

Table F002-1
Multipurpose Fire Safety Systems
 The Uponor residential fire safety system is a residential fire protection system installed in combination with the cold side of the domestic potable water system. Only licensed contractors trained by Uponor can install this system.

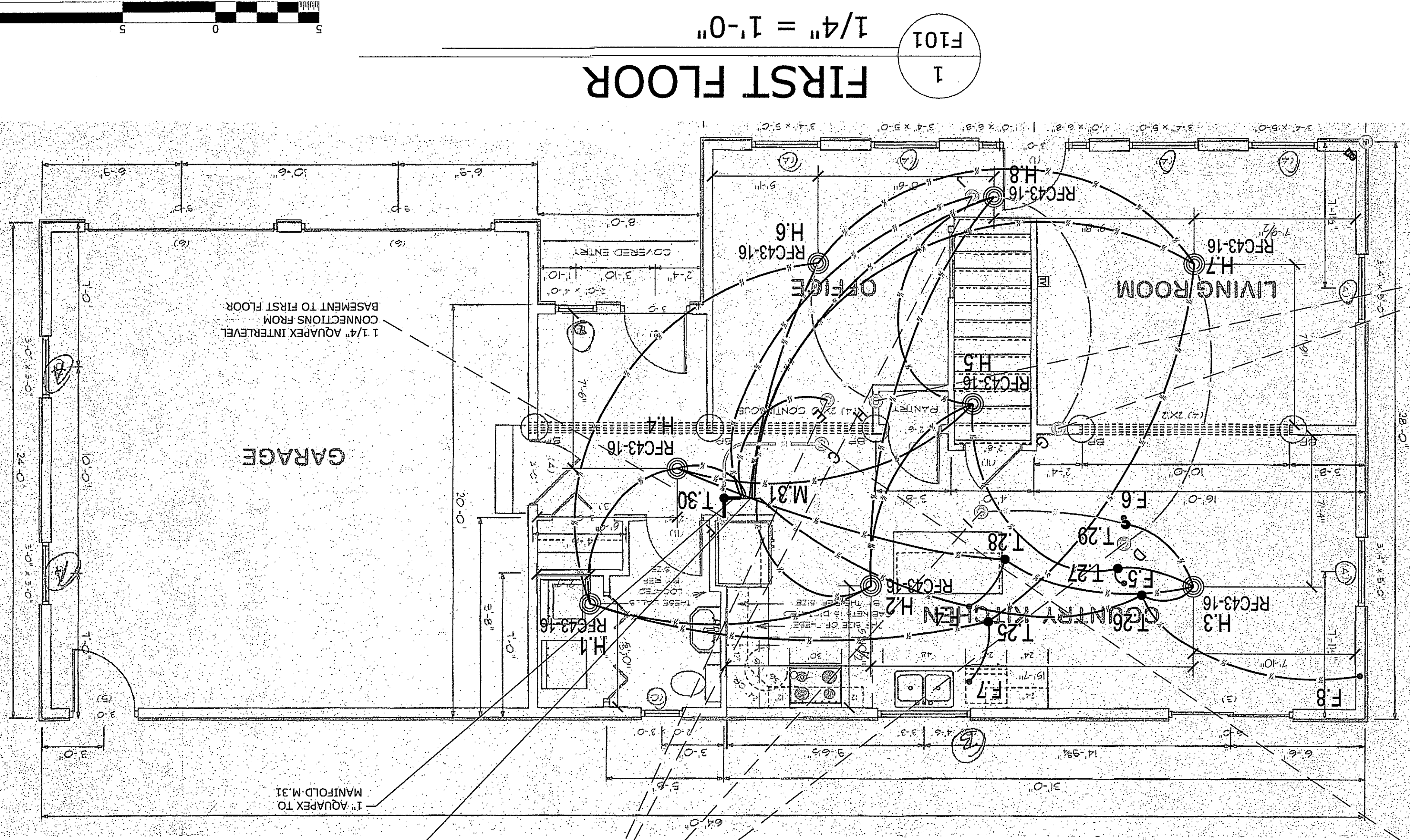
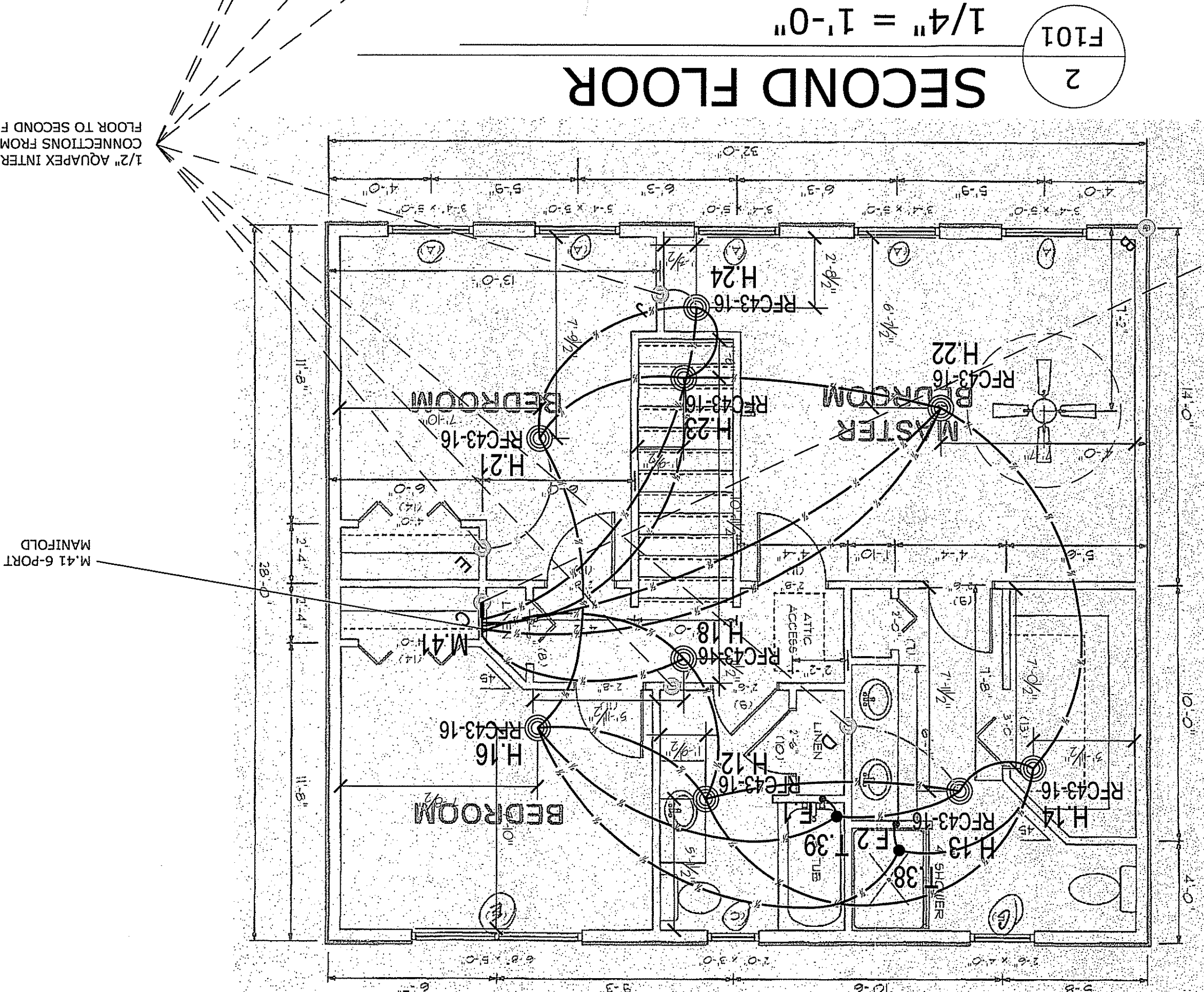
What to do if Changes are Required
 If any features or obstructions require the addition or deletion of sprinkler heads, or significant relocation of sprinkler heads, contact the Uponor Designer Department to determine if observed changes require a redesign.
 (888.594.7726).

