

MOST HYDRAULICALLY REMOTE HEADS			
HEAD #	HEAD #	GPM	PRESSURE REQ'D AT STREET
1 HEAD	H.9	17	43.01
2 HEAD	H.7 & H.8	26.6055	45.67

- R49-16 --- 14 RELIABLE-ASSEMBLIES Model FI-R49FI-R49 Recessed Pendant Sprinkler
 K=4.9, 15.5F", 7/16" Orifice, Maximum Spacing 16'x16'
 Sprinkler head demand: 15 gpm @ 7.04
- R49-18 --- 2 RELIABLE-ASSEMBLIES Model FI-R49FI-R49 Recessed Pendant Sprinkler
 K=4.9, 15.5F", 7/16" Orifice, Maximum Spacing 18'x18'
 Sprinkler head demand: 17 gpm @ 12.04

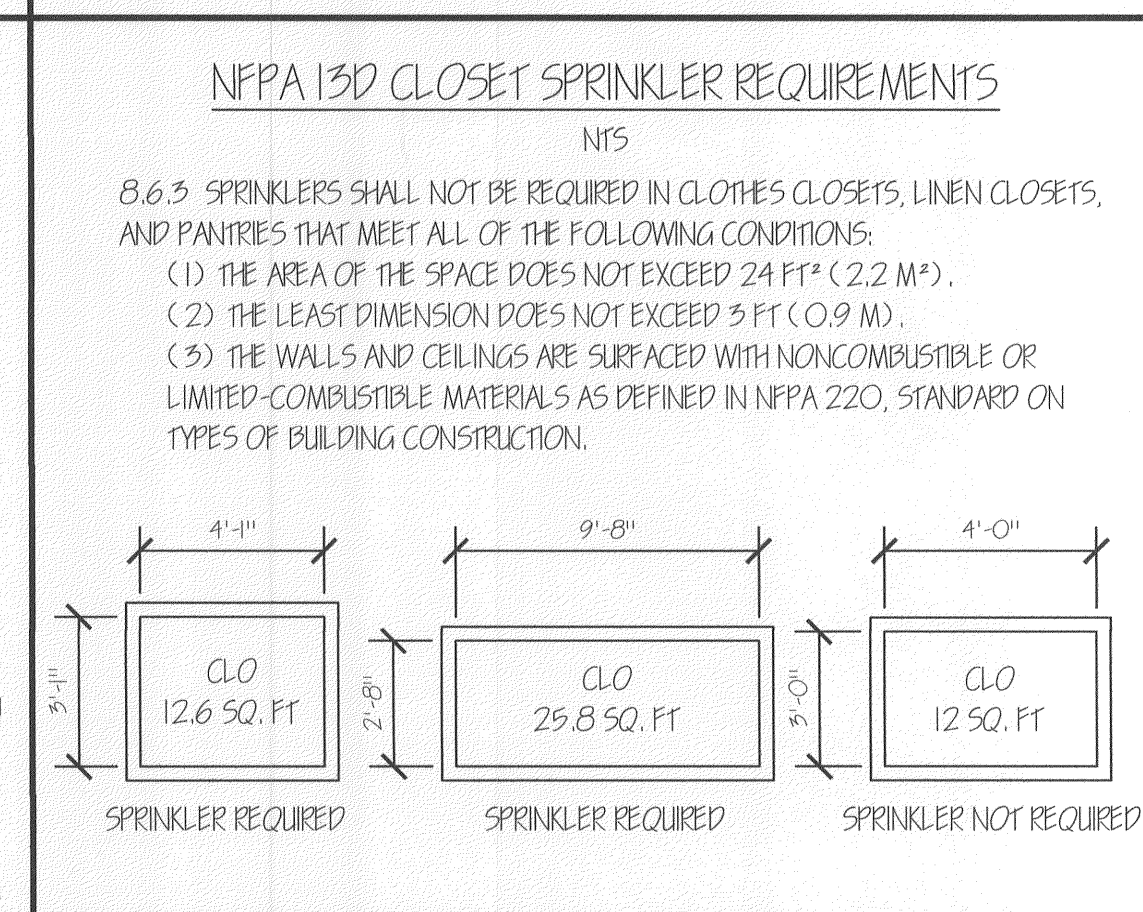
