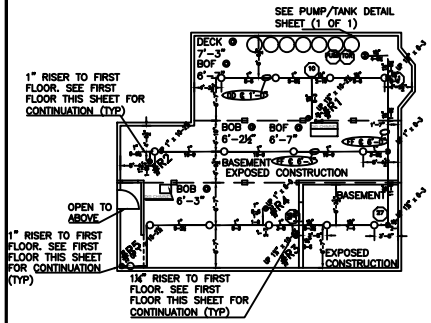
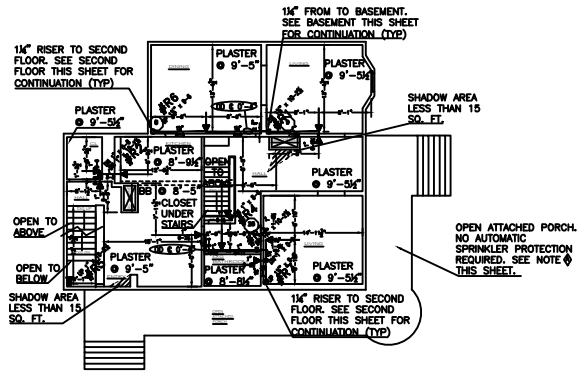


FIRE SPRINKLER PLAN – BASEMENT

SCALE: 1/8"=1'-0"
AREA PROTECTED: 1397 SQ.FT.
FINISH FLOOR ELEVATION : 100'-0"

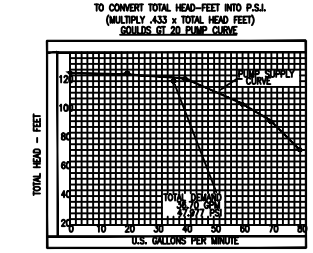
Sprinkler Head Schedule					
Symbol	Count	Thread	K-Factor	Description	Note
○	14	1/2"	5.6	RELIABLE F1FR56 BRASS UPRIGHT RA1425 1/2 OR 200°	ON LINE
14 = Total Number of Heads This Floor					



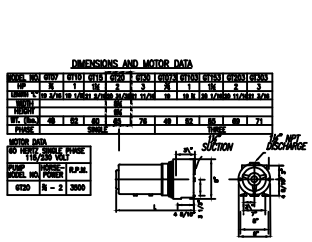
FIRE SPRINKLER PLAN – FIRST FLOOR

SCALE: 1/8"=1'-0"
AREA PROTECTED: 1530 SQ.FT.
FINISH FLOOR ELEVATION : 107.375'

Sprinkler Head Schedule					
Symbol	Count	Thread	K-Factor	Description	Note
◀	12	1/2"	4.4	RELIABLE F1RE344 HSW WHITE SIN# R3631 7/16 FR 155°	ON LINE
12 = Total Number of Heads This Floor					

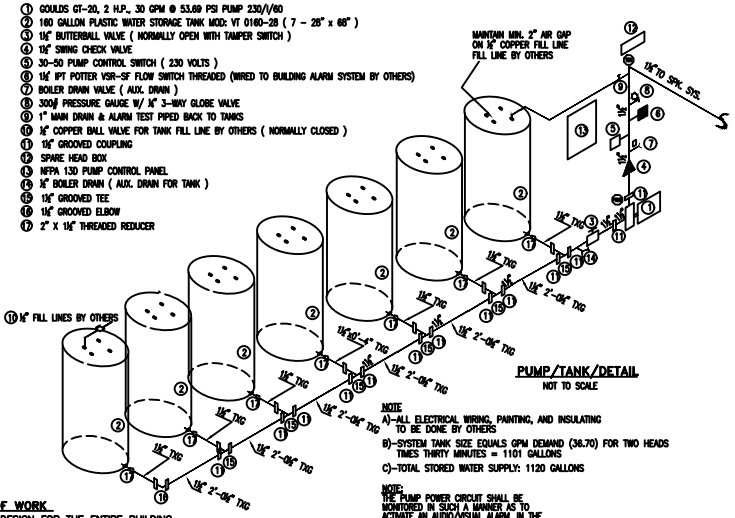


0 GPM = 54.99 PSI 30 GPM = 53.69PSI 70 GPM = 38.87 PSI
10 GPM = 54.56 PSI 40 GPM = 52.39 PSI 80 GPM = 32.04 PSI
20 GPM = 54.13 PSI 60 GPM = 45.03 PSI



