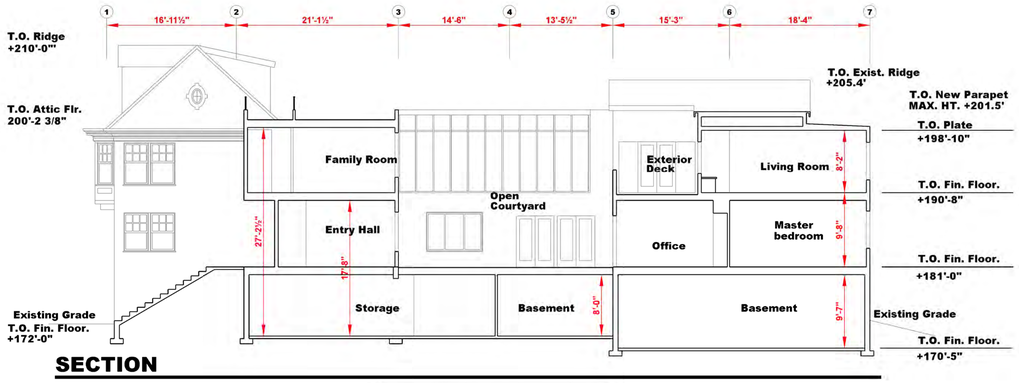
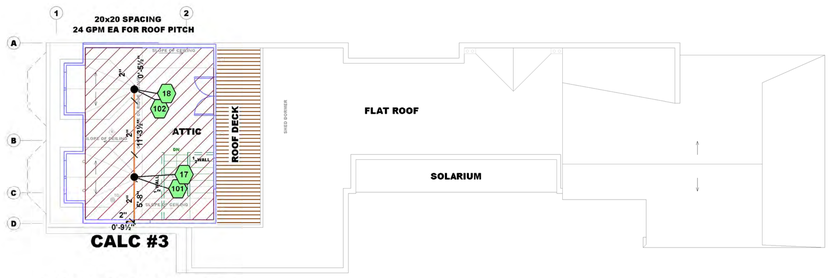


SECTION

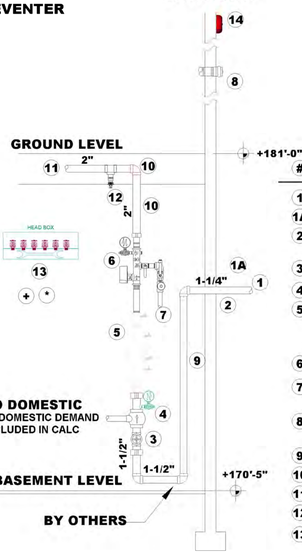
AS PER NFPA 13D, MINIMUM DISTANCE FOR SPRINKLERS ARE AS FOLLOWS:

* FRONT OF FIREPLACE	60"
* KITCHEN RANGE, WALL OVEN	18"
HOT AIR FLUES, UNIINSULATED HEAT DUCTS	
* UNINSULATED HOT WATER PIPES	12"
* SIDE OF CEILING OR WALL MOUNTED HOT AIR DIFFUSERS	24"
* FRONT OF WALL MOUNTED HOT AIR DIFFUSERS	36"
* HOT WATER HEATER OR FURNACE	6"
* LIGHT FIXTURE 0W-250W	6"
* LIGHT FIXTURE 250W-499W	12"



