

HYDRAULIC-SYSTEM
THIS BUILDING IS PROTECTED BY A HYDRAULICALLY DESIGNED AUTOMATIC SPRINKLER SYSTEM.

LOCATION: CONFERENCE/STAIR

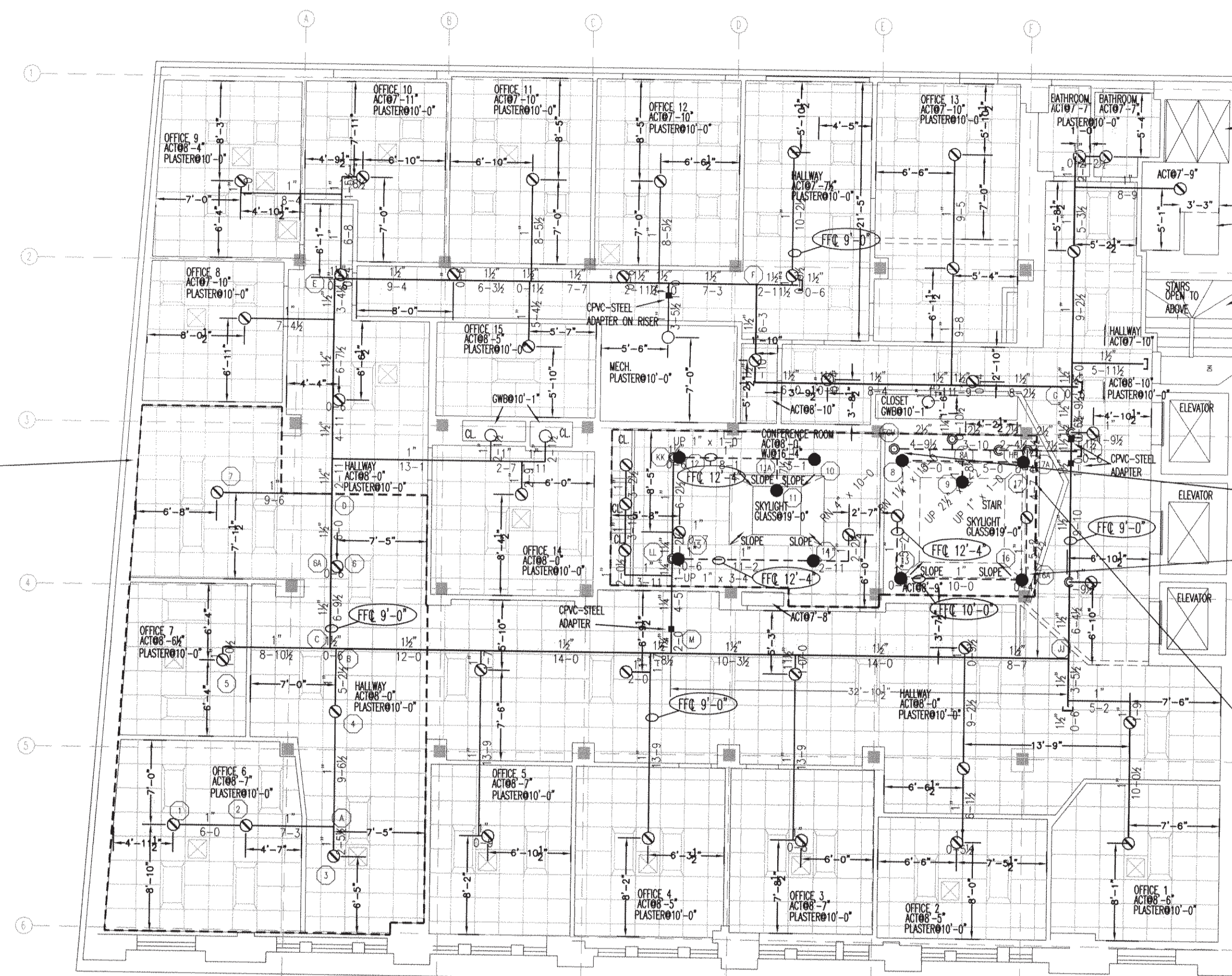
No. of SPRINKLERS: (CALCULATED)	10
BASIS OF DESIGN:	
1. DENSITY (GPM/SQ.FT.)	.1
2. DESIGNED AREA OF DISCHARGE (SQ.FT.)	457
SYSTEM DEMAND:	
1. WATER FLOW RATE (GPM)	192
2. RESIDUAL PRESSURE AT THE PUMP OUTLET (PSI)	119