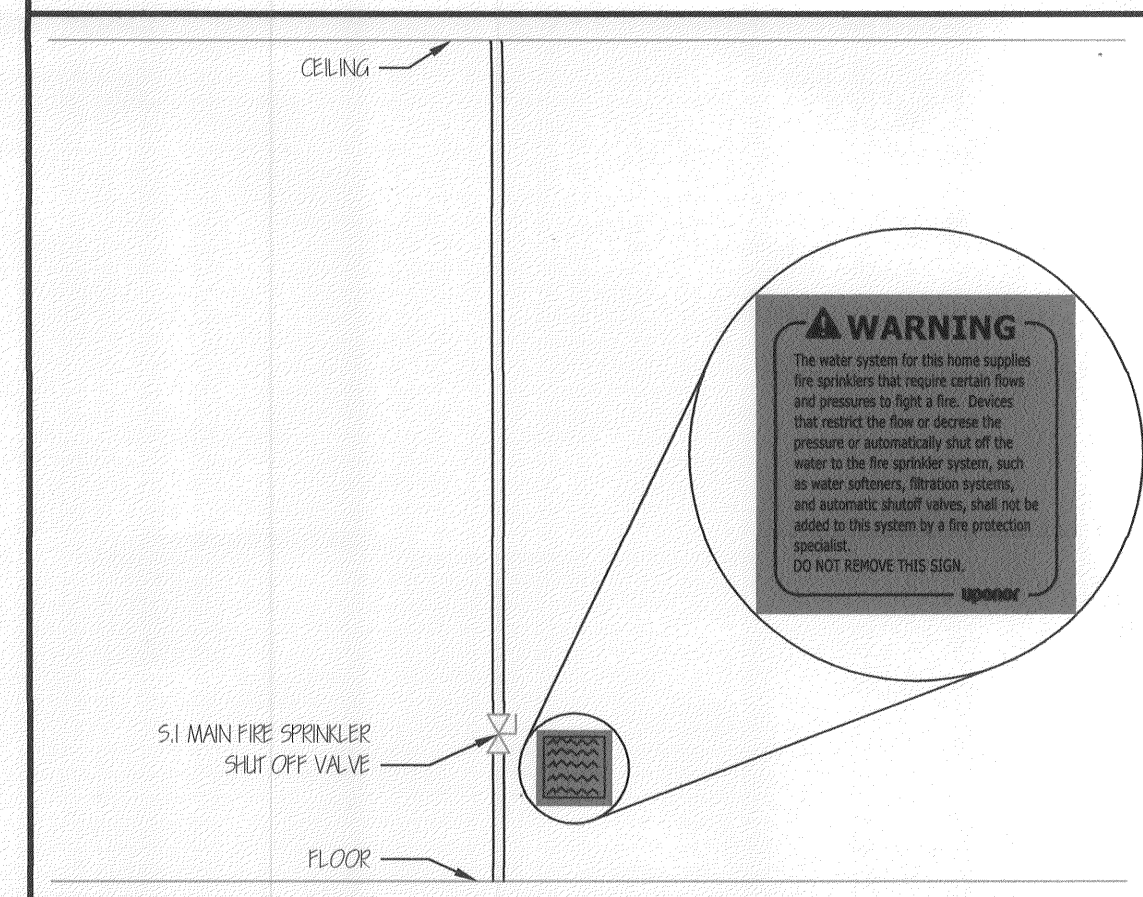
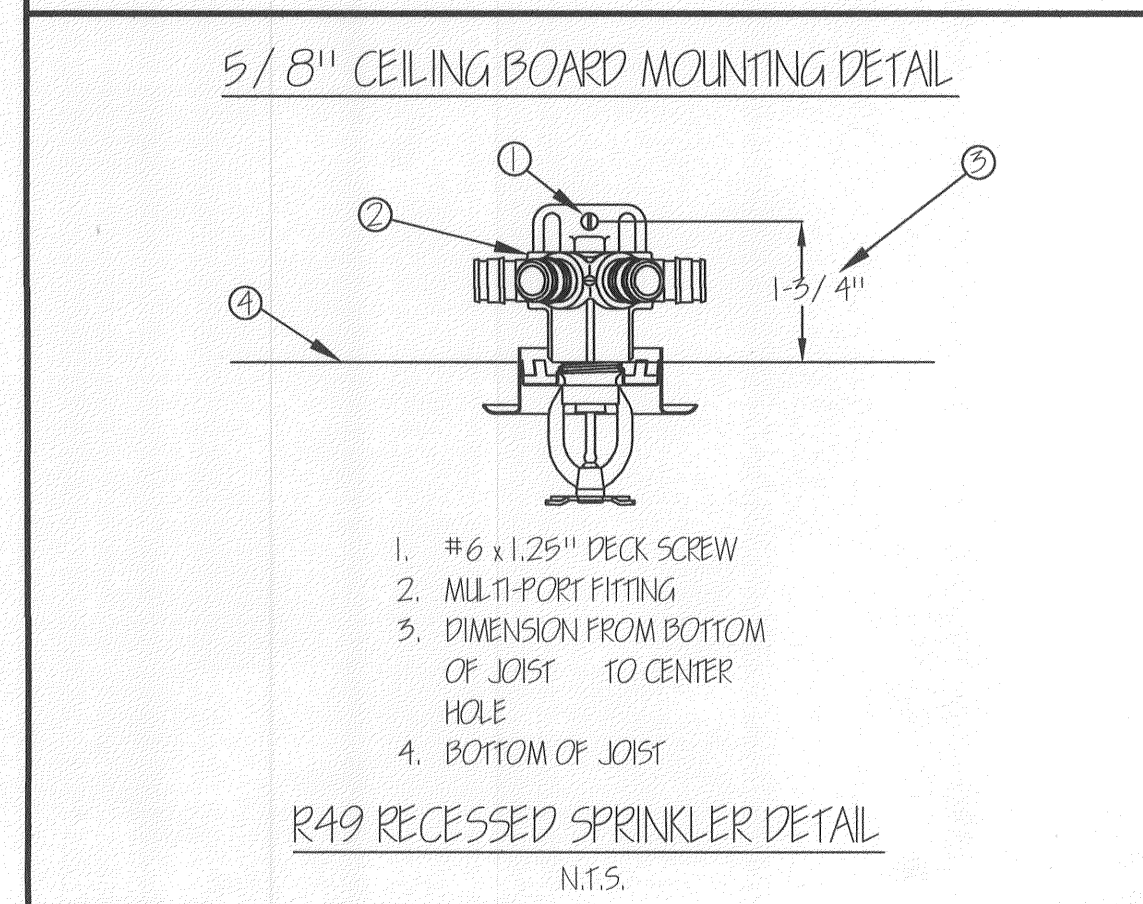
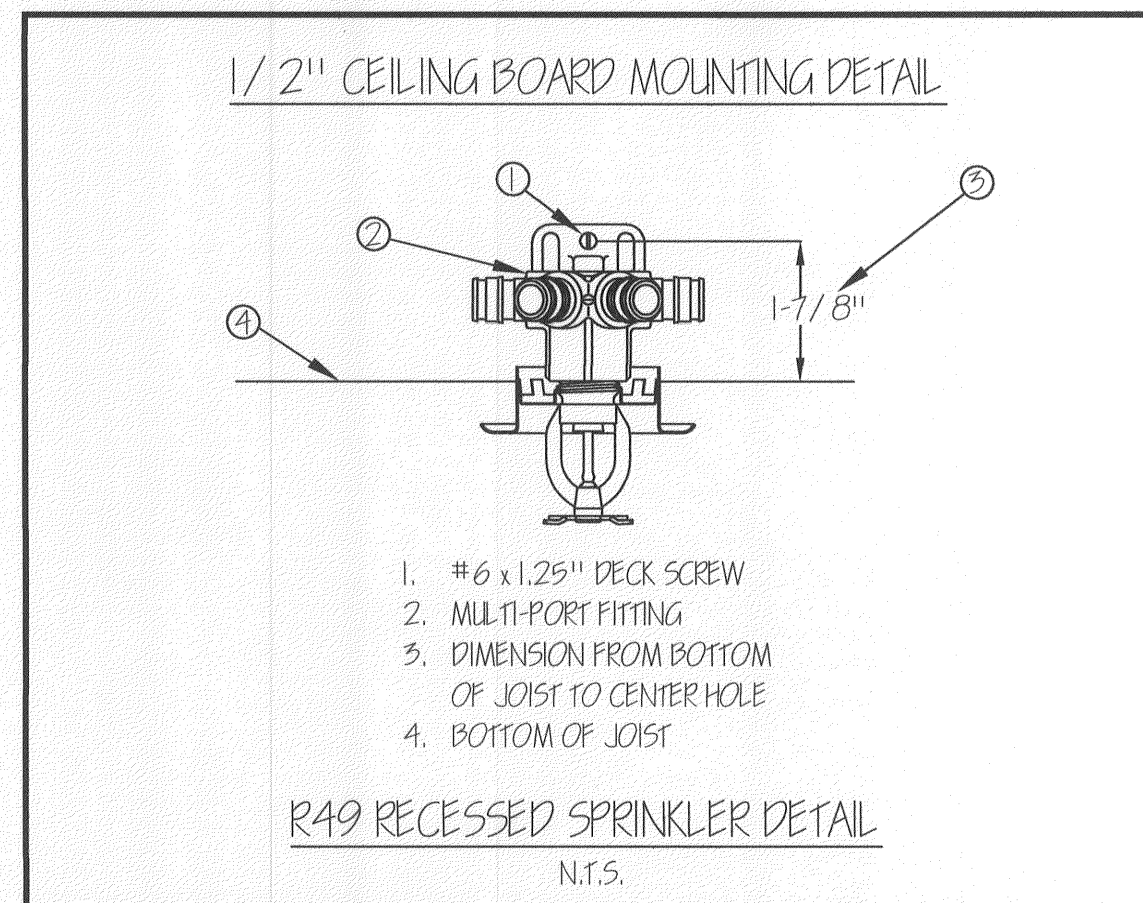
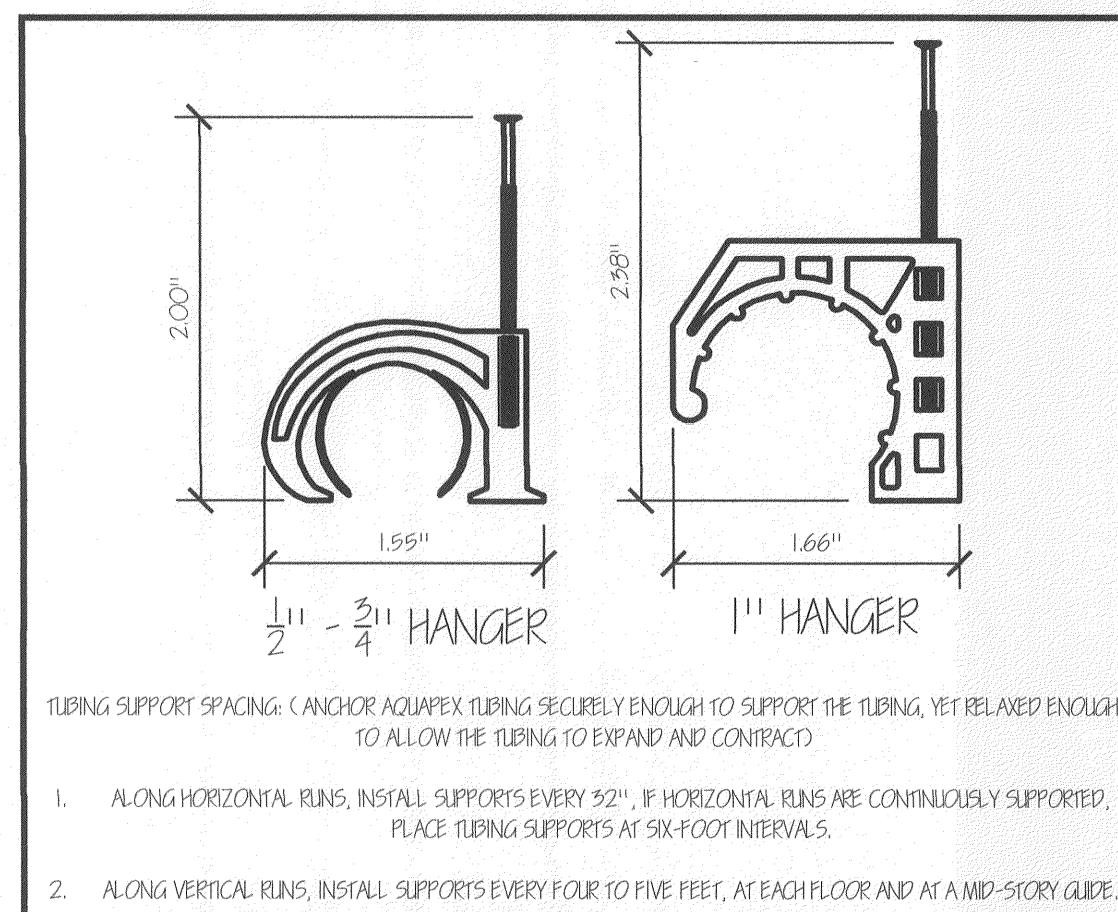
GENERAL NOTES:

- UPONOR COMPANY RESERVES THE EXCLUSIVE RIGHTS TO ALL DETAILS AND DRAWINGS AS SHOWN ON THIS SHEET. THESE DETAILS AND DRAWINGS ARE PROPRIETARY INFORMATION OF UPONOR COMPANY AND UNAUTHORIZED USE MAY BE SUBJECT TO PROSECUTION TO THE FULL EXTENT OF THE LAW.
- THE DESIGN OF THIS SYSTEM IS DICTATED BY SPECIFIC CEILING HEIGHTS AND ROOM SIZES. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT THE CONDITIONS SHOWN ON THESE PLANS ARE EXACTLY AS THEY EXIST IN THE FIELD. DEVIATIONS FROM THE DESIGN MAY CAUSE THE SYSTEM TO BE UNABLE TO CONTROL A FIRE. IF THE BUILDING CONSTRUCTION DIFFERS FROM THE FIRE SPRINKLER PLAN, CONTACT THE SYSTEM DESIGNER IMMEDIATELY.
- THIS SYSTEM AND THE ACCOMPANYING HYDRAULIC CALCULATIONS ARE DESIGNED IN COMPLIANCE WITH NFPA 13D.
- ALL INTERIOR PIPING TO BE UPONOR WIREBO "AQUAPEX" UNLESS NOTED.
- UPONOR WIREBO "AQUAPEX" TUBING TO BE SUPPORTED PER NFPA 13D AND MANUFACTURER'S RECOMMENDATIONS.
- MINIMUM SPACING BETWEEN SPRINKLERS IS 8'-0" REFER TO SPACING CHARTS FOR MAXIMUM SPACING BETWEEN SPRINKLERS AND FROM WALLS.
- SPRINKLERS ARE NOT NECESSARILY CENTERED IN ROOMS DUE TO LIGHT FIXTURES OR OTHER CEILING MOUNTED OBSTRUCTIONS.
- THE TUBING ROUTING SHOWN ON THIS DRAWING IS INTENDED TO BE SCHEMATIC IN NATURE. THIS DRAWING SHOWS SUGGESTED ROUTING ONLY. ALTERNATE ROUTINGS MAY BE USED, SO LONG AS THE SPRINKLERS ARE CONNECTED IN THE ARRANGEMENT SHOWN.
- THE PLUMBING TIE IN CONNECTIONS ARE SCHEMATIC IN NATURE AND CAN BE INSTALLED ANYWHERE IN THE SPRINKLER GRID BETWEEN SPRINKLER TO SPRINKLER CONNECTIONS (GREEN AND BLACK LINES) BUT NOT MANIFOLD TO SPRINKLER CONNECTIONS (RED LINES).
- THIS SUGGESTED LAYOUT IS BASED UPON INFORMATION PROVIDED BY OTHERS. CHANGES IN CONSTRUCTION OR FIELD CONDITIONS MAY OCCUR WHICH MAY REQUIRE CHANGES TO THE LAYOUT. IT IS THE RESPONSIBILITY OF THE INSTALLER TO NOTIFY UPONOR TECHNICAL SERVICES OF SUCH CHANGES.
- NFPA 13D 8.6 LOCATION OF SPRINKLERS
 - 8.6.1 SPRINKLERS SHALL BE INSTALLED IN ALL AREAS EXCEPT WHERE OMISSION IS PERMITTED BY 8.6.2 THROUGH 8.6.7.
 - 8.6.2 SPRINKLERS SHALL NOT BE REQUIRED IN BATHROOMS OF 55FT² (5.1M²) AND LESS
 - 8.6.3 SPRINKLERS SHALL NOT BE REQUIRED IN CLOTHES CLOSETS, LINEN CLOSETS, AND PANTRIES THAT MEET ALL OF THE FOLLOWING CONDITIONS:
 - THE AREA OF THE SPACE DOES NOT EXCEED 24FT² (2.2M²).
 - THE LEAST DIMENSION DOES NOT EXCEED 3 FT (0.9M).
 - THE WALLS AND CEILINGS ARE SURFACED WITH NONCOMBUSTIBLE OR LIMITED-COMBUSTIBLE MATERIALS AS DEFINED IN NFPA 220, STANDARD ON TYPES OF BUILDING CONSTRUCTION.
 - 8.6.4* SPRINKLERS SHALL NOT BE REQUIRED IN GARAGES, OPEN ATTACHED PORCHES, CARPORTS, AND SIMILAR STRUCTURES
 - 8.6.4 ALTHOUGH NFPA 13D DOES NOT REQUIRE GARAGES TO BE SPRINKLERED, SOME AUTHORITIES HAVING JURISDICTION TAKE IT UPON THEMSELVES TO ADD THIS REQUIREMENT LOCALLY. IN SUCH CIRCUMSTANCES, RESIDENTIAL OR QUICK-RESPONSE SPRINKLERS WITH A TWO-SPRINKLER DESIGN IN THE GARAGE WITH THE SAME PIPING USED IN THE REST OF THE DWELLING MAY BE USED. IT IS RECOGNIZED THAT RESIDENTIAL SPRINKLERS HAVE NOT BEEN TESTED SPECIFICALLY FOR FIRES IN GARAGES, BUT FIELD EXPERIENCE HAS SHOWN THAT THE SPRINKLERS HELP TO ALERT OCCUPANTS TO THE FACT THAT THERE IS A FIRE, CAN REDUCE THE POSSIBILITY OF FLASHOVER, AND CAN IMPROVE THE CHANCES FOR OCCUPANTS TO ESCAPE.
 - 8.6.5 SPRINKLERS SHALL NOT BE REQUIRED IN ATTICS, PENTHOUSE EQUIPMENT ROOMS, ELEVATOR MACHINE ROOMS, CONCEALED SPACES DEDICATED EXCLUSIVELY TO AND CONTAINING ONLY DWELLING UNIT VENTILATION EQUIPMENT, FLOOR/CEILING SPACES, ELEVATOR SHAFTS, CRAWL SPACES, AND OTHER CONCEALED SPACES THAT ARE NOT USED OR INTENDED FOR LIVING PURPOSES AND DO NOT CONTAIN FUEL-FIRED EQUIPMENT.
 - 8.6.6 SPRINKLERS SHALL NOT BE REQUIRED IN COVERED UNHEATED PROJECTIONS OF THE BUILDING AT ENTRANCES/ EXITS AS LONG AS THERE IS ANOTHER MEANS OF EGRESS FROM THE DWELLING UNIT.
 - 8.6.7 SPRINKLERS SHALL NOT BE REQUIRED FOR CEILING POCKETS THAT MEET THE FOLLOWING CONDITIONS:
 - THE TOTAL VOLUME OF UNPROTECTED CEILING POCKET DOES NOT EXCEED 100 FT³ (2.85 M³).
 - THE ENTIRE FLOOR UNDER THE UNPROTECTED CEILING POCKET IS PROTECTED BY THE SPRINKLERS AT THE LOWER CEILING ELEVATION.
 - EACH UNPROTECTED CEILING POCKET IS SEPERATED FROM ANY ADJACENT UNPROTECTED CEILING POCKET BY A MINIMUM 10 FT (3.05 M) HORIZONTAL DISTANCE.
 - THE INTERIOR FINISH OF THE UNPROTECTED CEILING POCKET IS NONCOMBUSTIBLE OR LIMITED-COMBUSTIBLE MATERIAL.
 - SKYLIGHTS NOT EXCEEDING 32 FT² (2.97 M²) SHALL BE PERMITTED TO HAVE A PLASTIC COVER.

