NOTES:
–ALL BASEMENT CEILINGS ACT@ 7'–0" U.N.O.
–ALL DIMENSIONS CENTERLINE TO CENTERLINE.

FIRE SPRINKLER PLAN BASEMENT

SCALE: 1/8"=1'
AREA PROTECTED: 1,311 SQ.FT.
FINISH FLOOR ELEVATION: 100'–0"
COLOR CODE: WHITE

Sprinkler Head Schedule						
Symbol	Count	Thread	K–Factor	Temp.	Description	Note
◉	8	1/2"	4.9	155'	TYCO LF II WHITE RECESSED PENDENT SIN# TY2234	on Drop
○	4	1/2"	5.6	200'	TYCO TY–FRB BRASS UPRIGHT SIN# TY313	on Line
12 = Total Number of Heads this floor						

NOTES:
–ALL FIRST FLOOR CEILINGS GWB@ 7'–9" U.N.O.
–ALL DIMENSIONS CENTERLINE TO CENTERLINE.

FIRE SPRINKLER PLAN FIRST FLOOR

SCALE: 1/8"=1'
AREA PROTECTED: 2,225 SQ.FT.
FINISH FLOOR ELEVATION: 108'–4"
COLOR CODE: BLUE

Sprinkler Head Schedule						
Symbol	Count	Thread	K–Factor	Temp.	Description	Note
◀	31	1/2"	4.4	155'	TYCO LF II WHITE HORIZONTAL SIDEWALL SIN# TY2334	on Line
31 = Total Number of Heads this floor						

HYDRAULIC–SYSTEM

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

LOCATION: FIRST FLOOR

NFPA # 13D

BASIS OF DESIGN:
1. GPM PER HEAD — 16
2. NUMBER OF HEADS CALCULATED — 2

SYSTEM DEMAND:
1. WATER FLOW RATE (GPM) — 32.23
2. RESIDUAL PRESSURE AT THE PUMP (PSI) — 36.6

(SAFETY = 16.83 PSI)

HYDRAULIC DATA NAMEPLATE

TO BE MOUNTED AT SYSTEM RISER

⬡ = HYDRAULIC REFERENCE POINT

DIMENSIONS AND MOTOR DATA

MODEL NO.	GT07	GT10	GT15	GT20	GT30	GT073	GT103	GT153	GT203	GT303
HP	¾	1	1½	2	3	¾	1	1½	2	3
LENGTH "L"	19 3/16	19 1/8	21 2/16	20 2/16	21 11/16	19	19 ¾	20 1/16	20 11/16	21 3/16
WIDTH	8¼									
HEIGHT	9¾									
WT. (lbs.)	48	52	60	65	76	49	52	55	69	71
PHASE	SINGLE				THREE					

MOTOR DATA

60 HERTZ SINGLE PHASE 115/230 VOLT		
PUMP MODEL NO.	HORSE–POWER	R.P.M.
GT20	¾ – 2	3500

TO CONVERT TOTAL HEAD–FEET INTO P.S.I.
(MULTIPLY .433 x TOTAL HEAD FEET)

GOULDS GT 20 PUMP CURVE

0 GPM = 54.99 PSI 30 GPM = 53.69PSI 70 GPM = 38.87 PSI
10 GPM = 54.56 PSI 40 GPM = 52.39 PSI 80 GPM = 32.04 PSI
20 GPM = 54.13 PSI 60 GPM = 45.03 PSI

APPLYING CEMENT, SETTING AND CURE TIMES

Prepare pipe by beveling outside end 10° to 15°, deburring end and wiping away excess filings. 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 joint. 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 all 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 area 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 thread tape is the recommended sealant for threaded connections to CPVC fire sprinkler products. When using Oatey Great White Thread Sealant, it should be applied to male threads only.

Firestop systems such as Hilti FS–One 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.

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.
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 40°F, however, the sprinkler system temperature must be raised to a temperature of 40°F or above and allowed to cure per the above recommendations prior to pressure testing.

HANGER # 17 HANGER # 18

HANGER DETAILS

SCALE: N.T.S.
HANGERS TO BE INSTALLED PER NFPA 13D
3/8" ROD 1"–4" PIPE

WHITE RECESSED PENDENT SYMBOL = ◉
BRASS UPRIGHT ON LINE SYMBOL = ○
WHITE HORIZONTAL SIDEWALL SYMBOL = ◀

HEAD DETAILS

SCALE: N.T.S.

TYCO LF II

LF II RESIDENTIAL HORIZONTAL SIDEWALL SPRINKLER DESIGN REQUIREMENTS

MODEL	COVERAGE AREA		MINIMUM DESIGN FLOW AND RESIDUAL PRESSURE			
	WIDTH x LENGTH FT. x FT.	MAXIMUM SPACING FT. (M)	TOP OF DEFLECTOR TO CEILING: 4 TO 6 INCHES		TOP OF DEFLECTOR TO CEILING: 6 TO 12 INCHES	
			155°F/68°C	175°F/79°C	155°F/68°C	175°F/79°C
LF II HORIZONTAL SIDEWALL	12 x 12	12'	13GPM(8.7psi)	13GPM(8.7psi)	13GPM(8.7psi)	13GPM(8.7psi)
	14 x 14	14'	14GPM(10.1psi)	14GPM(10.1psi)	14GPM(10.1psi)	14GPM(10.1psi)
	16 x 16	16'	16GPM(13.2psi)	16GPM(13.2psi)	17GPM(14.9psi)	17GPM(14.9psi)
	16 x 18	16'	19GPM(18.6psi)	19GPM(18.6psi)	20GPM(20.7psi)	20GPM(20.7psi)
	16 x 20	16'	23GPM(27.3psi)	23GPM(27.3psi)	23GPM(27.3psi)	23GPM(27.3psi)
	18 x 18	18'	23GPM(27.3psi)	23GPM(27.3psi)	23GPM(27.3psi)	23GPM(27.3psi)
	18 x 20	18'	26GPM(34.9psi)	26GPM(34.9psi)	26GPM(34.9psi)	26GPM(34.9psi)