HYDRAULIC DATA NAMEPLATE
TO BE MOUNTED AT SYSTEM RISER

(OFFICE) PROOF CALC
(1 GPM/SQ.FT. / 1,000 SQ.FT.)
(ELEV. @ HIGHEST HEAD = 229.5)
REMOTE AREA REQUIRED PER NFPA 13(2013) SECTION 11.2.3.2.1

GENERAL NOTES

- SCOPE OF WORK: EASTERN FIRE TO START AT EXISTING 4" STANDPIPE LOCATED ON THE EIGHTH FLOOR STAIRWELL TO EXTEND WET SPRINKLER THROUGHOUT TENTH FLOOR TENANT SPACE ONLY. EXISTING SPRINKLER PROTECTION IN ALL OTHER PORTIONS OF THE BUILDING TO REMAIN AS IS.
- ALL WIRING TO BE DONE BY OTHERS.
- ALTHOUGH NOT SPECIFIED, SOME SPRINKLER HEADS HAVE BEEN SHOWN @ CENTERLINE OF TILE. ACTUAL ORIENTATION OF HEADS WITH RESPECT TO CEILING COMPONENTS WILL VARY ACCORDING TO FIELD CONDITIONS.
- ALL DIMENSIONS ARE SHOWN FOR GENERAL LOCATION OF SPRINKLER HEADS; PIPING MAY VARY TO SUIT LOCAL FIELD CONDITIONS.
- ACOUSTICAL CEILING TILE (ACT) TO BE LISTED NON-COMBUSTIBLE WITH UL FLAME SPREAD OF LESS THAN 25.
- OCCUPANCY DESCRIPTION AND CLASSIFICATION: GENERAL OFFICES; LIGHT HAZARD MECHANICAL & STORAGE AREAS: ORDINARY HAZARD I
- WATER SUPPLY FOR HYDRAULIC CALCULATIONS BASED UPON THE FUTURE INSTALLATION OF A 750 GPM @ 80 PSI FIRE PUMP. PROPOSED FIRE PUMP TO BE INSTALLED IN EXISTING BASEMENT SEE DWG. 1 OF 1 MAINE BANK & TRUST FOR LOCATION.
- = INDICATES HYDRAULIC REFERENCE POINTS.
- F.F. @ INDICATES FINISH FLOOR UP TO CENTERLINE OF PIPE FOR RISER, SITE PLAN & WATER DATA SEE MAINE BANK & TRUST SECOND FLOOR & BASEMENT DWG #E-2156-95 SHEET 1 OF 1
- INDICATES STEEL PIPE
- INDICATES CPVC PIPE