SLOPE: RISE / RUN	PITCH: DEGREES	DEFINE REFERENCE
0/12	0°	FLAT CEILING NOT TO EXCEED 9.4'
1/12	4.5°	
2/12	9.4°	
3/12	14°	SLOPED CEILING* >9.4' UP TO 18.4'
4/12	18.4°	
5/12	22.5°	SLOPED CEILING* >18.4' UP TO 33.7'
6/12	26.5°	
7/12	30.25°	
8/12	33.7°	
9/12	36.75°	
10/12	39.75°	GUIDANCE AND COORDINATION FROM AHJ* >33.7' CONTACTOR/ DESIGNER
11/12	42.5°	
12/12	45°	
13/12	47.25°	
14/12	49.5°	
15/12	51°	
16/12	53°	
17/12	54.5°	
18/12	56°	*RELIABLE BULLETIN 035

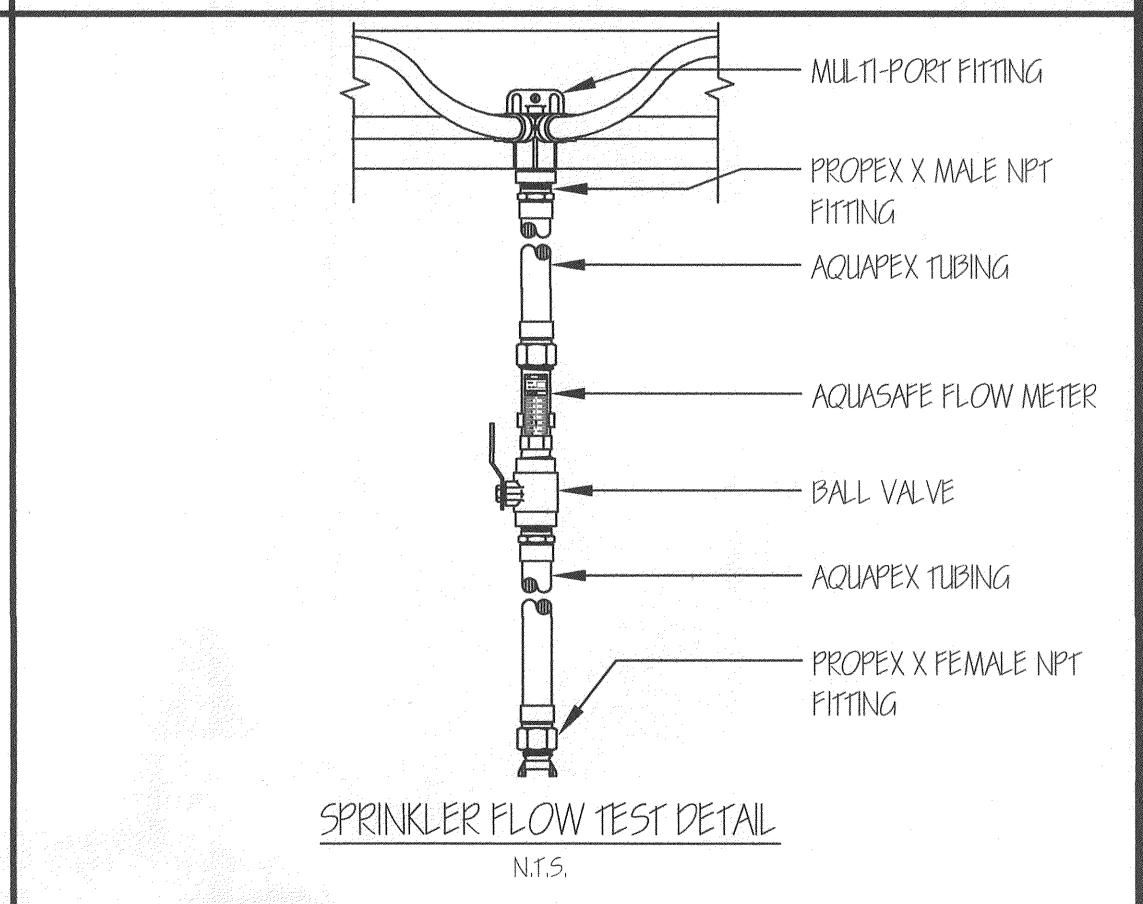
MARKUP LEGEND	
DELETE LINE:	
ADD LINE:	
ADD TEE:	
ADD ELBOW:	
ADD COUPLING:	
ADD HEAD:	
DELETE HEAD:	
MOVE HEAD:	

