

ESFR-15.000

NON-COMBUSTIBLE
ROOF JOIST SYSTEM
(6" X 20 GA JOISTS
16" O.C.)

REMOTE FDC W/
1/2" BALL DRIP

UPPER FLOOR/ROOF PIPING PLAN

SCALE 1/8"=1'-0"

1" AUX. DRAIN - PIPED
OUTSIDE

12 X 14 O.H. DOOR

12 X 14 O.H. DOOR

Hydraulic Information	
OCCUPANCY CLASSIFICATION	ESFR
DENSITY	N.A. (ESFR at 15.000)
TOTAL HOSE STREAMS	250.00
DRY CAPACITY	0.00gal
TOTAL HEADS FLOWING	12
K-FACTOR	25.2
TOTAL WATER REQUIRED	1431.55
TOTAL PRESSURE REQUIRED	40.444
BASE OF RISER - GPM	1181.55
BASE OF RISER - PSI	32.631
SAFETY MARGIN - PSI	+6.435 (13.7%)

ESFR DESIGN CRITERIA: CLASS IV COMMODITY STORED UP
TO 25' WITH A MAX. CEILING HEIGHT OF 30'-NO IN RACK
SPRINKLERS = 15 PSI FOR 12 SPRINKLER HEADS AND 250
HOSE SUPPLY. NFPA 13 TABLE 16.2.3.1

- ESFR SPRINKLER DESIGN CRITERIA:
- 100 SQ.FT. MAX PER HEAD
 - 110 SQ.FT. DEVIATION ALLOWABLE DUE TO OBSTRUCTIONS
 - 12 FT. MAX SPACING BETWEEN HEADS
 - 54 SQ.FT. MIN PROTECTION AREA
 - STORAGE ABOVE 30 FT = 10 FT. MAX SPACING
 - MIN 4" OFF ANY WALL
 - MIN 8 FT. BETWEEN HEADS
 - PENDENT 14K & 16.8K = 6" TO 14" DEFLECTOR TO DECK DISTANCE
 - PENDENT 22.4K & 25.2K = 6" TO 18" DEFLECTOR TO DECK DISTANCE
 - UPRIGHT 14K & 16.8K = 3" TO 12" DEFLECTOR TO DECK DISTANCE
 - DEFLECTORS TO ALIGN WITH CEILING PITCH
 - REFER TO NFPA CH. 8 FOR SPECIFIC OBSTRUCTION RULES
 - ESFR SPRINKLERS TO BE SPACED A MIN OF 1 FT. HORIZONTALLY FROM FROM NEAREST EDGE OF BOTTOM CHORD OF TRUSS OR JOIST
 - O.H. DOORS CAN BE PROTECTED USING QR SPRINKLERS
 - CLEARANCE OF TOP OF STORAGE TO DEFLECTOR SHALL BE MIN OF 36"
 - DESIGN AREA SHALL INCLUDE: 12 MOST DEMANDING SPRINKLERS, 4 SPRINKLERS ON EA BRANCHLINE, & A MIN AREA OF 980 SQ.FT.
 - REFER TO TABLES IN CH. 12-19 FOR SPECIFIC DENSITY REQUIREMENTS BASED ON COMMODITY AND STORAGE HEIGHT.
 - INSTALLED ON WET SYSTEMS ONLY.

E.S.F.R. NOTE:
E.S.F.R. SYSTEMS REQUIRE SPECIAL CONSIDERATION REGARDING PLACEMENT OF LIGHTING, DUCT WORK,
PROCESS PIPING, ELECTRICAL, CONDUIT RUNS, ETC. HYDRAULIC FLOWS AND HEAD PLACEMENTS ARE VERY
CRITICAL AND ARE ASSIGNED TO DRAIN PRECISELY. PIPING CAN NOT BE ROUTED AROUND OBSTRUCTIONS
DUE TO INCREASED FRICTION LOSSES OR LOWERED FROM ROOF STRUCTURE DUE TO PENDENT DESIGN ONLY
AND REQUIRED 12" DEFLECTOR DISTANCE FROM ROOF DECK. IT IS UNDERSTOOD THAT REQUIRED COORDINATION
WITH ROOF STRUCTURE, JOIST PANELS, PANELS, ROOF DUCTING, LIGHTING, AND OTHER PIPING WILL BE
ACCOMPLISHED TO ACCOMMODATE REQUIRED SPRINKLER SPACING. PROPER SPACING MUST ALSO BE MADE
BETWEEN E.S.F.R. SPRINKLERS BY THIS EQUIPMENT TO MEET REQUIRED CODES.