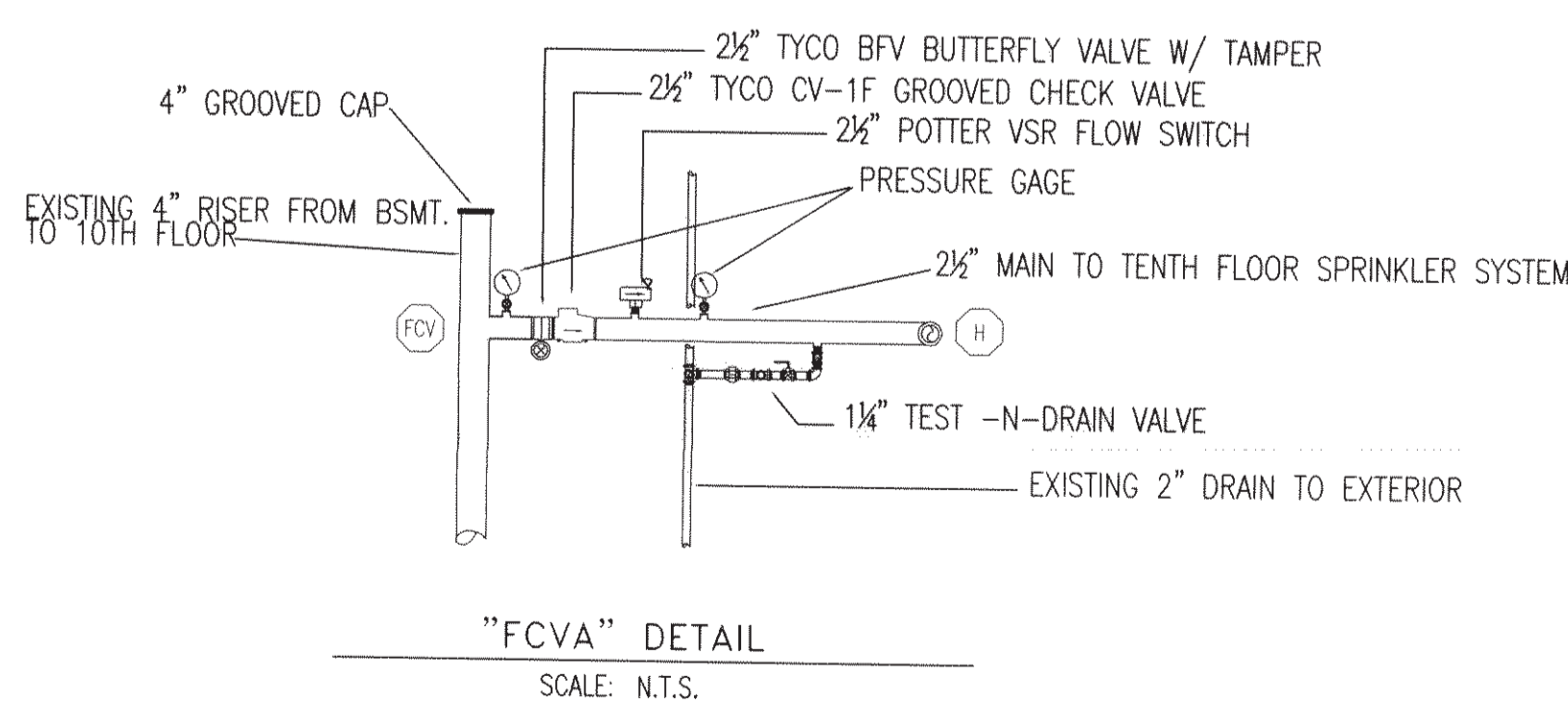


FIRE SPRINKLER PLAN - TENTH FLOOR

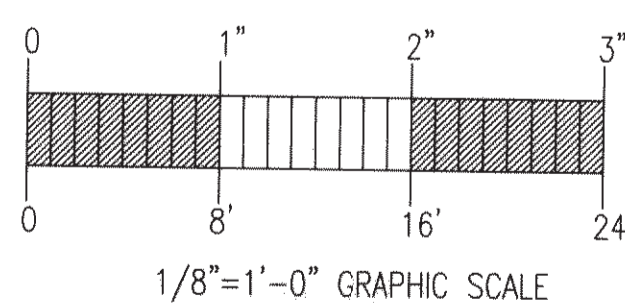
SCALE: 1/8"=1'
AREA PROTECTED: 6,480 SQ.FT.
FINISH FLOOR ELEVATION: 220'-6"
COLOR CODE:

Symbol	Count	Thread	K-Factor	Description	Note
○	4	1/2"	5.6	TYCO TY-FRB TY313 200P BRASS UPRIGHT	on Line
●	10	1/2"	5.6	TYCO TY-FRB TY313 200P BRASS SPRING	on Sprig
○	49	1/2"	5.6	TYCO TY-FRB TY323 200P WHITE RECESSED PENDENT	on Drop

63 = Total Number of Heads this Floor



"FCVA" DETAIL
SCALE: N.T.S.