NOTE: ALL REVISIONS MUST BE REVIEWED BY UPONOR



NFPA 13D TABLE 7.5.5.3
 DISTANCES FROM HEAT SOURCES

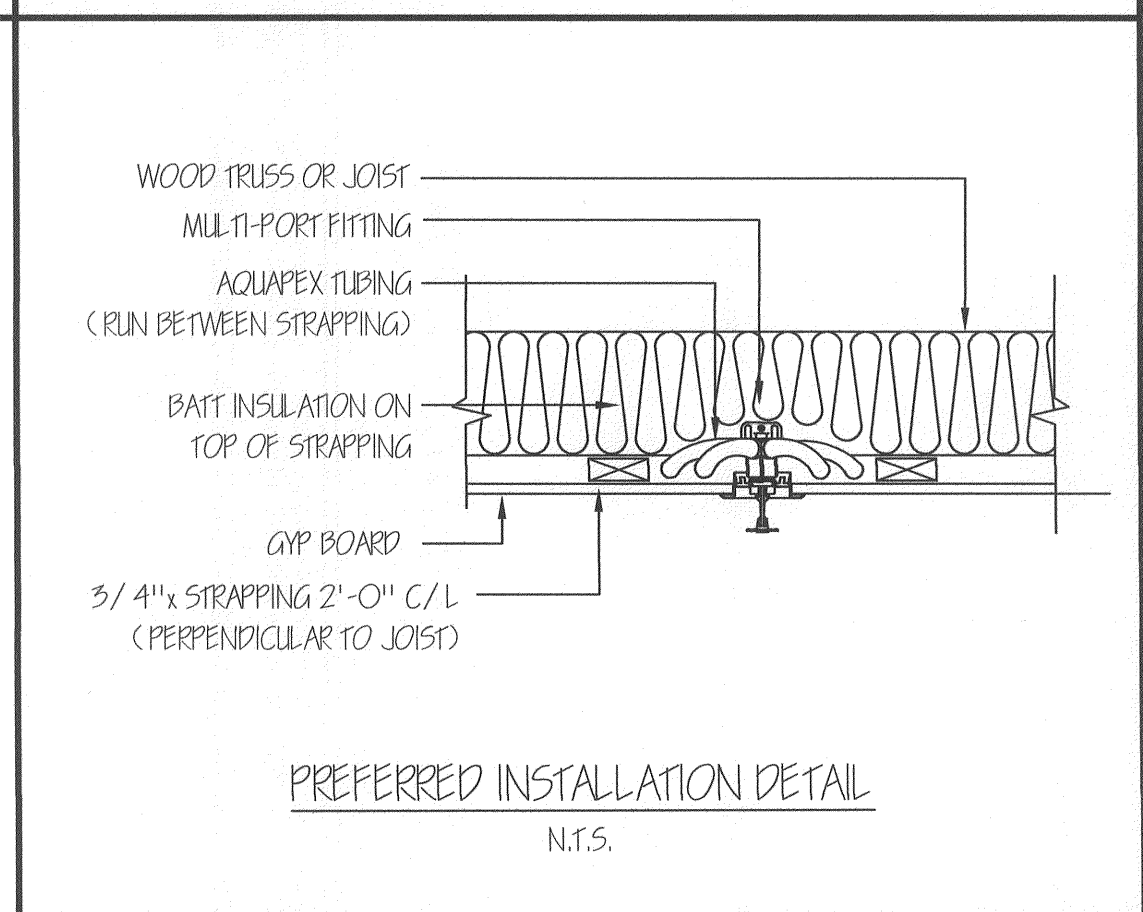
HEAT SOURCE	ORDINARY TEMP IN.	INTERMEDIATE TEMP IN.
SIDE OF FIREPLACE	36"	12"
FRONT OF FIREPLACE	60"	36"
WOOD BURNING STOVE	42"	12"
KITCHEN RANGE	18"	9"
WALL OVEN	18"	9"
HOT AIR FLEES	18"	9"
UNINSULATED HEAT DUCTS	18"	9"
UNINSULATED HOT WATER PIPES	12"	6"
SIDE OF HOT AIR DIFFUSER	24"	12"
FRONT OF HOT AIR DIFFUSER	36"	18"
HOT WATER HEATER	6"	3"
FURNACE	6"	3"
CW-250W LIGHT FIXTURE	6"	3"
250W-499W LIGHT FIXTURE	12"	6"