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

SPRINKLER SYMBOL DEFINITION

	SLOPED CEILING MAX. SLOPE OF 8:12
	SLOPED CEILING MAX. SLOPE OF 4:12
	MAXIMUM SPACING (TYP)
	SPRINKLER MODEL (TYP)
	HEAD SYMBOL (TYP)



COLOR/LINETYPE LEGEND

	BLUE LINES= FEED TO FIXTURES (BATH, SHOWER, ETC.)
	GREEN LINES= SPRINKLER TO SPRINKLER CONNECTIONS BETWEEN FLOORS.
	RED LINES= DIRECT FEED SPRINKLER FROM MANIFOLD.
	BLACK LINES= SPRINKLER HEAD TO SPRINKLER HEAD.
	= 1/2" PIPE SIZE
	= 3/4" PIPE SIZE
	= 1" PIPE SIZE
	= 1-1/4" PIPE SIZE
	= 2" PIPE SIZE

DISCLAIMER

THIS SERIES OF PLUMBING, HYDRONIC HEATING/COOLING, SNOW AND ICE MELTING, AND/OR FIRE SPRINKLER TECHNICAL DRAWINGS HAVE BEEN PREPARED BY UPONOR DESIGN SERVICES, INC. (UPONOR DESIGN DEPARTMENT). THEY HAVE BEEN PREPARED TO MEET PROFESSIONAL STANDARDS OF DESIGN AND CONSTRUCTION. BEFORE STARTING ALL WORK ASSOCIATED WITH THIS DESIGN, IT IS MANDATORY TO MAKE A CAREFUL REVIEW OF ALL DRAWINGS AND SPECIFICATIONS TO MAKE SURE ALL CHANGES TO UPONOR, INC. TECHNICAL SERVICES - DESIGN DEPARTMENT TO DETERMINE IF THE DESIGN REQUIRES REVISION. IF ERRORS AND/OR OMISSIONS ARE FOUND, REPORT ANY ERRORS AND/OR DESIGN CHANGES TO UPONOR, INC. TECHNICAL SERVICES - DESIGN DEPARTMENT. UPONOR DESIGN SERVICES, INC. ACCEPTS NO RESPONSIBILITY FOR THE INSTALLER TO DISBURSE SYSTEM DESIGN AND CONSTRUCTION IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS. THERE IS NO WARRANTY WRITTEN, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE APPLICATION AND INSTALLATION OF THESE DRAWINGS.

SALES REP:

uponor

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GRABARZ RESIDENCE
25 HAVERLYS WAY
PORTLAND, ME 04101

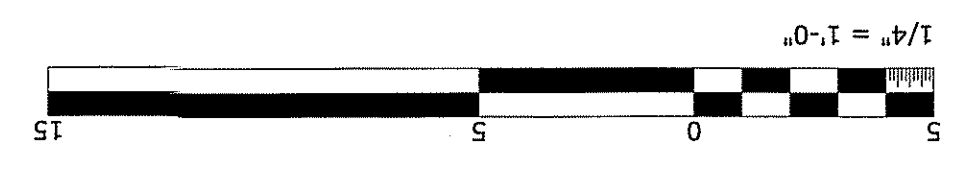
NO.	DATE	DESCRIPTION

REVISIONS:

DESIGNED BY:	BRENT KOTJULA, SET IV	CONTACT PH. NUMBER:	207.415.3375
CHECKED BY:	DAVE HUBBARD	ALLIANCE ID:	TBD
DATE:	11/15/12	PILOT DATE:	11/15/12
PROJECT NUMBER:	121109-42L	SHEET SCALE:	1/4" = 1'-0"
PROJECT SQUARE FEET:	2814 SQ. FT.		