GENERAL NOTES

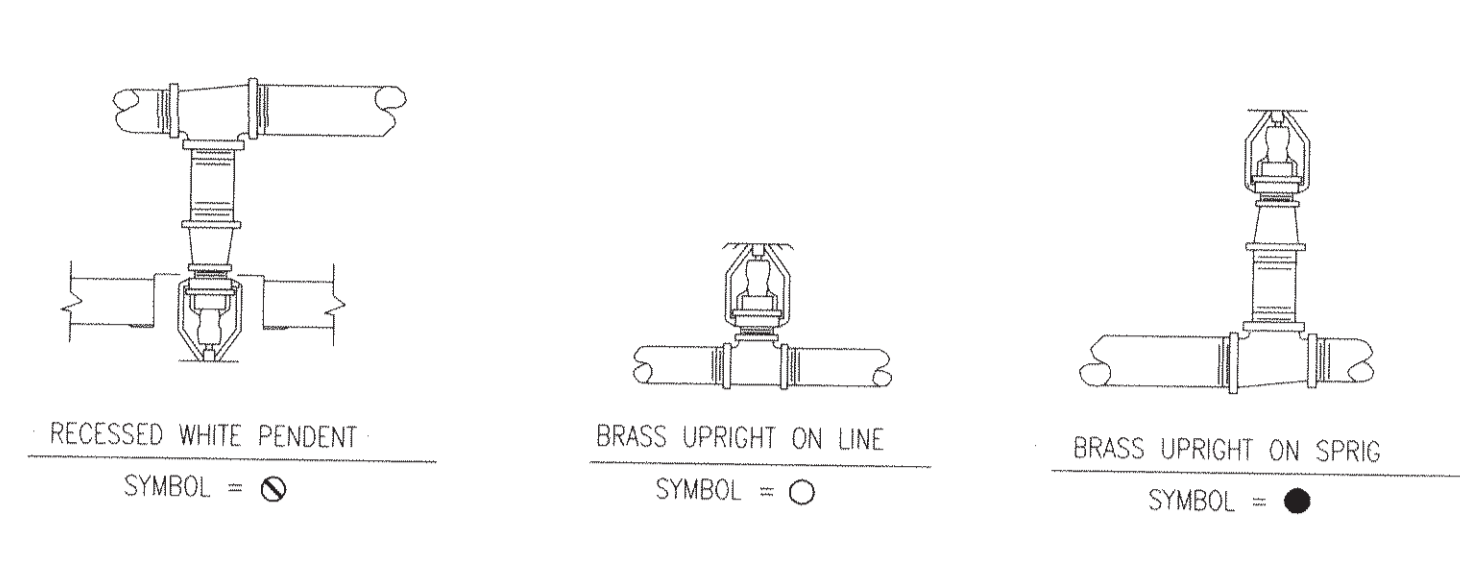
SPRINKLER SYSTEM INSTALLATION TO COMPLY WITH NFPA PAMPHLET # 13 (2010) EDITION

EXPOSED BRANCH LINE PIPING (1"-2") TO BE BLACK SCHEDULE 40 JOINED BY THREADED DUCTILE IRON FITTINGS

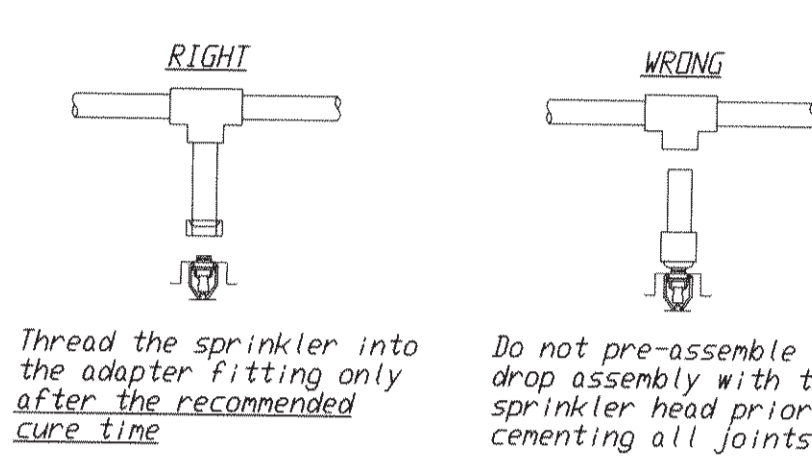
MAIN PIPING (2 1/2"-4") TO BE SCHEDULE # 10 BLACK WITH GROOVED ENDS & WELDED OUTLETS JOINED BY MECHANICAL COUPLINGS