LEGEND FOR NFPA 13D SPRINKLER SYSTEM

1. GOULDS GT-20, 2 H.P., 30 GPM @ 53.69 PSI PUMP 230/1/60
2. 160 GALLON PLASTIC WATER STORAGE TANK MOD: VT 0160-28 (7 – 28" x 68")
3. 1¼" BUTTERBALL VALVE (NORMALLY OPEN WITH TAMPER SWITCH)
4. 1¼" SWING CHECK VALVE
5. 30-50 PUMP CONTROL SWITCH (230 VOLTS)
6. 1¼" IPT POTTER VSR-SF FLOW SWITCH THREADED (WIRED TO BUILDING ALARM SYSTEM BY OTHERS)
7. BOILER DRAIN VALVE (AUX. DRAIN)
8. 300# PRESSURE GAUGE W/ ¼" 3-WAY GLOBE VALVE
9. 1" MAIN DRAIN & ALARM TEST PIPED BACK TO TANKS
10. ¾" COPPER BALL VALVE FOR TANK FILL LINE BY OTHERS (NORMALLY CLOSED)
11. 1¼" GROOVED COUPLING
12. SPARE HEAD BOX
13. NFPA 13D PUMP CONTROL PANEL
14. ¾" BOILER DRAIN (AUX. DRAIN FOR TANK)
15. 1¼" GROOVED TEE
16. 1¼" GROOVED ELBOW
17. 2" X 1¼" THREADED REDUCER



PUMP/TANK/DETAIL

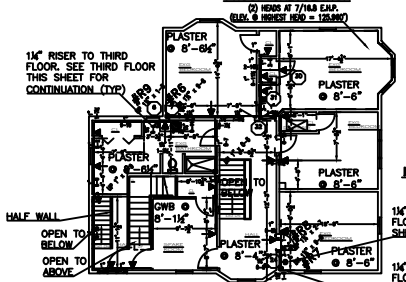
NOT TO SCALE

NOTE
A)-ALL ELECTRICAL WIRING, PAINTING, AND INSULATING TO BE DONE BY OTHERS
B)-SYSTEM TANK SIZE EQUALS GPM DEMAND (36.70) FOR TWO HEADS TIMES THIRTY MINUTES = 1101 GALLONS
C)-TOTAL STORED WATER SUPPLY: 1120 GALLONS

NOTE:
THE PUMP POWER CIRCUIT SHALL BE MONITORED IN SUCH A MANNER AS TO ACTIVATE AN AUDIO/VISUAL ALARM, IN THE EVENT OF INTERUPTION OF THE PUMP POWER CIRCUIT WHICH WILL BE PROMPTLY NOTICED.

(SECOND FLOOR) PROOF CALCULATION

(2) HEADS AT 7/16Ø E.A.P.
(ELEV. Ø HIGHEST HEAD = 125.958')



FIRE SPRINKLER PLAN – SECOND FLOOR

SCALE: 1/8"=1'-0"
AREA PROTECTED: 1509 SQ.FT.
FINISH FLOOR ELEVATION : 117.790'

Sprinkler Head Schedule					
Symbol	Count	Thread	K-Factor	Description	Note
◀	17	1/2"	4.4	RELIABLE F1RE344 HSW WHITE SIN# R3631 7/16 FR 155°	ON LINE
17 = Total Number of Heads This Floor					

HYDRAULIC-SYSTEM

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

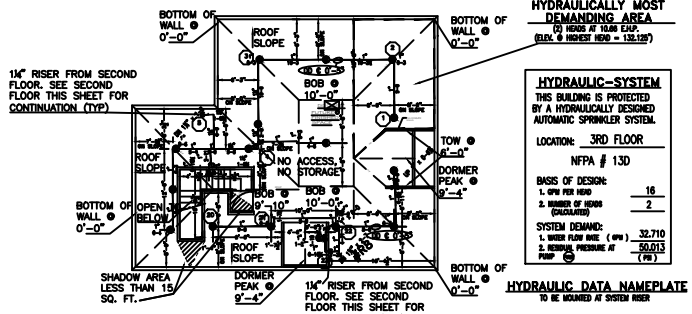
LOCATION: 2ND FL BR

NFPA # 13D

BASIS OF DESIGN:	
1. GPM PER HEAD	18
2. NUMBER OF HEADS (CALCULATED)	2
SYSTEM DEMAND:	
1. WATER FLOW RATE (GPM)	36.70
2. RESIDUAL PRESSURE AT PUMP Ⓟ	47.807 (PSI)

HYDRAULIC DATA NAMEPLATE

TO BE MOUNTED AT SYSTEM RISER



HYDRAULIC-SYSTEM

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

LOCATION: 3RD FLOOR

NFPA # 13D

BASIS OF DESIGN:	
1. GPM PER HEAD	16
2. NUMBER OF HEADS (CALCULATED)	2
SYSTEM DEMAND:	
1. WATER FLOW RATE (GPM)	32.710
2. RESIDUAL PRESSURE AT PUMP Ⓟ	50.013 (PSI)