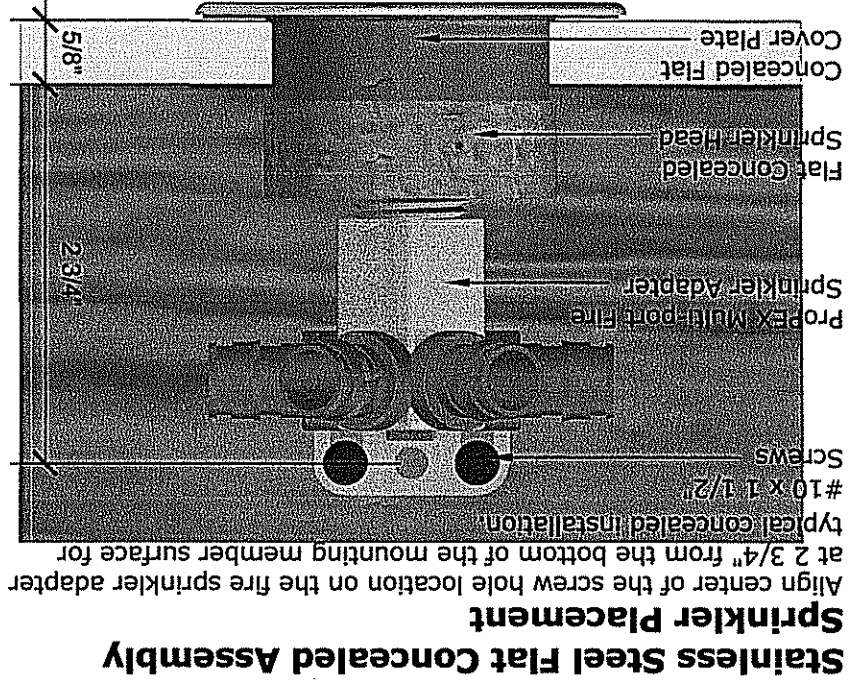
COMPANY: RSD PLUMB & HTG
 CONTACT: ROBERT DOOR

F101
 SHEET NUMBER



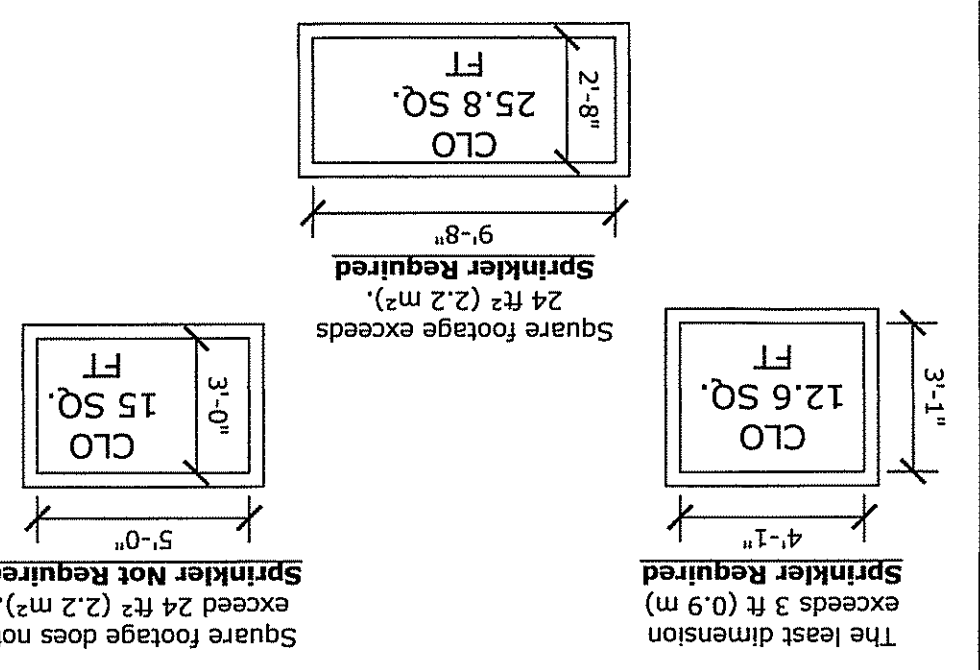
AQUASAFE™ GENERAL NOTES:

1. THIS SYSTEM IS DESIGNED AS PER NFPA 13D 2010 EDITION AS A RESIDENTIAL MULTIPURPOSE SYSTEM.
2. UPONOR COMPANY RESERVES THE EXCLUSIVE RIGHTS TO ALL DETAILS AND DRAWINGS AS SHOWN ON THIS SHEET. THESE DETAILS ARE PROPRIETARY INFORMATION OF UPONOR COMPANY AND UNAUTHORIZED USE MAY BE SUBJECT TO PROSECUTION TO THE FULL EXTENT OF THE LAW.
3. 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.
4. THIS SYSTEM AND THE ACCOMPANYING HYDRAULIC CALCULATIONS ARE DESIGNED IN COMPLIANCE WITH NFPA 13D 2010 EDITION.
5. "STAND ALONE" OR "MULTIPURPOSE, WET PIPE" SYSTEMS ARE NOT PERMITTED TO USE ANTI-FREEZE. MODIFICATIONS ARE PROHIBITED. SPRINKLERS THAT HAVE BEEN PAINTED, CAULKED, MODIFIED OR WATER SHUT OFF VALVE IS NOT PERMITTED.
6. OWNERS MANUAL MUST BE PROVIDED TO THE OWNER.
7. AT THE MAIN SHUT OFF VALVE, A TAG OR A SIGN STATING THE FOLLOWING IS REQUIRED: "WARNING, THE WATER SYSTEM FOR THIS HOME SUPPLIES FIRE SPRINKLERS THAT REQUIRE CERTAIN FLOWS AND PRESSURES TO FIGHT A FIRE. DEVICES THAT RESTRICT THE FLOW OR DECREASE THE PRESSURE OR AUTOMATICALLY SHUT OFF THE WATER TO THE FIRE SPRINKLER SYSTEM, SUCH AS WATER SOFTENERS, FILTRATION SYSTEMS AND AUTOMATIC SHUT OFF VALVES, SHALL NOT BE ADDED TO THIS SYSTEM WITHOUT REVIEW OF THE FIRE SPRINKLER SYSTEM BY A FIRE PROTECTION SPECIALIST. DO NOT REMOVE THIS SIGN".
8. ALL INTERIOR PIPING TO BE UPONOR "AQUASAFE" TUBING TO BE SUPPORTED PER NFPA 13D AND MANUFACTURERS RECOMMENDATIONS.
9. MINIMUM SPACING BETWEEN SPRINKLERS IS 8'-0" REFER TO SPACING CHARTS FOR MAXIMUM SPACING BETWEEN SPRINKLERS AND FROM WALLS.
10. SPRINKLERS ARE NOT NECESSARILY CENTERED IN ROOMS DUE TO LIGHT FIXTURES OR OTHER CEILING MOUNTED OBSTRUCTIONS.
11. SPRINKLER LOOP ANYWHERE BETWEEN SPRINKLER TO SPRINKLER CONNECTION.
12. THIS SUGGESTED LAYOUT IS BASED UPON INFORMATION PROVIDED BY OTHERS. CHANGES IN CONSTRUCTION OR FIELD CONDITIONS MAY OCCUR WHICH MAY REQUIRE TECHNICAL SERVICES OF SUCH AS AN INSULATION GUIDE LINES PER NFPA 13D.
13. INSULATION GUIDE LINES PER NFPA 13D.
14. PIPING IS INSTALLED IN AREAS MAINTAINED ABOVE 40°F, INCLUDING AREAS PROPERLY INSULATED TO BE TO BE USED WHERE ALL 8.3.1* WET PIPE SYSTEMS. A WET PIPE SYSTEM SHALL BE PERMITTED TO BE USED WHERE ALL CHANGES.
15. NFPA 13D & LOCATION OF SPRINKLERS.
16. 8.6.1 SPRINKLERS SHALL BE INSTALLED IN ALL AREAS EXCEPT WHERE OMISSION IS PERMITTED BY 8.6.2 THROUGH 8.6.7.
17. 8.6.2 SPRINKLERS SHALL NOT BE REQUIRED IN BATHROOMS OF 55 FT² (5.1 M²) AND LESS.
18. 8.6.3 SPRINKLERS SHALL NOT BE REQUIRED IN CLOTHES CLOSETS, LINEN CLOSETS, AND PAINTERS LOCALITY. IN SUCH CIRCUMSTANCES, RESIDENTIAL ON QUICK-RESPONSE SPRINKLERS WITH A DWELLING MAY BE USED. IT IS RECOMMENDED THAT RESIDENTIAL SPRINKLERS HAVE NOT BEEN TESTED SPECIFICALLY FOR FIRES IN GARAGES, BUT FIELD EXPERIENCE HAS SHOWN THAT 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.
19. 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.
20. 8.6.4 SPRINKLERS SHALL NOT BE REQUIRED IN GARAGES, OPEN ATTACHED PORCHES, CARPORTS, AND AND SIMILAR STRUCTURES.
21. 8.6.4* SPRINKLERS SHALL NOT BE REQUIRED IN GARAGES, OPEN ATTACHED PORCHES, CARPORTS, AND SIMILAR STRUCTURES.
22. MATERIALS AS DEFINED IN NFPA 220, STANDARD ON TYPES OF BUILDING CONSTRUCTION.
23. (3) THE WALLS AND CEILING ARE SURFACED WITH NONCOMBUSTIBLE OR LIMITED-COMBUSTIBLE MATERIALS.
24. (2) THE LEAST DIMENSION DOES NOT EXCEED 3 FT (0.9 M).
25. (1) THE AREA OF THE SPACE DOES NOT EXCEED 24 FT² (2.2 M²).
26. THAT MEET ALL OF THE FOLLOWING CONDITIONS:
27. (1) THE AREA OF THE SPACE DOES NOT EXCEED 24 FT² (2.2 M²).
28. (2) THE LEAST DIMENSION DOES NOT EXCEED 3 FT (0.9 M).
29. (3) THE WALLS AND CEILING ARE SURFACED WITH NONCOMBUSTIBLE OR LIMITED-COMBUSTIBLE MATERIALS AS DEFINED IN NFPA 220, STANDARD ON TYPES OF BUILDING CONSTRUCTION.
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31. 8.6.7 SPRINKLERS SHALL NOT BE REQUIRED IN GARAGES, OPEN ATTACHED PORCHES, CARPORTS, AND AND SIMILAR STRUCTURES.
32. (5) SKYLIGHTS NOT EXCEEDING 32 FT² (2.97 M²) SHALL BE PERMITTED TO HAVE A PLASTIC COVER, LIMITED-COMBUSTIBLE MATERIAL.
33. (4) THE INTERIOR FINISH OF THE UNPROTECTED CEILING POCKET IS NONCOMBUSTIBLE OR UNPROTECTED CEILING POCKET BY A MINIMUM 10 FT (3.05 M) HORIZONTAL DISTANCE.
34. (3) EACH UNPROTECTED CEILING POCKET IS SEPARATED FROM ANY ADJACENT SPRINKLERS AT THE LOWER CEILING ELEVATION.
35. (2) THE ENTIRE FLOOR UNDER THE UNPROTECTED CEILING POCKET IS PROTECTED BY THE SPRINKLERS AT THE LOWER CEILING ELEVATION.
36. (1) THE TOTAL VOLUME OF UNPROTECTED CEILING POCKET DOES NOT EXCEED 100 FT³ (2.83 M³).
37. CONDUITS:
38. (1) THE TOTAL VOLUME OF UNPROTECTED CEILING POCKET DOES NOT EXCEED 100 FT³ (2.83 M³).
39. (2) THE ENTIRE FLOOR UNDER THE UNPROTECTED CEILING POCKET IS PROTECTED BY THE SPRINKLERS AT THE LOWER CEILING ELEVATION.
40. (3) EACH UNPROTECTED CEILING POCKET IS SEPARATED FROM ANY ADJACENT UNPROTECTED CEILING POCKET BY A MINIMUM 10 FT (3.05 M) HORIZONTAL DISTANCE.
41. (4) THE INTERIOR FINISH OF THE UNPROTECTED CEILING POCKET IS NONCOMBUSTIBLE OR LIMITED-COMBUSTIBLE MATERIAL.
42. (5) SKYLIGHTS NOT EXCEEDING 32 FT² (2.97 M²) SHALL BE PERMITTED TO HAVE A PLASTIC COVER.



Caution: Do not paint over the sprinklers cover plates. Paint may interfere with the heat sensitivity of the sprinkler, and disturbances may damage the sprinkler.

See General Notes 8.6.3 for Closet Requirements



Insulation Recommendations

In areas subject to freezing, care should be taken in unheated attic spaces to cover Uponor Aquasafe tubing completely with insulation. Insulation should follow the guidelines of the insulation manufacturer. See Uponor Document "Uponor Aquasafe Attic Insulation Guidelines" for attic installation guidelines (Provided in Contractors Documents package or online at www.uponorpro.com).