OWNER TO PROVIDE SUFFICIENT HEAT THROUGHOUT BUILDING TO PREVENT FREEZING OF WATER FILLED SPRINKLER PIPING AND EQUIPMENT. (40° F)

CONCEALED BRANCH LINE PIPING (1"-2") TO BE CPVC PLASTIC PIPE C=150 JOINED WITH GLUED CPVC FITTINGS.



SPRINKLER HEAD DETAILS
NOT TO SCALE



CPVC SPRINKLER HEAD INSTALLATION DETAIL
NOT TO SCALE

APPLYING CEMENT, SETTING AND CURE TIMES

Prepare pipe by beveling outside end 10° to 15°, deburring end and wiping any excess fittings. Apply a heavy, even coat of solvent cement to the outside end of the pipe, a medium coat to the inside of the fitting socket and for pipe sizes larger than 1", apply a second coat to the end of the pipe. Beveling allows the cement to remain on the fitting socket inside wall.

A bead of solvent cement should be evident around the pipe and fitting juncture. If this bead is not continuous around the socket shoulder, it may indicate that insufficient cement was applied.

Wipe off excess cement on the outside of the joint. The solvents will evaporate, but the solvent cement inside the fitting will stay there.

WARNING

Avoid applying too much cement. Do not allow the cement to drip beyond the bottom of fitting socket. Excessive cement on the pipe and/or fitting can result in decreasing the overall strength of the pipe and/or fitting and may cause cracks when pressure is applied. Failure to comply could result in property damage due to leaks.

Solvent cement set and cure times are a function of pipe size, temperature, relative humidity, and tightness of fit. Drying time is faster for drier environments, smaller pipe sizes, high temperatures, and tighter fits. The assembly must be allowed to set, without any stress on the joint, for 1 to 5 minutes, depending on the pipe size and temperature. Following the initial set period, the assembly can be handled carefully avoiding significant stresses to the joints. Refer to the cure time tables for minimum cure times prior to pressure testing.

Store cement in a warmer area when not in use and make sure they remain fluid. Do not allow the cement to freeze or become "jelly-like". Gelled cement shall be discarded.

Sprinkler heads shall be installed only after the CPVC pipe and fittings, including the sprinkler head adapters, are solvent welded to the piping and allowed to cure for a minimum of 30 minutes. Sprinkler head fittings should be visually inspected and probed with a wooden dowel to insure that the water way and threads are clear of any excess cement.

It is an unacceptable practice to thread the sprinkler head into the adapter fitting prior to cementing the adapter to the drop.