HYDRAULIC DATA NAMEPLATE

TO BE MOUNTED AT SYSTEM RISER

FIRE SPRINKLER PLAN – THIRD FLOOR

SCALE: 1/8"=1'-0"
AREA PROTECTED: 1565 SQ.FT.
FINISH FLOOR ELEVATION 127.125'

NOTE: INSTALLATION OF THIRD FLOOR PIPING TO BE AT A LATER DATE WHEN FINISHES ARE COMPLETE. DESIGN ONLY AT THIS TIME. NO ACCESS TO SPACE UNTIL FINISHED

Sprinkler Head Schedule					
Symbol	Count	Thread	K-Factor	Description	Note
◎	16	1/2"	4.9	VIKING FREEDOM RESIDENTIAL BRASS UPRIGHT SIN#K4670 175°	ON LINE
◀	1	1/2"	4.4	RELIABLE F1RE344 HSW WHITE SIN# R3631 7/16 FR 155°	ON LINE
17 = Total Number of Heads This Floor					

SCOPE OF WORK

1) COMPLETE DESIGN FOR THE ENTIRE BUILDING INCLUDING ALL FLOORS PER NFPA # 13D (2016 EDITION) AMENDED FOR NFPA # 101 (2009 EDITION) SECTION 32.2.3.5
2) INSTALL NEW WET AUTOMATIC SPRINKLER SYSTEM PIPING THROUGHOUT THE EXISTING BASEMENT, FIRST, AND SECOND FLOORS IN ACCORDANCE WITH NFPA # 13D (2016 EDITION), NFPA 101 (2009 EDITION) AND THE STATE FIRE MARSHAL.
3) INSTALLATION OF THE THIRD FLOOR PIPING TO BE DONE AT A LATER DATE WHEN FINISHES ARE COMPLETE.

GENERAL NOTES

SPRINKLER SYSTEM INSTALLATION TO COMPLY WITH NFPA PAMPHLET # 13D (2016) & NFPA 101 (2009).

ALL WIRING TO BE DONE BY OTHERS

ALL PAINTING TO BE DONE BY OTHERS

ALL DIMENSIONS ARE SHOWN FOR GENERAL LOCATION OF SPRINKLER HEADS ; PIPING MAY VARY TO SUIT ACTUAL FIELD CONDITIONS.

OCCUPANCY DESCRIPTION AND CLASSIFICATION: COMMON AREAS, LIVING SPACES AND BEDROOMS, LIGHT/RESIDENTIAL

STORAGE OF MATERIAL SHALL NOT EXCEED 5'-0" IN HEIGHT.

⬡ = INDICATES HYDRAULIC REFERENCE POINTS.

INDICATES FINISH FLOOR UP TO CENTERLINE OF PIPE.

INDICATES DECK DOWN TO CENTERLINE OF PIPE.

A.S. = AUTOMATIC SPRINKLER
BOD = BOTTOM OF DECK
BOJ = BOTTOM OF JOIST
BOB = BOTTOM OF BEAM

INDICATES SHADOW AREA NOT REQUIRING A.S. PROTECTION PER NFPA 13(D) 2016 SECTION 8.2.5.8.

RELIABLE F1 RES 44

RES 44SRC RESIDENTIAL HORIZONTAL SIDEWALL SPRINKLER DESIGN REQUIREMENTS

MODEL	COVERAGE AREA: MAX. SPACE BETWEEN SPRINKLERS	COVERAGE AREA: MAX. SPACING FROM WALL	MINIMUM DESIGN FLOW AND RESIDUAL PRESSURE: MINIMUM FLOW & PRESSURE FOR HORIZONTAL CEILING (DEFLECTOR TO CEILING 3"-6")	MINIMUM FLOW & PRESSURE FOR HORIZONTAL CEILING (DEFLECTOR TO CEILING 6"-12")
			155°F/68°C	155°F/68°C
F1 RES 44 HORIZONTAL SIDEWALL	12 x 12	12'	130PSI(7.5psi)	140PSI(10.2psi)
	14 x 14	14'	140PSI(10.2psi)	145PSI(11.2psi)
	16 x 16	16'	155PSI(13.3psi)	170PSI(15.6psi)
	16 x 18	16'	185PSI(16.8psi)	200PSI(20.7psi)
	18 x 18	18'	190PSI(18.7psi)	N/A
	16 x 20	16'	330PSI(27.4psi)	330PSI(27.4psi)

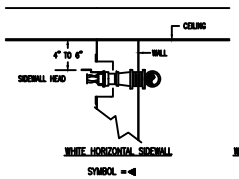
FOR HORIZONTAL CEILING
K-FACTOR = 4.4 , ½" NPT. SIN#R3631
MAXIMUM HEAD SPACING 8'-0" FROM OPPOSITE WALL 16'-0" BETWEEN HEADS
MINIMUM SPACING 8'-0" BETWEEN HEADS