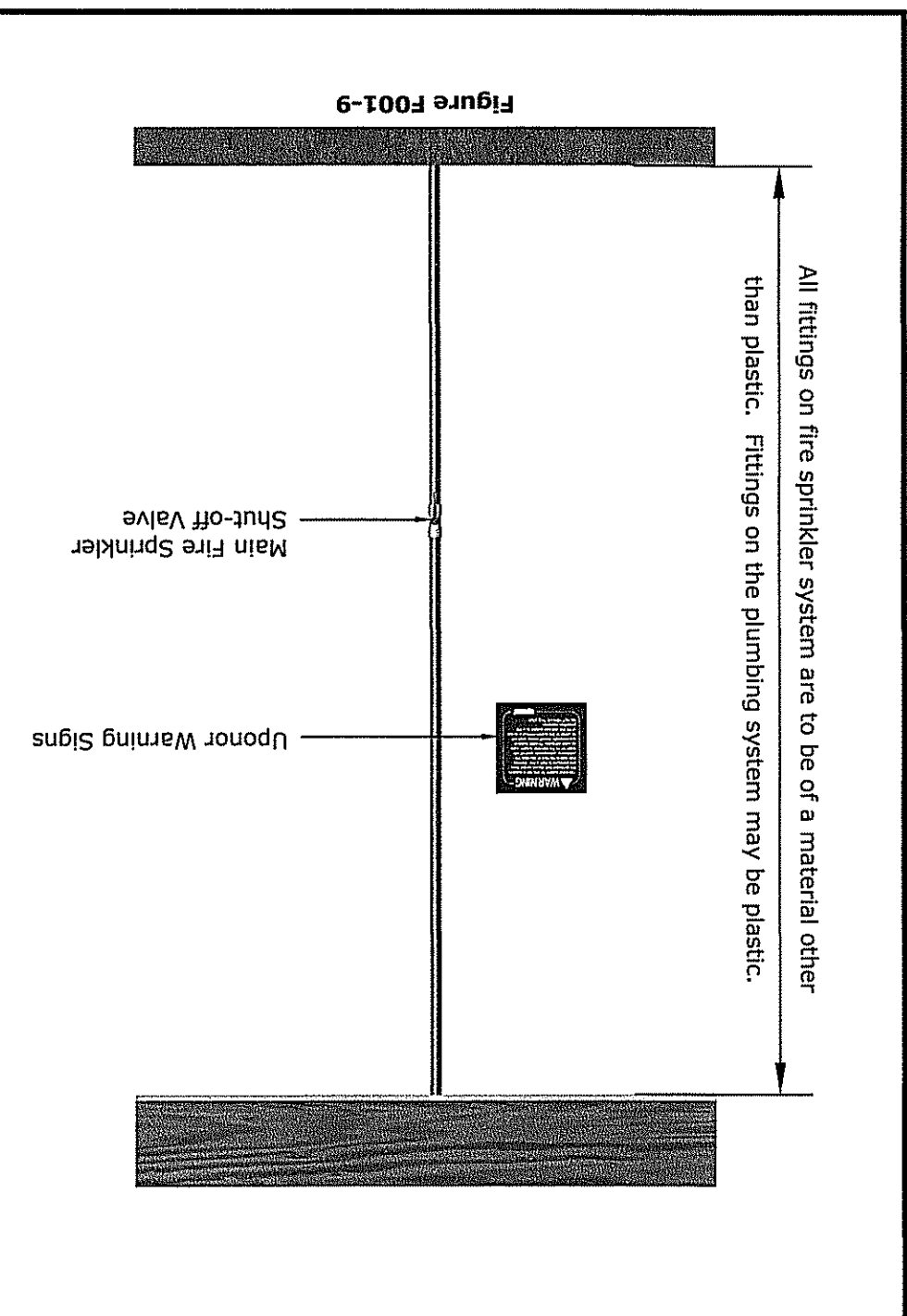
Extreme Temperature Installations
Aquasafe Residential Fire Safety systems are often installed in attics or other areas exposed to temperature extremes of heat and/or cold. Follow the recommended extreme weather installation instructions to isolate and protect system components from extreme temperatures. Because this system also delivers domestic cold water directly to plumbing fixtures, Uponor highly recommends that you protect the tubing with adequate insulation in warm weather areas to minimize heating of the cold water. Uninsulated Heat Ducts
Uninsulated Hot Water Pipes
Hot Air Pipes
Wall Oven
Kitchen Range
Wood Burning Stove
Front of Fireplace
Side of Fireplace

Installation methods include, but are not limited to:
• Tearing over the fire sprinkler piping.
• Additional layers of batt insulation.
• Increased depth of blown-in insulation.

Caution: If you will be installing spray foam insulation, make sure to protect all components during application. Consult with the spray foam manufacturer to ensure compatibility with all products before application. Consultation with local building officials is encouraged to ensure compliance with local building codes.

Fitting Size	Minimum Tubing Length
3/8" PropEX Fitting	2"
1/2" PropEX Fitting	2 1/2"
3/4" PropEX Fitting	3 1/2"
1" PropEX Fitting	4 1/2"
1 1/4" PropEX Fitting	5 1/2"