Hydraulic Information	
OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY	0.100gpm/ft² for 900.00ft² (Actual 890.80ft²)
TOTAL HOSE STREAMS	100.00
DRY CAPACITY	0.00gal
TOTAL HEADS FLOWING	8
K-FACTOR	5.6
TOTAL WATER REQUIRED	292.61
TOTAL PRESSURE REQUIRED	52.578
BASE OF RISER - GPM	192.61
BASE OF RISER - PSI	43.737
SAFETY MARGIN - PSI	+5.780 (9.9%)

Hydraulic Information	
OCCUPANCY CLASSIFICATION	Ordinary Group II
DENSITY	0.200gpm/ft² for 900.00ft² (Actual 998.55ft²)
TOTAL HOSE STREAMS	250.00
DRY CAPACITY	0.00gal
TOTAL HEADS FLOWING	10
K-FACTOR	8
TOTAL WATER REQUIRED	518.88
TOTAL PRESSURE REQUIRED	41.428
BASE OF RISER - GPM	268.88
BASE OF RISER - PSI	33.696
SAFETY MARGIN - PSI	+15.718 (27.5%)

LOWER FLOOR PIPING PLAN

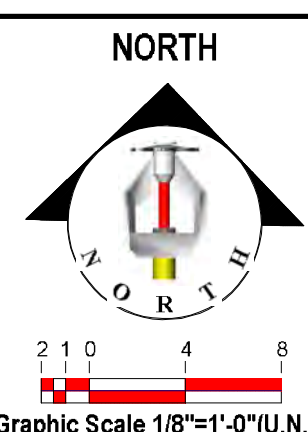
SCALE 1/8"=1'-0"

Ordinary Group II-0.200gpm/ft² for 900.00ft²

BRANCHLINES TO BE RESTAINED PER
NFPA 13 TABLE 9.3.6.4 (REFER TO THE
DETAIL ON FP2)

FLUSHING NOTE: UNDERGROUND TO BE
FLUSHED PRIOR TO CONNECTION TO
OVERHEAD SYSTEM

U.G. INSTALLED AND APPROVED
PER CITY OF MERIDIAN-REFER TO
CIVIL (UTILITY PLANS) BY ARCHITECT









Standard Symbols	
	- Post Indicator Valve
	- Alarm Check Valve
	- Key Operated Valve
	- Public Hydrant
	- Fire Dept. Connection
	- O.S.&Y. Gate Valve
	- Check Valve
	- New Underground
	- Existing Underground

Standard Symbols	
	- Alarm Check Valve
	- Thrust Block
	- Backflow Preventer

Standard Sprinkler Symbols	
	- Upright on 1/2" Outlet
	- Pendent on 1/2" Outlet
	- Upright on 1" Spring
	- Pendent below ceiling on 1" Drop
	- Upright above Pendent on 1" Drop
	- Sidewall on 1/2" Outlet
	- Sidewall on 1" Spring

GENERAL SYSTEM NOTES

- HYDRAULIC INFORMATION TO BE PROVIDED BY SPRINKLER MANUFACTURER
1. LATEST EDITIONS OF NFPA 13 AND NFPA 13.1 SHALL BE USED FOR ALL REQUIREMENTS UNLESS OTHERWISE SPECIFIED.
2. ALL REQUIREMENTS SHALL BE MET UNLESS OTHERWISE SPECIFIED.
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Sprinkler Legend									
	Symbol	Manufacturer	SIN/Model	Quantity	K-Factor	Type	Orifice/Finish	Temperature	Note
FITTINGS		Generic	TY3231	57	5.6	Pendent	1/2" Chrome	155°F	TYCO TY-FRB
		Generic	TY4131	28	6.0	Upright	1/2" Brass	200°F	TYCO QR SSU
		Generic	TY3231	13	5.6	Pendent	1/2" Brass	200°F	TYCO QR SSU
		Generic	TY3231	4	5.6	Pendent	1/2" Brass	155°F	TYCO QR QR HSW 155
		Generic	TY9226	95	25.2	Pendent	1/2" Brass	212°F	ESFR-25
		Generic	TY4231	78	8.0	Pendent	1/2" Brass	200°F	TYCO 8.0K SSP
				Total = 273					
NIG, U.S.G.									

Revisions	Date

AHJ STAMP	

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CONFIDENTIAL	
PRISTINE POOLS 3540 EAGLE ROAD MERIDIAN, ID. 83646	
FP1 1 OF 2 Number of Sheets/Install Plan	