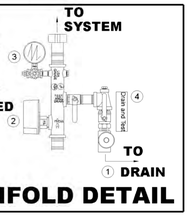
THIRD FLOOR PLAN
345 SF

NOTE:
POINT OF CONNECTION TO BE ON DISCHARGE SIDE OF BACKFLOW PREVENTER

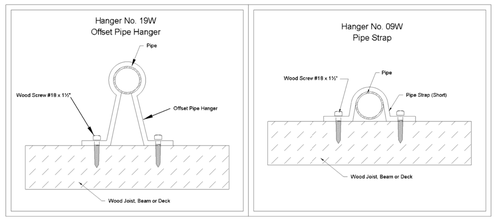


RISER DETAIL
NTS

TYCO 513D RISER MANIFOLD W/:
(1) DRAIN AND TEST
(2) FLOW SWITCH
(3) PRESSURE GAUGE
(4) SIGNS AS REQUIRED



RISER MANIFOLD DETAIL

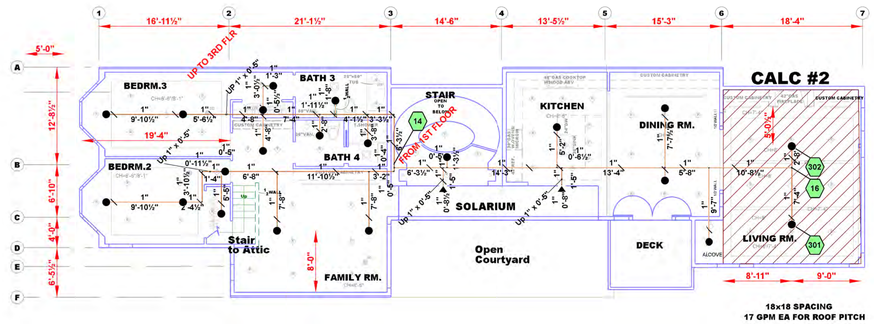


Supply Flow Test Data	
Test Conducted By	San Francisco Fire Dept. Bureau of Fire Prevention
Test Witnessed By	Micki Jones
Date of Test	2/2/2011
Location	Baker St. North End
Static Pressure	74.000
Residual Pressure:	54.000
Flow	1000.00
Outside Hose Flow	100.00

Hydraulic Information #1	
OCCUPANCY CLASSIFICATION	Residential
DENSITY	0.100gpm/ft² for 900.00ft² (Actual 415.48ft²)
TOTAL HOSE STREAMS	105.00
TOTAL HEADS FLOWING	3
K-FACTOR	4.9
TOTAL WATER REQUIRED	146.49
TOTAL PRESSURE REQUIRED	48.160
BASE of RISER (gpm)	146.49
BASE of RISER (psi)	48.160
SAFETY MARGIN (psi)	+25.267 (34.4%)

Hydraulic Information #2	
OCCUPANCY CLASSIFICATION	Residential
DENSITY	0.050gpm/ft² for 800.00ft² (Actual 403.08ft²)
TOTAL HOSE STREAMS	105.00
TOTAL HEADS FLOWING	2
K-FACTOR	4.9
TOTAL WATER REQUIRED	139.15
TOTAL PRESSURE REQUIRED	64.706
BASE of RISER (gpm)	139.15
BASE of RISER (psi)	64.706
SAFETY MARGIN (psi)	+8.773 (11.9%)

Hydraulic Information #3	
OCCUPANCY CLASSIFICATION	Residential
DENSITY	0.050gpm/ft² for 800.00ft² (Actual 374.89ft²)
TOTAL HOSE STREAMS	105.00
TOTAL HEADS FLOWING	2
K-FACTOR	4.9
TOTAL WATER REQUIRED	153.03
TOTAL PRESSURE REQUIRED	65.452
BASE of RISER (gpm)	153.03
BASE of RISER (psi)	65.452
SAFETY MARGIN (psi)	+7.928 (10.8%)



SECOND FLOOR PLAN
2200 SF

RISER KEYED NOTES

#	
1	1-1/4" DOMESTIC LINE PROVIDED AND INSTALLED BY OTHERS
1A	PIPING THROUGH BASEMENT WALL
2	SLEVE AT WALL W/ 2" CLEAR SPACE AROUND PIPE
3	DOMESTIC CONTROL VALVE
4	SUPPLY SIDE PSI GAUGE
5	1 1/2" AMES 2000B DBLE CHECK BACKFLOW PREVENTER WITH 1 1/2" CONTROL VALVES SUPERVISED OPEN- TO BE INSTALLED BY OTHERS.
6	1 1/2" TYCO RISER MANIFOLD 13D/13R- SEE DETAIL
7	1" TEST AND DRAIN LINE TO BE DRAINED OUTSIDE TO ORIFICE SIZED PER THE SMALLEST SPRINKLER
8	3" SINGLE SNOOT FDC - SHOWN HERE FOR REFERENCE ONLY - FIELD VERIFY ACTUAL LOCATION
9	1-1/2" CPVC PIPE
10	2" CPVC PIPE
11	CPVC PIPE TO SYSTEM
12	TYCO MODEL LFII RESIDENTIAL PENDENT 4.9K-
13	SPRINKLER HEAD CABINET W/ MIN 6 SPARE HEADS (AS REQUIRED BY LOCAL AHJ)
14	ELECTRIC BELL
+	SIGNS AS REQUIRED
*	ALL ELECTRICAL WIRING BY OTHERS

CURE TIMES WITH ONE STEP SOLVENT CEMENT
200 psi (MAXIMUM) TEST PRESSURE

PIPE SIZE inches	Ambient Temperature During Cure Period		
	60°F to 120°F	40°F to 59°F	0°F to 39°F
3/4"	45 min.	1.5 hr.	24 hr.
1"	45 min.	1.5 hr.	24 hr.
1¼"	1.5 hr.	16 hr.	120 hr.
1½"	1.5 hr.	16 hr.	120 hr.
2"	6 hr.	36 hr.	See Note 1
2½"	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.