Standard Riser Assembly



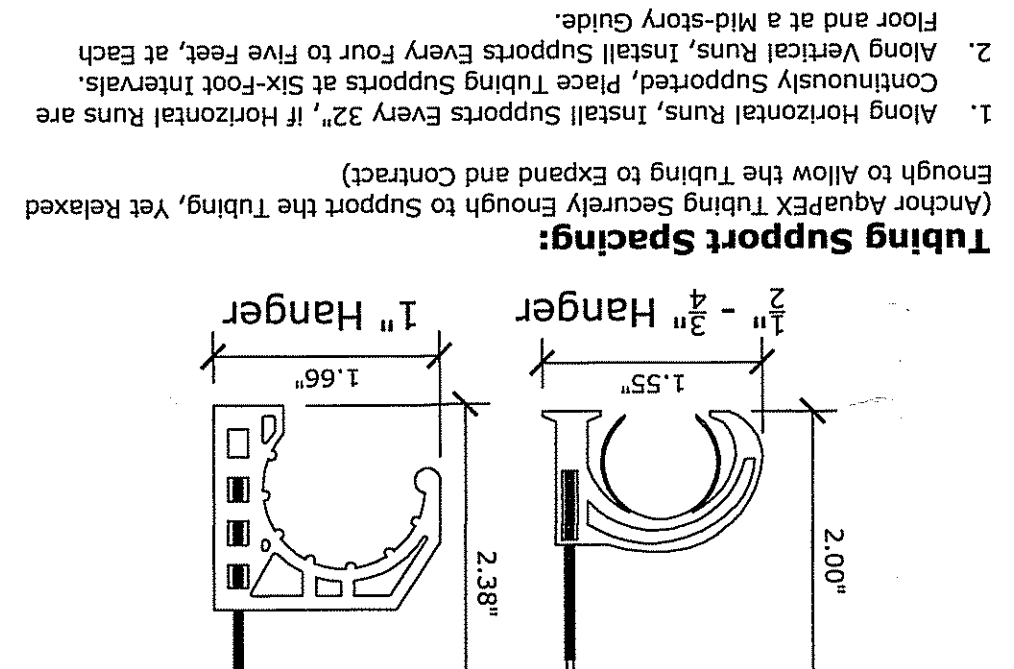
Slope Guide

Rise/Run	Pitch:	Slope:
0/12	0°	9/12
1/12	4.76°	10/12
2/12	9.46°	11/12
3/12	14.04°	12/12
4/12	18.43°	13/12
5/12	22.62°	14/12
6/12	26.57°	15/12
7/12	30.26°	16/12
8/12	33.69°	17/12
		18/12

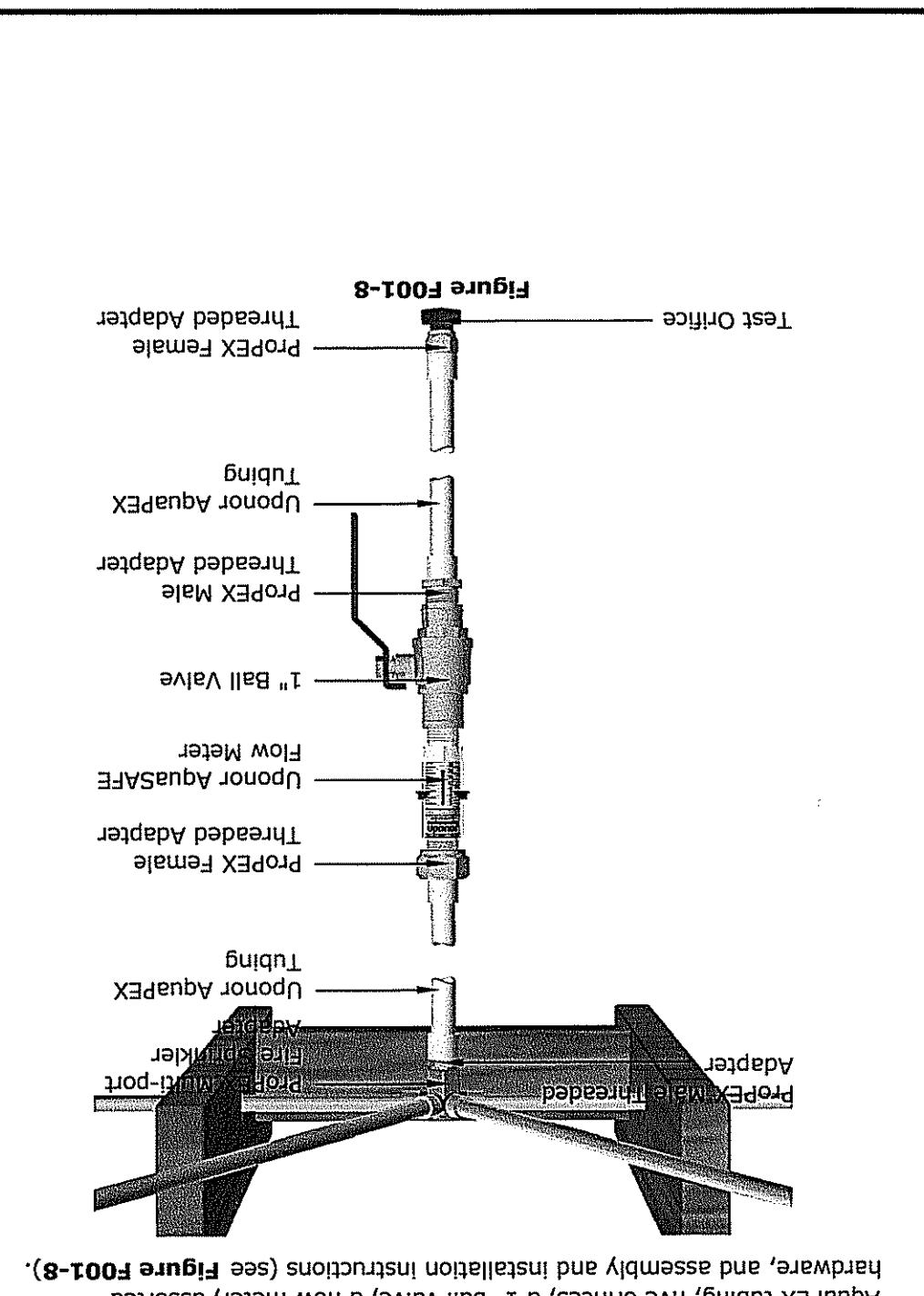
NFPA 13D Table 7.5.3 Distances From Heat Sources

Heat Source	Ordinary Temp. 135°-170°	Intermediate Temp. 175°-225°
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 Pipes	18"	9"
Uninsulated Heat Ducts	18"	9"
Uninsulated Hot Water Pipes	12"	12"
Side of Hot Air Diffuser	24"	18"
Front of Hot Air Diffuser	36"	18"
Hot Water Heater	6"	3"
Furnace	6"	3"
50W-250W Light Fixture	6"	3"
250W-499W Light Fixture	12"	6"