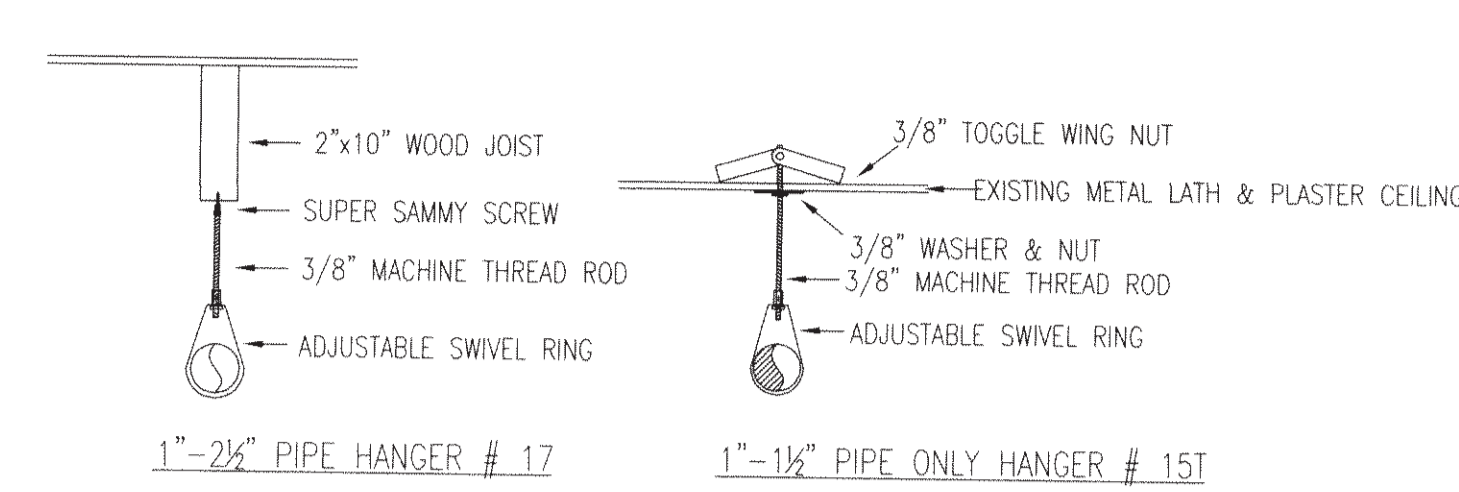
Once an installation is completed and cured, per the appropriate table, the system should be tested with water at 200 psi for 2 hours, or at 50 psi in excess of the maximum pressure when the maximum pressure to be maintained in the system is in excess of 150 psi, in accordance with the requirements established by NFPA 13. Sprinkler systems in one and two family dwellings and mobile homes may be tested at line pressure in accordance with the requirements established by NFPA 13D. When pressure testing, the sprinkler system shall be filled with water and air bled from the highest and farthest sprinkler head before test pressure is applied. Air or compressed gas should never be used for pressure testing. If a leak is found, the fitting must be cut out and discarded. A new section can be installed using couplings or a union. Unions should be used in accessible areas only.

NOTES:

Listings and approvals do not cover any painted CPVC fire sprinkler products. Water-based acrylic latex paint is the preferred and recommended paint to be used on Blazemaster CPVC pipe and fittings. Oil or solvent-based paints may be chemically incompatible with Blazemaster CPVC.

Teflon tape is the recommended sealant for threaded connections to CPVC fire sprinkler products. A list of these firestop systems can be found along with approved thread sealants on-line at www.blazemaster.com. Use only those products that have been approved.

Firestop systems such as HiIti FS-Due have been found to be compatible with CPVC fire sprinkler products. A list of these firestop systems can be found along with approved thread sealants on-line at www.blazemaster.com. Use only those products that have been approved.



HANGER DETAILS
NOT TO SCALE

NOTE:

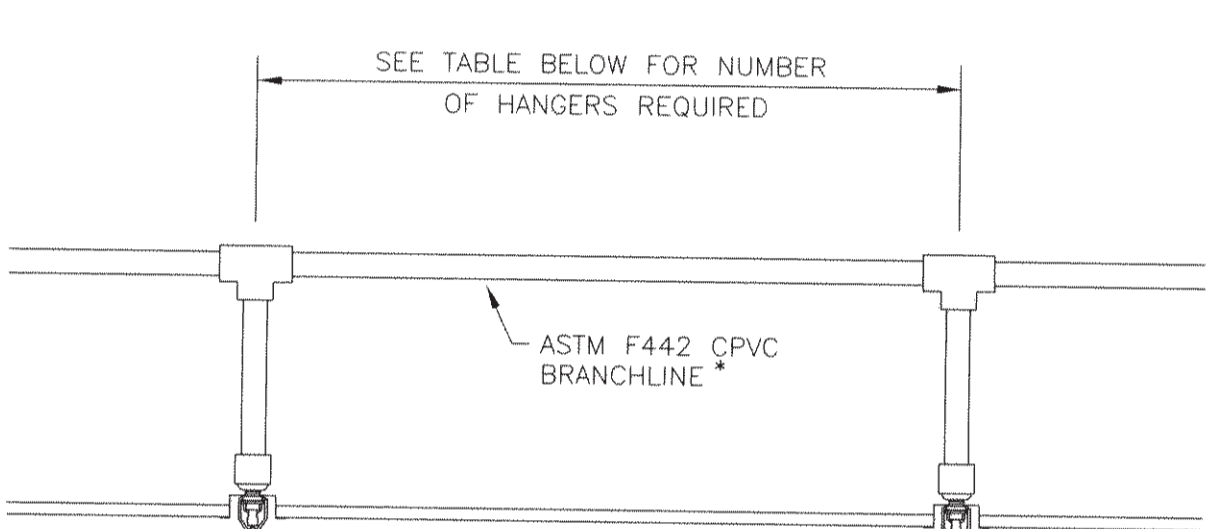
ALL HANGERS TO BE PROVIDED AND INSTALLED AS PER NFPA # 13 3/8" ATR 1"-4" PIPE

NOTE:

PER NFPA 13(2013) SECTION 9.3.1.1.2 TOGGLE HANGERS SHALL BE PERMITTED ONLY FOR THE SUPPLY OF 1" OR SMALLER IN SIZE UNDER CEILING OR HOLLOW TILE OR METAL LATH AND PLASTER. ALL PIPE 2" & LARGER TO BE HUNG FROM EXISTING ROOF STRUCTURE.

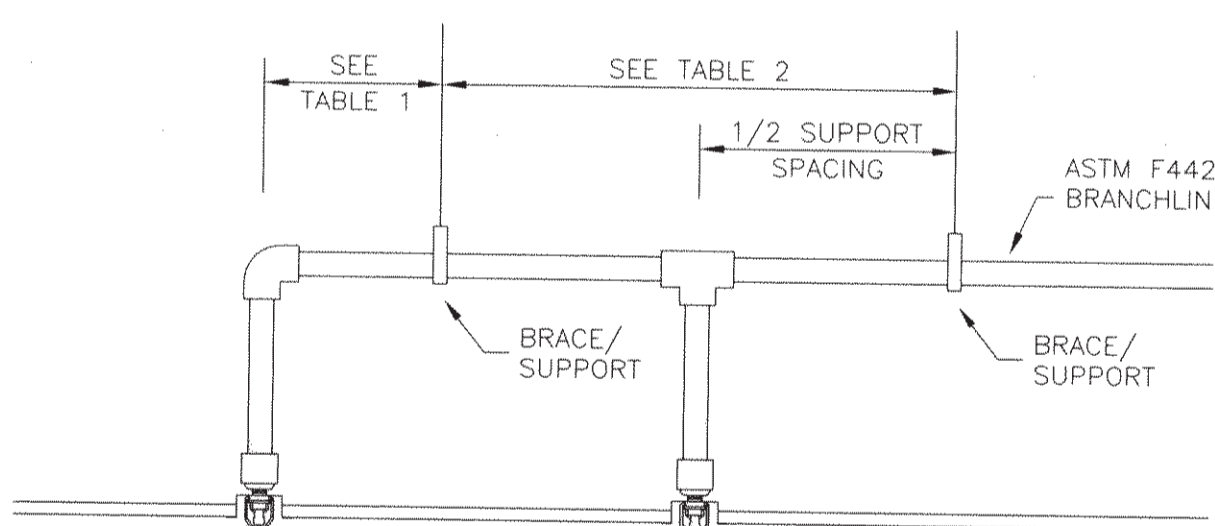
PIPE SIZE inches	CURE TIMES WITH ONE STEP SOLVENT CEMENT 200 PSI (MAXIMUM) TEST PRESSURE		
	Ambient Temperature 60°F to 120°F	During Cure Period 40°F to 59°F	Per NFPA 13(2013) Section 9.3.1.1.2
3/4"	45 min.	1.5 hr.	24 hr.
1"	45 min.	1.5 hr.	24 hr.
1-1/4"	1.5 hr.	16 hr.	120 hr.
1-1/2"	1.5 hr.	16 hr.	120 hr.
2"	6 hr.	36 hr.	See Note 1
2-1/2"	8 hr.	72 hr.	See Note 1
3"	8 hr.	72 hr.	See Note 1