FOR HORIZONTAL CEILING (MAXIMUM 8 INCH RISE FOR 12 INCH RUN)
K–FACTOR = 4.4 , ½" N.P.T.
MAXIMUM DISTANCE FROM SIDEWALL 8'–0"
MAXIMUM THROW 16'–0"
MINIMUM SPACING BETWEEN HEADS 8'–0"

PUMP/TANK/DETAIL

NOT TO SCALE

LEGEND FOR NFPA 13D SPRINKLER SYSTEM

1. GOULDS GT–20, 2 H.P., 30 GPM @ 53.69 PSI PUMP 230/1/60
2. (3) 300 GALLON PLASTIC WATER STORAGE TANK (35" x 81")(ACTUAL CAPACITY 330GAL/TANK)
3. 2" BALL VALVE (NORMALLY OPEN WITH LOCK)
4. 1¼" SWING CHECK VALVE
5. 30–50 PUMP CONTROL SWITCH (230 VOLTS)
6. 1¼' IPT POTTER VSR–SF FLOW SWITCH
7. BOILER DRAIN VALVE (AUX. DRAIN)
8. 300# PRESSURE GAUGE W/ ¼" 3–WAY GLOBE VALVE
9. 1" MAIN DRAIN & ALARM TEST VALVE
10. ELECTRIC BELL (SEE BSMT FLOOR PLAN)
11. 1¼" VENT CAP
12. ½" COPPER BALL VALVE FOR TANK FILL LINE (NORMALLY CLOSED) (BY OTHERS)
13. 2" GROOVED COUPLING
14. SPARE HEAD BOX
15. NFPA 13D PUMP CONTROL PANEL
16. NOT USED
17. 1½"x1¼" THREADED REDUCING COUPLING
18. 1¼" UNION
19. 2½" FIRE DEPT. CONNECTION (SEE BSMT PLAN)
20. ½" AUTOMATIC BALL DRIP (SEE BSMT PLAN)
21. ½" BRASS UPRIGHT

NOTE

A)–ALL ELECTRICAL WIRING, PAINTING, AND INSULATING TO BE DONE BY OTHERS

B)–SYSTEM TANK SIZE EQUALS GPM DEMAND (32.23) FOR TWO HEADS TIMES THIRTY MINUTES = 967 GALLONS

C)–TOTAL STORED WATER SUPPLY: 990 GALLONS

Thread the sprinkler into the adapter fitting only after the recommended cure time

Do not pre–assemble the drop assembly with the sprinkler head prior to cementing all joints

CPVC SPRINKLER HEAD INSTALLATION DETAIL

NOT TO SCALE

USE FPPI PIPE JOINT COMPOUND OR TEFLON TAPE ON ALL STEEL OR BRASS PIPE THREADS.

1/8"=1'–0"GRAPHIC SCALE

SUB PLAN
01 NOV 2013

GENERAL NOTES

SPRINKLER SYSTEM INSTALLATION TO COMPLY WITH NFPA PAMPHLET # 13D (2010 EDITION) EXCEPT AS AMENDED BY STATE FIRE MARSHAL

1.) A 30 MINUTE WATER SUPPLY SHALL BE PROVIDED

2.) ALL HABITABLE AREAS INCLUDING CLOSETS SHALL BE SPRINKLED

3.) A FIRE DEPARTMENT CONNECTION SHALL BE PROVIDED

OWNER TO PROVIDE SUFFICIENT HEAT THRU–OUT RESIDENCE TO PREVENT FREEZING OF WATER FILLED SPRINKLER PIPING AND EQUIPMENT.

EXPOSED PIPING SHALL BE BLACK SCH. 40 STEEL PIPE WITH DUCTILE IRON FITTINGS (C = 120).

CONCEALED CPVC PLASTIC PIPE SHALL BE JOINED WITH GLUED CPVC FITTINGS C=150

1. SPRINKLERS ARE NOT REQUIRED IN THE FOLLOWING AREAS AS PER NFPA 13D: AMENDED FOR BOARD & CARE FACILITIES
   A. OPEN ATTACHED PORCHES,GARAGES AND OUTSIDE STORAGE AREAS
   B. CRAWL SPACES AND ATTICS NOT USED FOR STORAGE OR ANY OTHER LIVING PURPOSES
   C. OPEN ATTACHED PORCHES, GARAGES AND SIMILAR STRUCTURES.
   D. COVERED UNHEATED PROJECTIONS AT ENTRANCES/EXITS IF NOT THE ONLY MEANS OF EGRESS

DATE	REVISIONS

REQUIRED APPROVALS
OWNER / ARCHITECT
STATE FIRE MARSHAL
PORTLAND FIRE DEPT.

DRAWN BY DLC
NICET LEVEL CERT.#
CHECKED BY WAF
NICET LEVEL III CERT.# 095574
CONTRACTOR LICENSE # 101
CONTRACTOR RMS # 368

56 ALLISON AVE.
56 ALLISON AVE
PORTLAND, ME

CONTRACT WITH: CREATIVE WORK SYSTEMS

EASTERN FIRE PROTECTION
AUBURN/LEWISTON INDUSTRIAL AIRPARK, AUBURN, MAINE 04210

FIRE SPRINKLER PLANS & DETAILS
DWG. NO. 1 OF 1
JOB NUMBER AU–5096–13
SCALE AS NOTED
DATE 11/01/13