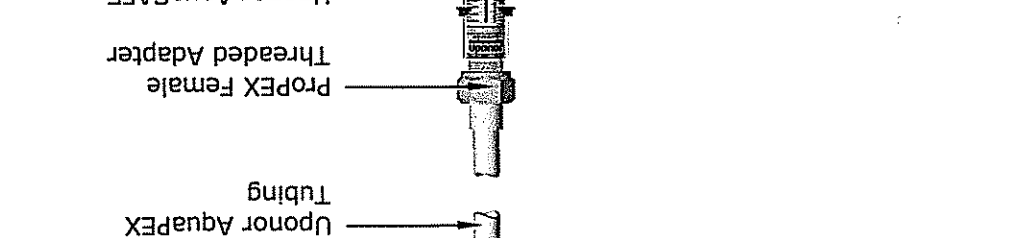
Bending PEX Tubing



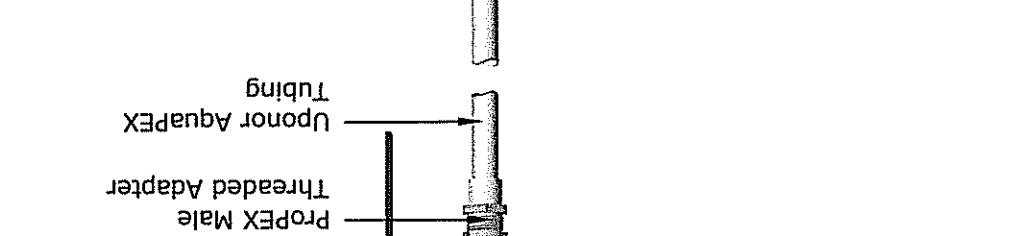
Tubing Support Spacing:



Standard Riser Assembly



In-line Flow Test Kit



GRABARZ RESIDENCE

25 HAVERTY'S WAY
PORTLAND, ME 04101

GENERAL NOTES AND DETAILS

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1. Along Horizontal Runs, Install Supports Every Four to Five Feet, at Each End and at a Mid-story Guide.
2. Along Vertical Runs, Install Supports at Six-foot Intervals.
(Anchor Aquasafe Tubing Securely Enough to Support the Tubing, Yet Relaxed Enough to Allow the Tubing to Expand and Contract)

FOOT 1
SHEET NUMBER

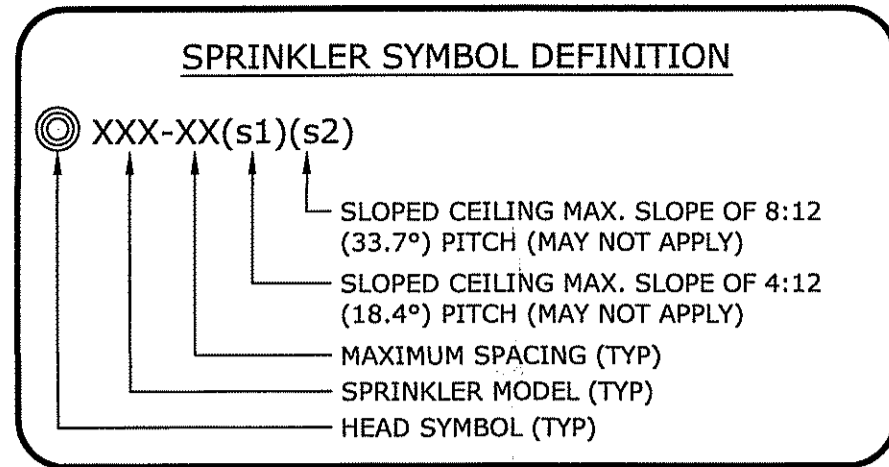
GENERAL NOTES AND DETAILS

REVISIONS

NO.	DATE	DESCRIPTION

CONTACT PH. NUMBER: 207-415-3375
CONTACT FAX NUMBER: 207-415-3375
CONTACT E-MAIL: info@uponor.com
PROJECT NUMBER: 121109-42L
SHEET SCALE: N.T.S.
PROJECT NUMBER: 121109-42L
COMPANY: RSD PLUMB & HTG
CONTACT: ROBERT DOOR
SQUARE FEET: 2814 SQ. FT.

Markup Legend	
Delete Line	
Add Line	
Add Tee	
Add Elbow	
Add Coupling	
Add Head	
Delete Head	
Move Head	



COLOR/LINETYPE LEGEND

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— = 1/2" PIPE SIZE
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 — = 1" PIPE SIZE
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 — = 2" PIPE SIZE

