



OVERHEAD SYMBOL LEGEND

(SPRINKLER HEAD SYMBOLS AT BOTTOM OF SHT.)

- CHANGE IN ELEVATION UPWARD
- CHANGE IN ELEVATION DOWNWARD
- AUTOMATIC SPRINKLER RISER
- ELECTRIC BELL
- HANGER TYPE AND LOCATION
- RISER NIPPLE
- DENOTES BRANCHLINE NUMBER
- DENOTES CROSSMAIN NUMBER
- RIGID GROOVE COUPLING
- FLEXIBLE GROOVE COUPLING
- DENOTES HYDRAULIC REF. NUMBER
- DENOTES PIPE CONTINUATION
- BRANCHLINE < BELOW DECK ELEVATION
- CROSSMAIN < BELOW DECK ELEVATION
- PIPE ELEVATION ABOVE FINISH FLOOR
- DENOTES 2 WAY BRACING
- DENOTES 4 WAY BRACING
- DENOTES END OF LINE RESTRAINT

MATERIALS

ALL MATERIALS ARE TO BE UL LISTED AND APPROVED

- ABOVE GROUND PIPING
 - ALL 1" THRU 2" THREADED PIPING SHALL BE SCH. 40 BLACK STEEL WITH BLACK CAST IRON FITTINGS CLASS 125
 - ALL 1-1/2" THRU 8" WELDED PIPING SHALL BE TO BE SCHEDULE 10 BLACK STEEL WITH GROOVED FITTINGS.
- PIPE SLEEVES ARE TO BE PACKED WITH FIRE AND SMOKE RESISTIVE MATERIALS PER NFPA STANDARDS.
- ALL PIPE SUPPORTS AND EARTHQUAKE BRACING SHALL BE IN ACCORDANCE WITH NFPA PAMPHLET #13 REQUIREMENTS.
- END HANGERS ON ALL BRANCH LINES TO INCLUDE "TOLCO" FIG. 25 SURGE RESTRAINER PER NFPA PAMPHLET #13 (1999) AND FOR LATERAL MOVEMENT SHALL BE BRACED WITH SPLAYED SEISMIC BRACING WIRE SEE DETAIL.
- WELDED OUTLETS OR MECH. TEES SHALL BE UL APPROVED
- ALL CONTROL VALVES SHALL BE PROVIDED WITH SUPERVISORY SWITCHES.

SYM	CONT	POSITION	FINISH	TEMP	K	NPT	MODEL#
1	56	UPR	BRASS	155	5.60	1/2"	R3625 RELIABL. FFR
2	56	PND	CHROME	155	5.60	1/2"	R3615 RELIABL. FFR
3	182	PND	BRASS	165	25.20	1"	T99226 TYCO

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DESIGN CRITERIA

THIS AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM SHALL BE DESIGNED, FABRICATED, AND INSTALLED IN ACCORDANCE WITH NFPA #13 1999 EDITION AND THE CITY FIRE DEPARTMENT.

SPRINKLER SYSTEM SHALL BE HYDRAULICALLY AS FOLLOWS:

FOR WAREHOUSE:

ESFR (EARLY SUPPRESSION FAST RESPONSE) WET SPRINKLER SYSTEM USING GEM ESFR-25 PENDENT WITH K=25.2 SPRINKLER HEAD DESIGNED FOR THE FOLLOWING:

CLASS IV ENCAPSULATED COMMODITIES WITH SINGLE AND DOUBLE ROW RACK STORAGE WITH A MAXIMUM HEIGHT OF 25' MAXIMUM BUILDING HEIGHT 31'-0" SPACING NOT MORE THAN 110 SQ. FT. SEE NFPA # 13 GUIDELINES

5-11.2 Protection Areas per Sprinkler (Early Suppression Fast-Response Sprinklers).