TEST ORIFICES

SPRINKLER MODEL	K-FACTOR	IDENTIFICATION
RELIABLE F-RES 16 SEMI-RECESSED	3.0	WHITE
RELIABLE F-RES 18 SEMI-RECESSED, F/ IRES CCP CONCEALED AND F/ IRES 3 HORIZONTAL SIDEWALL	3.9	BRONZE
RELIABLE FI/ RES 40 HORIZONTAL SIDEWALL	4.0	GRAY
RELIABLE FI/ RES 44 HORIZONTAL SIDEWALL	4.4	BLUE
RELIABLE FI/ RES 49 SEMI-RECESSED AND F/ IRES 49 CCP CONCEALED	4.9	BLACK
RELIABLE RFC 45 CONCEALED RESIDENTIAL SPRINKLER	4.5	RED OR BRONZE HEX

THE AQUASAFE™ INSTALLATION MANUAL CONTAINS DETAILED INSTRUCTIONS FOR CONDUCTING A PROPER FLOW-VERIFICATION TEST. PER NFPA 13D, UPONOR PROVIDES BOTH ONE- AND TWO- HEAD FLOW CALCULATIONS, HOWEVER, UPONOR ONLY REQUIRES A ONE-SPRINKLER FLOW-VERIFICATION TEST. A TWO-SPRINKLER FLOW TEST MAY BE PERFORMED IF REQUESTED BY THE AUTHORITY HAVING JURISDICTION (AHJ).



Uponor

FIRE SPRINKLER

5925 148TH STREET WEST
 APPLE VALLEY, MN 55124
 TOLL FREE: 800-321-4759
 FAX: 952-891-1409
 www.uponor-usa.com

SALES REP:

RESIDENTIAL FIRE PROTECTION SYSTEM	
TUBE TYPE: 1/2" AQUAPEX	
SPRINKLER INFORMATION	
# OF HEADS THIS SHEET -	0
# OF HEADS THIS JOB -	16
STATIC PRESSURE IS -	72

BRACKETT CONSTRUCTION

LOT 6 STEPPING STONE LANE

PORTLAND, ME 04101

1	PRELIM. & CONST.	3/3/11
2		
3		
4		
NO.	REVISION/ ISSUE	DATE

PROJECT #: 110302-40N
 ALLIANCE ID#: 1184
 COMPANY: JERRY'S PLUMBING & HEATING
 CONTACT: JERRY GUERTIN
 CONTACT PHONE: 207-282-2349
 SCALE: 1/4" = 1'-0"
 DESIGNER BY: DANIEL P. HILBARD
 CHECKED BY: DANIEL P. HILBARD
 CET LEVEL IV: 110502

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