GENERAL NOTES:

1) THE SPRINKLER SYSTEM DESIGNED AS SHOWN ON THESE DRAWINGS SHALL CONFORM TO NFPA 13D 2002, AND SAN FRANCISCO FD.

2) ALL NEW EQUIPMENT TO BE UL/FM LISTED

3) CPVC PIPE TO BE SDR 13.5, ASTM F-442

4) CPVC FITTINGS TO BE SCD. 40, ASTM F-437

5) THE RESIDENTIAL SPRINKLER SYSTEM IS SPACED FOR 18x18 SPACING, MAXIMUM 9 FT OFF ANY WALL.

6) PIPE HANGERS FOR CPVC TO BE DOUBLE FASTNER STRAP TYPE, AFCON FIG.514 MAXIMUM
SPACING 6FT. FASTNERS #10 X 1". ALL END HEADS SHALL BE HUNG 12" FROM HEAD.

7) CITY OF SAN FRANCISCO REQUIRES AN FDC FOR RESIDENTIAL SPRINKLER SYSTEMS ON HOMES OVER 3000 SQ.FT.

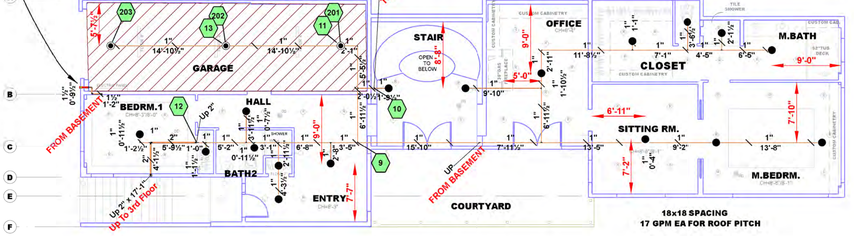
8) CPVC PIPE SYSTEMS WITH AN FDC REQUIRE HANGERS 4FT ON CENTER.

9) UNDERGROUND PIPE SHALL HAVE MINIMUM DEPTH OF COVER OF 2'-6".

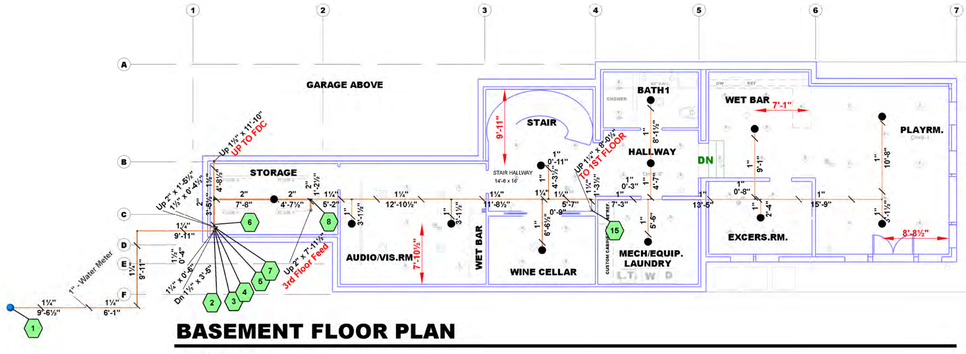
10) FOR MULTIPURPOSE PIPING SYSTEMS, A SIGN MUST BE PROVIDED AT THE MAIN SHUT OFF VALVE STATING:

"WARNING - THE WATER SYSTEM FOR THIS HOME SUPPLIES A FIRE SPRINKLER SYSTEM THAT DEPENDS ON CERTAIN FLOWS AND PRESSURES BEING AVALABLE TO FIGHT A FIRE. DEVICES THAT RESTRICT THE FLOW OR DECREASE THE PRESSURE SUCH AS WATER SOFTENERS, WATER TREATMENT AND FILTRATION EQUIPMENT SHALL NOT BE ADDED TO THIS SYSTEM WITHOUT A REVIEW OF THE FIRE SPRINKLER SYSTEM BY A FIRE PROTECTION SPECIALIST. DO NOT REMOVE THIS TAG".