5-11.2.1 Determination of the Protection Area of Coverage. The protection area of coverage per sprinkler (As) shall be determined in accordance with 5-5.2.1. Exception: It shall be permitted to deviate from the maximum sprinkler spacing to eliminate obstructions created by trusses and bar joists by moving a sprinkler along the branch line a maximum of 1 ft (0.31 m) from its allowable spacing provided coverage for that sprinkler does not exceed 110 sq. ft. (10.2 m²) and the average spacing for the moved sprinkler and the adjacent sprinkler do not exceed 100 sq. ft. (9.3 m²). Adjacent branch lines shall maintain the same pattern. In no case shall the distance between sprinklers exceed 12 ft (3.7 m).

FOR OTHER AREAS:

A) ORDINARY HAZARD GROUP 1 (MAX. STORAGE 12) 15 GPM OVER 1500 SQ. FT. WITH 250 GPM FOR HOSE AND SPACING NOT MORE THAN 130 SQ. FEET.

B) BASEMENT PARKING GARAGE: ORDINARY HAZARD GROUP 1. 15 GPM OVER 1950 (DRY SYSTEM) 150 SQ. FT. WITH 250 GPM FOR HOSE AND SPACING NOT MORE THAN 225 SQ. FEET. USING EXTENDED COVERAGE HEADS W/ K+ 11.2.

C) SECOND FLOOR OFFICES SPACES: LIGHT HAZARD GROUP 1. 10 GPM OVER 1500 SQ. FT. WITH 100 GPM FOR HOSE AND SPACING NOT MORE THAN 225 SQ. FEET.

ESFR INSTALLATION GUIDELINES

MAXIMUM ROOF OR CEILING SLOPE: 2 IN 12.

SPRINKLER POSITION: APPROVED FOR USE ONLY IN THE PENDENT POSITION IN WET SYSTEMS.

ACCORDING TO NFPA, INSTALL WITH THE CENTERLINE OF THE THERMAL SENSING ELEMENT BETWEEN 4" AND 18" BELOW THE CEILING. UL LISTING REQUIREMENT FOR BUILDINGS UP TO 40 FT. HIGH: INSTALL WITH THE DEFLECTOR BETWEEN 6" AND 18" BELOW THE CEILING. ALIGN THE DEFLECTOR PARALLEL WITH THE CEILING OR ROOF. DEFLECTOR DISTANCE FROM WALLS: AT LEAST 4" FROM WALLS, AND NO MORE THAN ONE-HALF THE ALLOWABLE DISTANCE PERMITTED BETWEEN SPRINKLERS.

CLEARANCE FROM DEFLECTOR TO TOP OF STORAGE: AT LEAST 36" DISTANCE BETWEEN SPRINKLERS: THE MAXIMUM AREA OF COVERAGE ALLOWED PER SPRINKLER IS 100 FT²

THE MINIMUM AREA OF COVERAGE ALLOWED PER SPRINKLER 80 FT² PER NFPA 13.

FOR BUILDING HEIGHTS UP TO 30 FT., THE SPACING ALLOWED BETWEEN SPRINKLERS AND/OR BRANCH LINES IS 8 TO 12 FT.

STORAGE INFORMATION

Total Storage	21,866 sq. ft.
Building Height	31'-0"
Storage Height	25'-0"
Commodity Classification	Class IV encapsulated Cartoned Expanded Plastics, Cartoned Expanded Plastics
	Please refer to tech. data

BUILDING INFORMATION

BUTLER BUILDING

OCCUPANCY: S-5

TYPE OF CONST: IIA-FULLY SPRINKLERED

20' TO RIDGE

TOTAL AREA: TOTAL 27,642 SQ. FT.

FIRE SPRINKLERS

PROJECT: WAREHOUSE - ESFR SPRINKLER SYSTEM

CITY: [REDACTED]

TITLE: FIRST FLOOR AND AREA BELOW MEZZANINE

DRAWN: WY DATE: ---

DATE: ---

DRAWING NO. FP-1

SHEETS OF ---

WY FIRE SPRINKLER DESIGN SERVICES