Note 1: For these sizes, the solvent cement can be applied at temperatures below 32°F, however, the sprinkler system temperature must be raised to a temperature of 32°F or above and allowed to cure per the above recommendations prior to pressure testing.



PIPE SIZE inches	MINIMUM ALLOWABLE HANGERS PER LENGTH OF PIPE		
	1 Hanger	2 Hangers	3 Hangers
3/4"	0'-0" TO 5'-6"	5'-7" TO 11'-0"	11'-1" TO 16'-6"
1"	0'-0" TO 6'-0"	6'-1" TO 12'-0"	12'-1" TO 18'-0"
1-1/4"	0'-0" TO 6'-6"	6'-7" TO 13'-0"	13'-1" TO 18'-6"
1-1/2"	0'-0" TO 7'-0"	7'-1" TO 14'-0"	14'-1" TO 21'-0"
2"	0'-0" TO 8'-0"	8'-1" TO 16'-0"	16'-1" TO 24'-0"
2-1/2"	0'-0" TO 9'-0"	9'-1" TO 18'-0"	18'-1" TO 27'-0"
3"	0'-0" TO 10'-0"	10'-1" TO 20'-0"	20'-1" TO 30'-0"

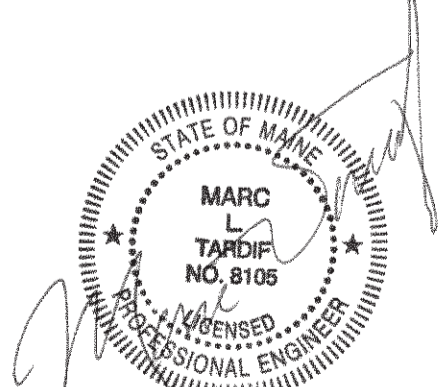
NATIONAL SANITATION FOUNDATION (NSF) APPROVED FOR USE WITH POTABLE WATER



PIPE SIZE inches	TABLE 1: MAXIMUM SUPPORT SPACING DISTANCE END LINE SPRINKLER HEAD DROP ELBOW	
	SYSTEM PRESSURE < 100 psi	> 100 psi
3/4"	9"	9"
1"	12"	9"
1-1/4"	16"	12"
1-1/2"-3"	24"	12"

PIPE SIZE inches	TABLE 2: MAXIMUM SUPPORT SPACING DISTANCE INLINE SPRINKLER HEAD DROP TEE	
	SYSTEM PRESSURE < 100 psi	> 100 psi
3/4"	4"	3"
1"	5"	4"
1-1/4"	6"	5"
1-1/2"-3"	7"	7"

CPVC HANGER INSTALLATION DETAIL
NOT TO SCALE



DATE: 7/18/13	REVISIONS: SUBMITTAL PLAN	REQUIRED APPROVALS: OWNER / ARCHITECT STATE FIRE MARSHAL PORTLAND FIRE DEPARTMENT	465 CONGRESS ST. TENTH FLOOR PORTLAND, ME	FIRE SPRINKLER PLANS & DETAILS
		DRAWN BY: RJP NICET LEVEL: CERT #	CONTRACT WITH: OWNER	DWG. NO. 1 OF 1
		CHECKED BY: WAF NICET LEVEL: III CERT # 095574	EASTERN FIRE PROTECTION	JOB NUMBER AU-5057-13
		CONTRACTOR LICENSE # 101 CONTRACTOR PMS # 368	AUBURN/LEWISTON INDUSTRIAL AIRPARK, AUBURN, MAINE 04210	SCALE AS NOTED
				DATE 07/18/13