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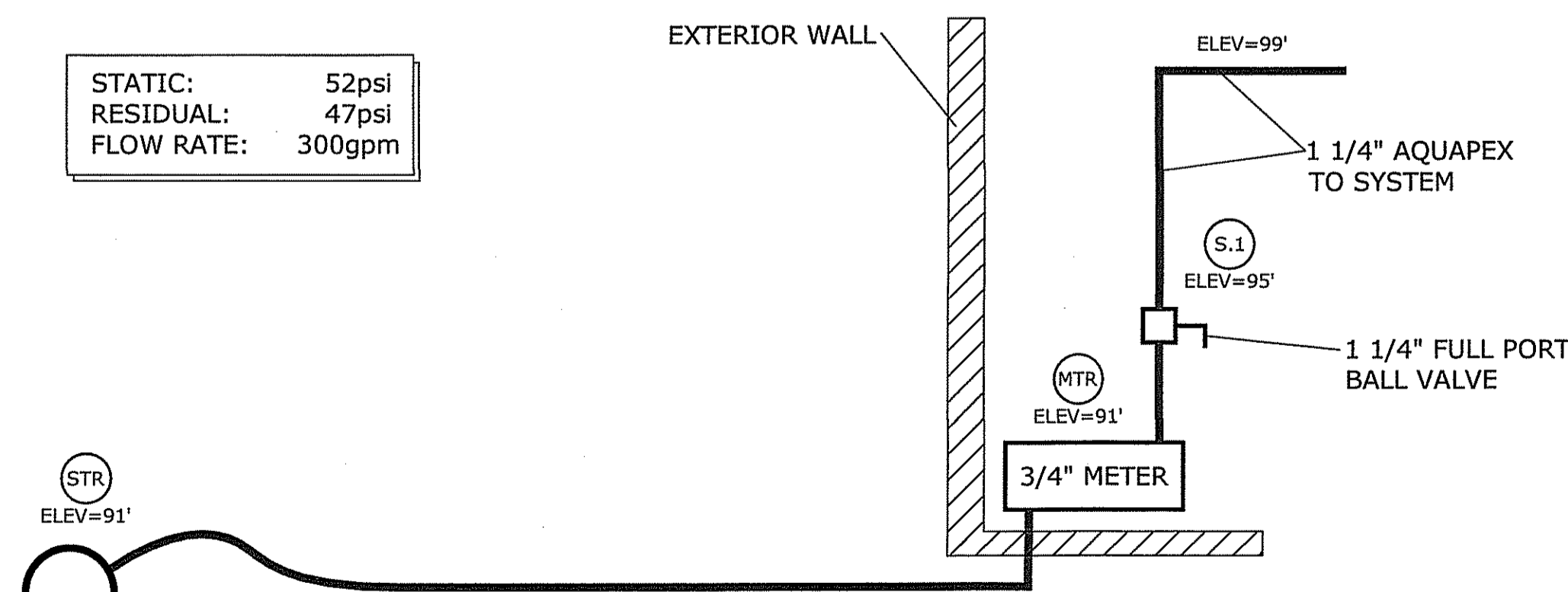
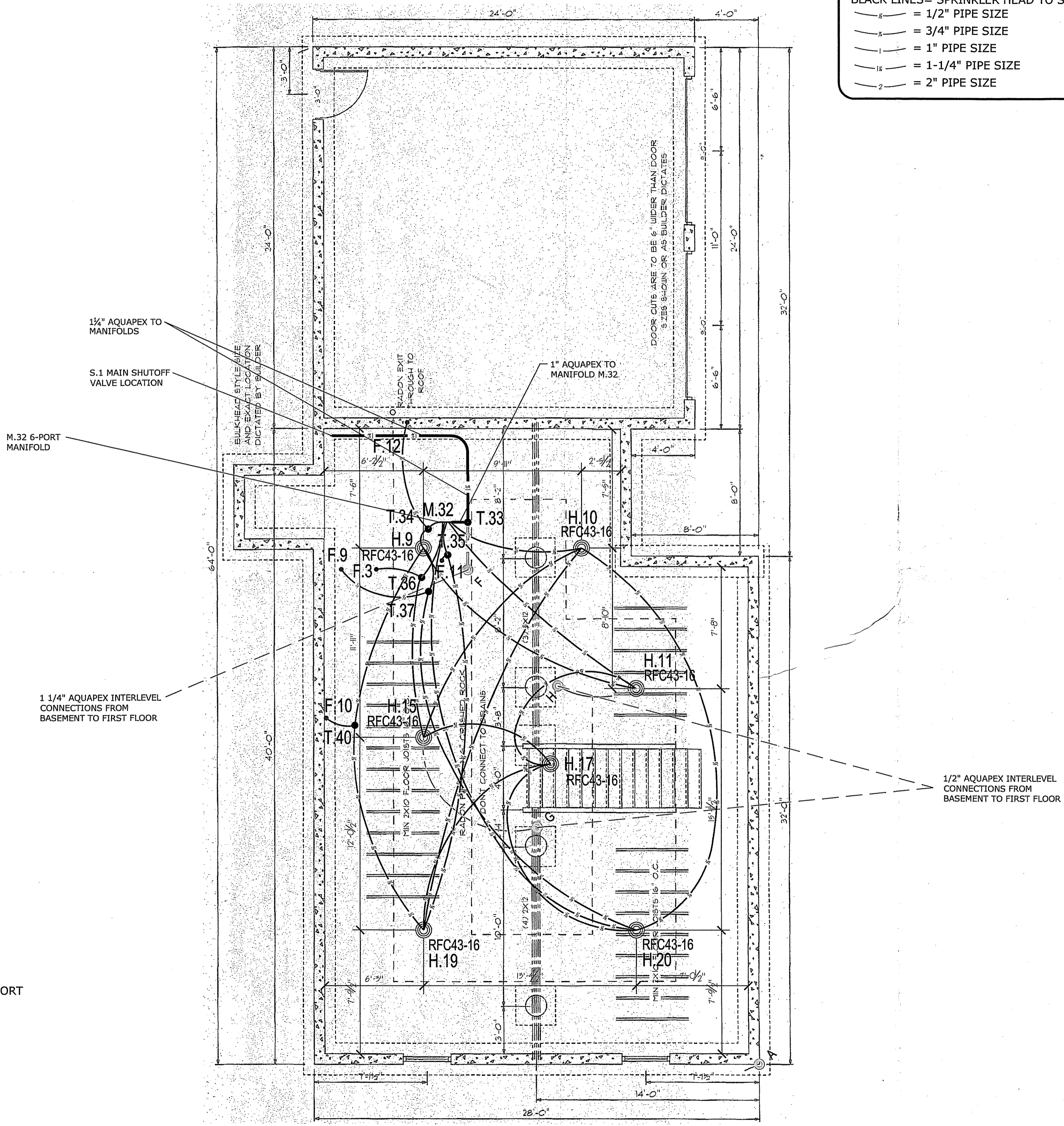
MOST HYDRAULICALLY REMOTE HEADS

HEAD #	GPM	PRESSURE REQ'D AT STREET
1 HEAD H.13	13	46.1
2 HEAD H.22 & H.24	26.0983	50.17

--- 24
 RELIABE-ASSEMBLIES Model RFC43 Concealed Pendent Sprinkler
 K=4.3, 165F°, 3/8" Orifice, Maximum Spacing 16'x16'
 Sprinkler head demand: 13 gpm @ 9.14

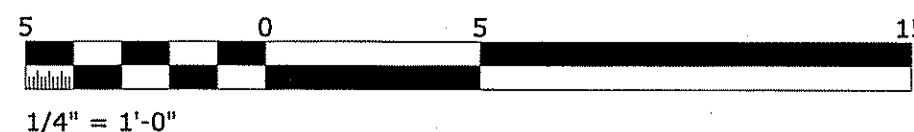
8 1st Floor
 9 2nd Floor
 7 Basement

24 TOTAL



2
 F100
WATER SERVICE DETAIL
 NTS

1
 F100
BASEMENT LEVEL
 1/4" = 1'-0"



GRABARZ RESIDENCE
 25 HAVERTYS WAY
 PORTLAND, ME 04101

NO.	DATE	REVISIONS	DESCRIPTION

SHEET DESCRIPTION
 BASEMENT LEVEL

SHEET NUMBER

F100

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UPONOR
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 EMAIL TECHNICAL.SERVICES@UPONOR.COM
 WEB WWW.UPONOR-USA.COM