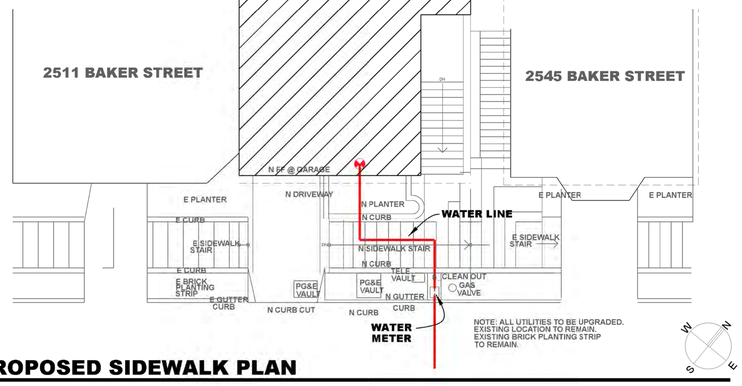
11) ADD 100 GPM HOSE STREAM ALLOWANCE TO THE HYDRAULIC CALCULATIONS AT THE POINT OF CONNECTION FOR LIGHT HAZARD OCCUPANCIES



FIRST FLOOR PLAN
2210 SF



BASEMENT FLOOR PLAN
2000 SF



PROPOSED SIDEWALK PLAN

NORTH
Graphic Scale 1/8"=1'-0"(U.N.O)

Standard Symbols
P.I.V. - Post Indicator Valve
N.R.S. - Key-Operated Valve
HYD - Public Hydrant
FDC - 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 ½" Outlet
- Pendent on ½" Outlet
- Upright on 1" Sprig
- Pendent below ceiling on 1" Drop
- Upright above Pendent on 1" Drop
- Sidewall on ½" Outlet
- Sidewall on 1" Sprig

GENERAL SYSTEM NOTES
1. HYDRAULIC INFORMATION TO BE PROVIDED ON SPRINKLER RISER.
2. EARTHQUAKE BRACING TO BE PROVIDED PER NFPA 13
3. ALL INSPECTORS' TEST CONNECTIONS AND LOW POINT DRAINS TO BE PROVIDED PER NFPA 13.
4. ALL HANGERS TO MEET CURRENT NFPA 13 REQUIREMENTS (U.N.O.).
5. LINE PIPING SHALL BE SCH. 01040 SPRINKLER PIPE WITH WELDED OUTLETS, ROLL GROOVED/THREADED ENDS WITH GROOVED/THREADED FITTINGS.
6. MAIN PIPING SHALL BE SCH. 010 THRWALL WITH WELDED OUTLETS, ROLL GROOVED ENDS, AND GROOVED FITTINGS.
7. SYSTEM DESIGN SHALL BE PER N.F.P.A. 013
8. OTHERS TO PROVIDE PAINTING, WIRING, FIRE EXTINGUISHERS, HYDRANTS, CITY CONNECTION, ROADWAY BOXES, & SYSTEM MONITORING, U.N.O.
9. HYDRAULIC REFERENCE POINT.
10. ALL SYSTEM COMPONENTS SHALL BE U.L. LISTED AND F.M. APPROVED.
11. SPARE HEAD CABINET TO INCLUDE: (2) ADD HEADS EA KIND, WRENCH & COPY OF NFPA 25

Contacts			
	Gyro-Thd	Pipe Ends/Run	Fittings
Armovers	Gyro-Thd	Threaded	Screwed CI
Sprigs	Gyro-Thd	Threaded	Screwed CI
Drops	Gyro-Thd	Threaded	Screwed CI
BL's	Gyro-Thd	Threaded	Screwed CI
Cross Mains	Gyro-Flow	Welds-Grv	Grv/Welded
Float Main	Gyro-Flow	Welds-Grv	Grv/Welded
Standpipes	Sch.10	Welds-Grv	Grv/Welded
Underground	PVC		PVC Fittings

Contacts
General Contractor
Architect

Revisions	Date

Sprinkler Legend

Symbol	Manufacturer	SIN/Model	Quantity	K-Factor	Type	Orifice	Finish	Temperature	Note
●	Central	TY2524	52	4.9	Pendent	½"	White	155°F	
◉	Central	TY2334	3	4.9	Pendent	½"	White	155°F	LFII SEMI REC 4.9K
◀	Central	TY2334	2	4.4	Sidewall	½"	White	155°F	
			Total = 57						

LICENSED FIRE PROTECTION CONTRACTOR
AQUAMATIC FIRE PROTECTION, INC.
CLASSIFICATION C-16
LICENSE No. 569521
STATE OF CALIFORNIA

Fruchtman / Hoang Residence
2533 Baker Street
San Francisco, Ca.

Scale: AS NOTED
Designed: Gerald Ebeling
Approved:
Contract No.: 1057
Date: 03/07/11
Drawing No.: FP1
PIPING PLAN