VIKING FREEDOM RESIDENTIAL

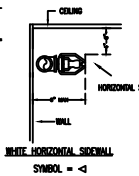
FREEDOM RESIDENTIAL BRASS UPRIGHT SPRINKLER DESIGN REQUIREMENTS

MODEL	COVERAGE AREA: MAX. SPACE BETWEEN SPRINKLERS	COVERAGE AREA: MAX. SPACING FROM WALL	MINIMUM DESIGN FLOW PRESSURE: MINIMUM FLOW & PRESSURE FOR HORIZONTAL CEILING (DEFLECTOR TO CEILING 3"-6")	MINIMUM FLOW & PRESSURE FOR HORIZONTAL CEILING (DEFLECTOR TO CEILING 6"-12")
			155°F/68°C OR 175°F/79°C	155°F/68°C OR 175°F/79°C
FREEDOM BRASS UPRIGHT	12 x 12	9'(OR LESS)	140PSI(9.7psi)	150PSI(10.3psi)
	14 x 14	7'	140PSI(9.7psi)	150PSI(10.3psi)
	16 x 16	8'	160PSI(10.8psi)	180PSI(12.4psi)

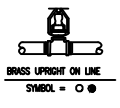
K-FACTOR = 4.9 , ½" N.P.T.
MINIMUM SPACING 6'-0"



WHITE HORIZONTAL SIDEWALL
SYMBOL = ◀



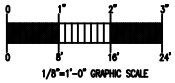
WHITE HORIZONTAL SIDEWALL
SYMBOL = ◁



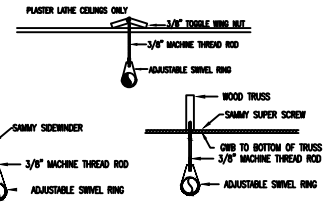
BRASS UPRIGHT ON LINE
SYMBOL = ○●

SPRINKLER HEAD DETAILS

NOT TO SCALE

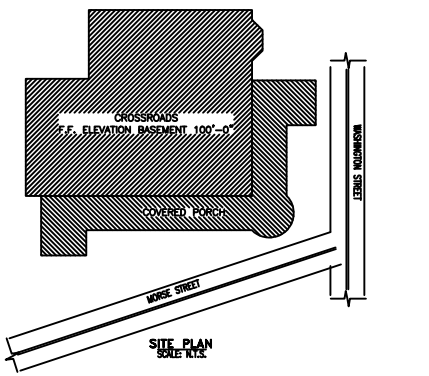


1/8"=1'-0" GRAPHIC SCALE



HANGER DETAILS

NOT TO SCALE
ALL HANGERS TO BE PROVIDED AND INSTALLED AS PER NFPA # 13D
3/8" ROD FOR 1" TO 4" PIPE



SITE PLAN

SCALE: N.T.S.

GENERAL NFPA #13D NOTES

SPRINKLER SYSTEM DESIGN TO COMPLY WITH NFPA PAMPHLET # 13D, 2016 ED. AMENDED PER NFPA #101, 2009 ED. SECTION 32.2.3.5.

A 30 MINUTE WATER SUPPLY SHALL BE PROVIDED

1. ALL HABITABLE AREAS AND CLOSETS SHALL BE SPRINKLED.

EXPOSED MAIN & BRANCH LINE PIPING (1"-1½") TO BE BLACK SCHEDULE # 40 JOINED BY THREADED DUCTILE IRON FITTINGS

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

SPRINKLERS ARE NOT REQUIRED IN THE FOLLOWING AREAS AS PER NFPA 13D (2016):

◆GARAGES, OPEN ATTACHED PORCHES, CARPORTS, AND SIMILAR STRUCTURES.

◆ATTICS WITH OR WITHOUT STORAGE, PENTHOUSE RM., ELEVATOR MACHINE RM., CRAWL SPACES & CONCEALED SPACES NOT INTENDED FOR LIVING PURPOSES

DATE	REVISIONS
12/12/16	SUBMITTAL PLAN JML

REQUIRED APPROVALS	
OWNER / ARCHITECT	
STATE FIRE MARSHAL	
PORTLAND FIRE DEPT	
DRAWN BY	JML
NICET LEVEL	CERT.#
CHECKED BY	JMD
NICET LEVEL II	CERT.# 116803
CONTRACTOR LICENSE #	101
CONTRACTOR RMS #	639

CROSSROADS
735 WASHINGTON STREET, PORTLAND MAINE

CONTRACT WITH: OWNER

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

FIRE SPRINKLER PLANS & DETAILS	
DWG. NO.	1 OF 1
JOB NUMBER	AU-5564-16
SCALE	AS NOTED
DATE	11/12/16