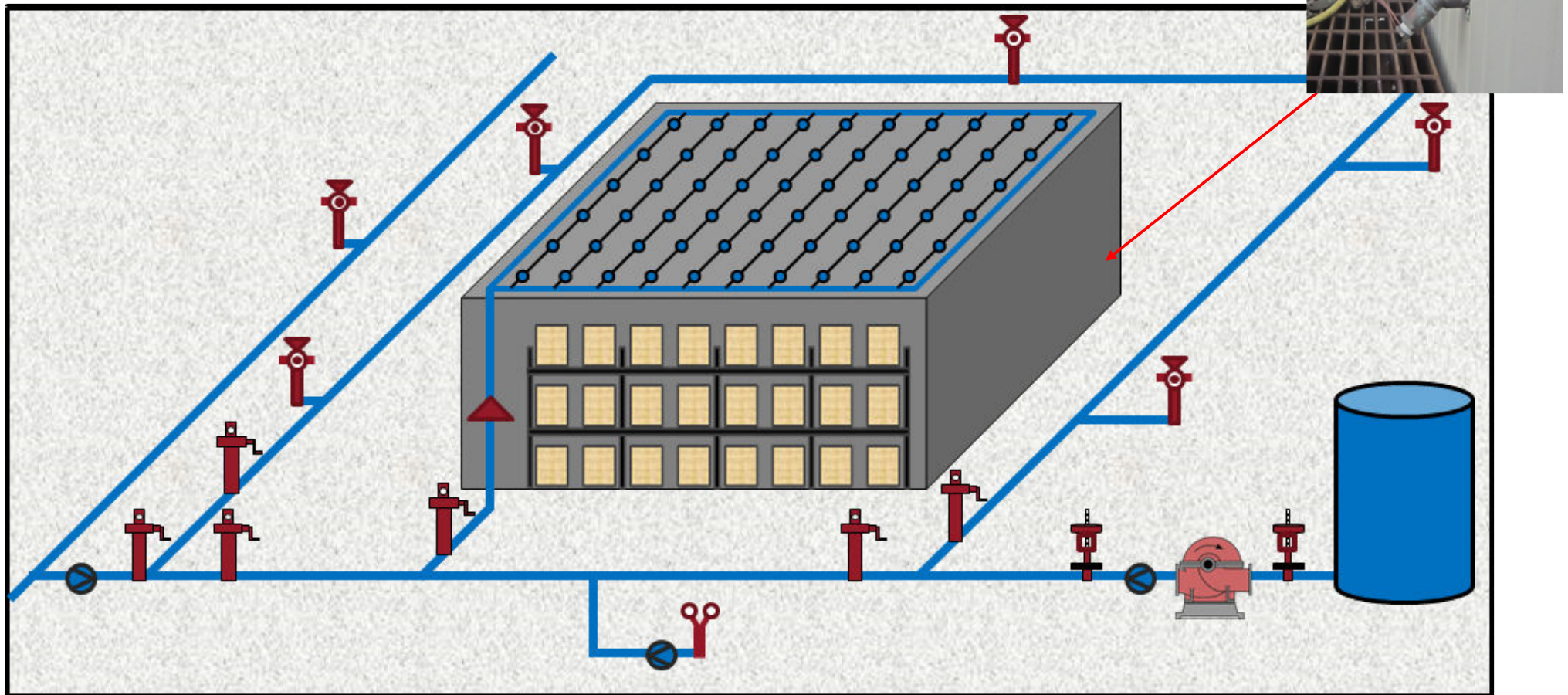
GENERAL CONSIDERATIONS

Water flow alarm



GENERAL CONSIDERATIONS

Inspector Test Connection (ITC)



GENERAL CONSIDERATIONS

Inspector Test Connection (ITC)

- ☐ Install an inspector's test connection downstream of each sprinkler system that is equipped with a waterflow alarm device.
- ☐ Connect the inspector's test connection to the sprinkler system using piping that is of nominal minimum 1 in. (25 mm) diameter, but no larger than the smallest system branch line pipe.
- ☐ Equip the inspector's test connection with an orifice outlet equal to the smallest orifice of any sprinkler installed on the sprinkler system to which the inspector's test connection is attached.
- ☐ Testing: quarterly for wet type sprinkler systems and yearly for dry type.
- ☐ Sprinkler alarm should be transmitted within 60 seconds maximum if not mentioned otherwise in specific occupancy data sheet.

GENERAL CONSIDERATIONS

Inspector Test Connection (ITC)



Sometimes more than one ITC is needed: example refrigerated area: maybe 2 x 2 heads with a water delivery time of 40 seconds

FM Red Tag Permit system

Each year, FM engineers typically discover close to **1,000 improperly closed valves** (ICV's) and impaired fire protection systems

- 64% were neither provided with non-breakage lock nor equipped with tamper switch
- 60% consisted of valves that typically are found indoors or within pits
- 13% were equipped with tamper switch

GENERAL CONSIDERATIONS

FM Red Tag Permit system

RED TAG PERMIT

CONTROL NUMBER	INDEX NUMBER
PRECAUTIONS TAKEN (CHECK AS APPROPRIATE)	
☐ Emergency Organization Notified	☐ Continuous Work Authorized
☐ Public Fire Department Notified	☐ Ongoing Patrol of Area
☐ Hazardous Operations Stopped	☐ Hydrant Connected to Sprinkler Riser
☐ Hot Work Prohibited	☐ Piping Pinned on Hand
☐ Smoking Restricted	☐ Fire Hose Laid Out
☐ Other	
CONTACT NAME	
LOCATION (City, State/Province)	
CONTACT PHONE NO.	CONTACT FAX NO.
CHECK IF ☐ SPRINKLER ☐ FIRE PUMP ☐ GASEOUS EXTINGUISHING SYSTEM ☐ OTHER	SPRINKLER VALVE LOCATION/NUMBER AREA PROTECTED
REASON FOR IMPAIRMENT	
PLANNED DATE/TIME TO BE CLOSED	
PLANNED DATE/TIME TO BE OPEN	
NAME/TITLE OF RESPONSIBLE PERSON	
AUTHORIZED BY (NAME)	FIRE PROTECTION EQUIPMENT OPERATOR (NAME)
PART 1 INSTRUCTIONS	
Permit Authorizer: Fill out using ballpoint pen, sign and issue permit as follows: Phone Part 1 information, or fax this part, to the FM number listed on the Red Tag Permit Wall Kit. Place Part 2 in center pocket of Wall Kit as visual reminder of impairment. Issue Part 3 (Red Tag) to Fire Protection Equipment Operator to attach to impaired equipment.	
FM RED TAG PERMIT F2480 © 2010 - 2024 Factory Mutual Insurance Company. All rights reserved. (Rev. 08/2024). Part 1 of 3	

FM

Red eTag

English

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Report Impairment



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