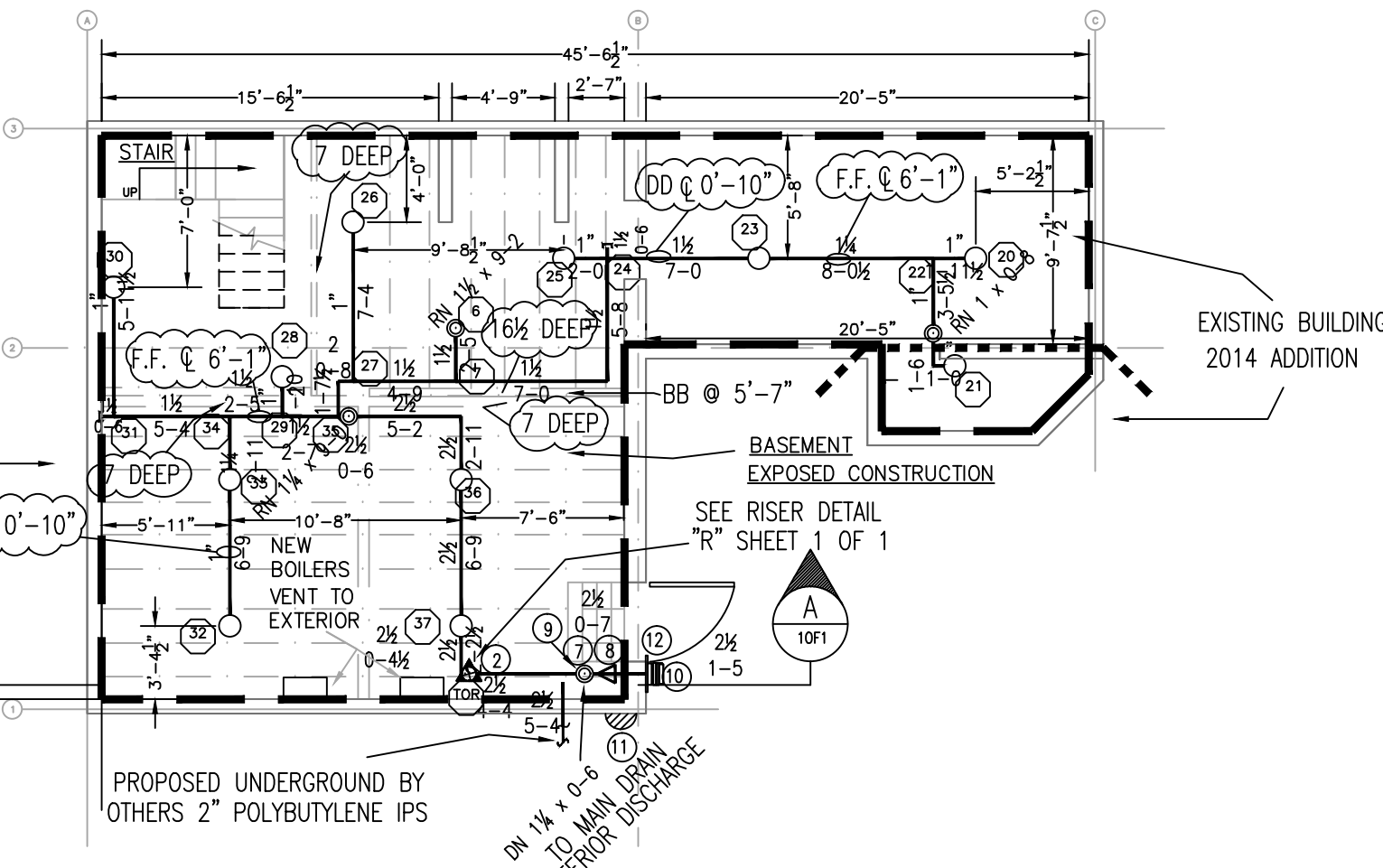


**(BASEMENT) HYDRAULICALLY MOST REMOTE AREA**  
 (.15 GPM/SQ.FT. / 865 SQ.FT.)  
 (ELEVATION @ HIGHEST HEAD = 106'-1")

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

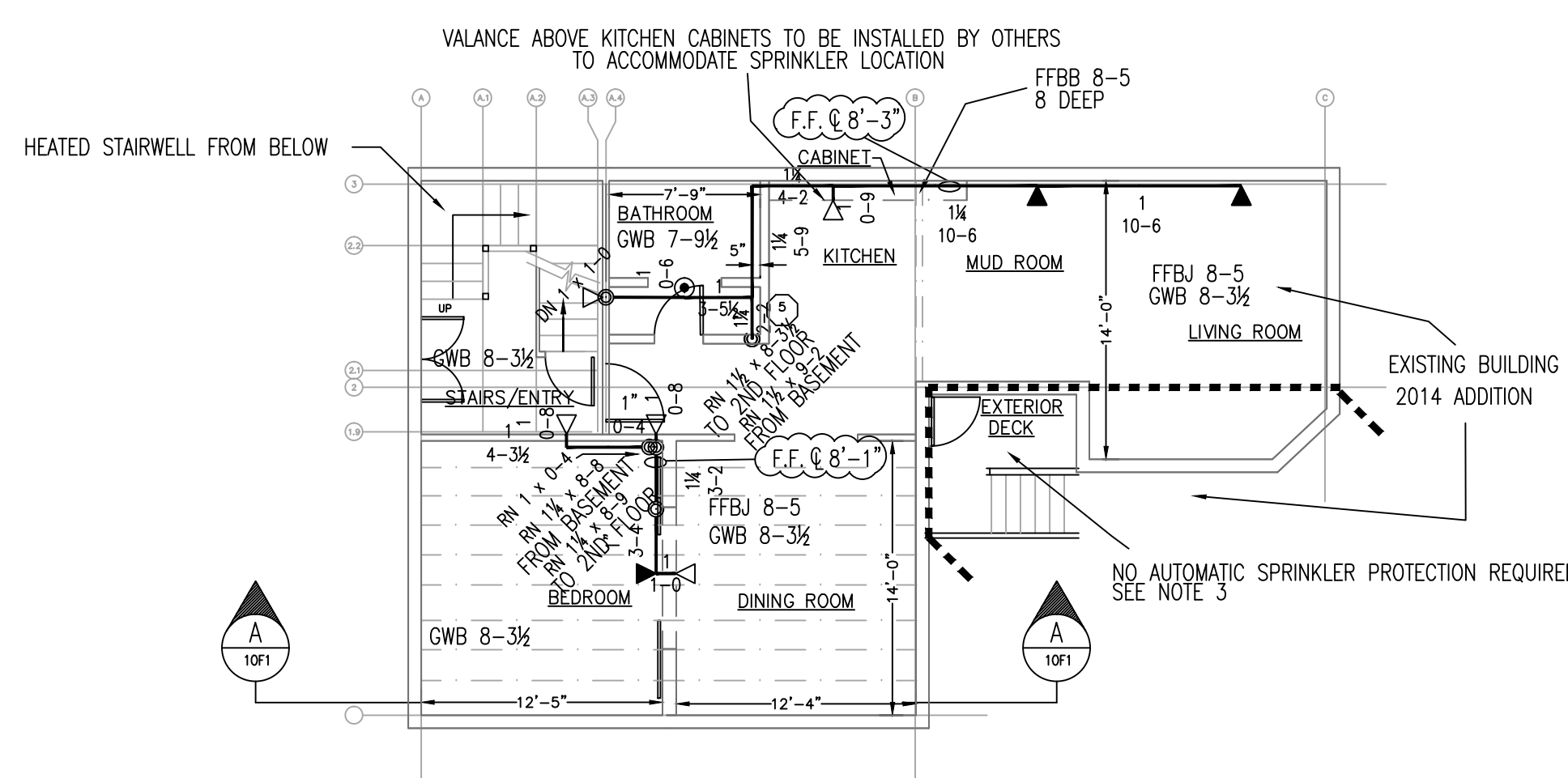
LOCATION: BASEMENT  
 No. OF SPRINKLERS: 11 (CALCULATED)  
 BASIS OF DESIGN:  
 1. DENSITY (GPM/SQ.FT.) .15  
 2. DESIGNED AREA OF DISCHARGE (SQ.FT.) 865  
 SYSTEM DEMAND:  
 1. WATER FLOW RATE (GPM) 207.26  
 2. RESIDUAL PRESSURE AT THE BASE OF THE RISER (PSI) 29.11



**FIRE SPRINKLER PLAN - BASEMENT**

SCALE: 1/8"=1'-0"  
 AREA PROTECTED: 873 SQ.FT.  
 FINISH FLOOR ELEVATION: 100'-0"

Symbol	Count	Thread	K-Factor	Description	Note
○	11	1/2"	5.6	TYCO TYRFB TY313 BRASS UPRIGHT 200"	on Line
11 = Total Number of Heads this floor					

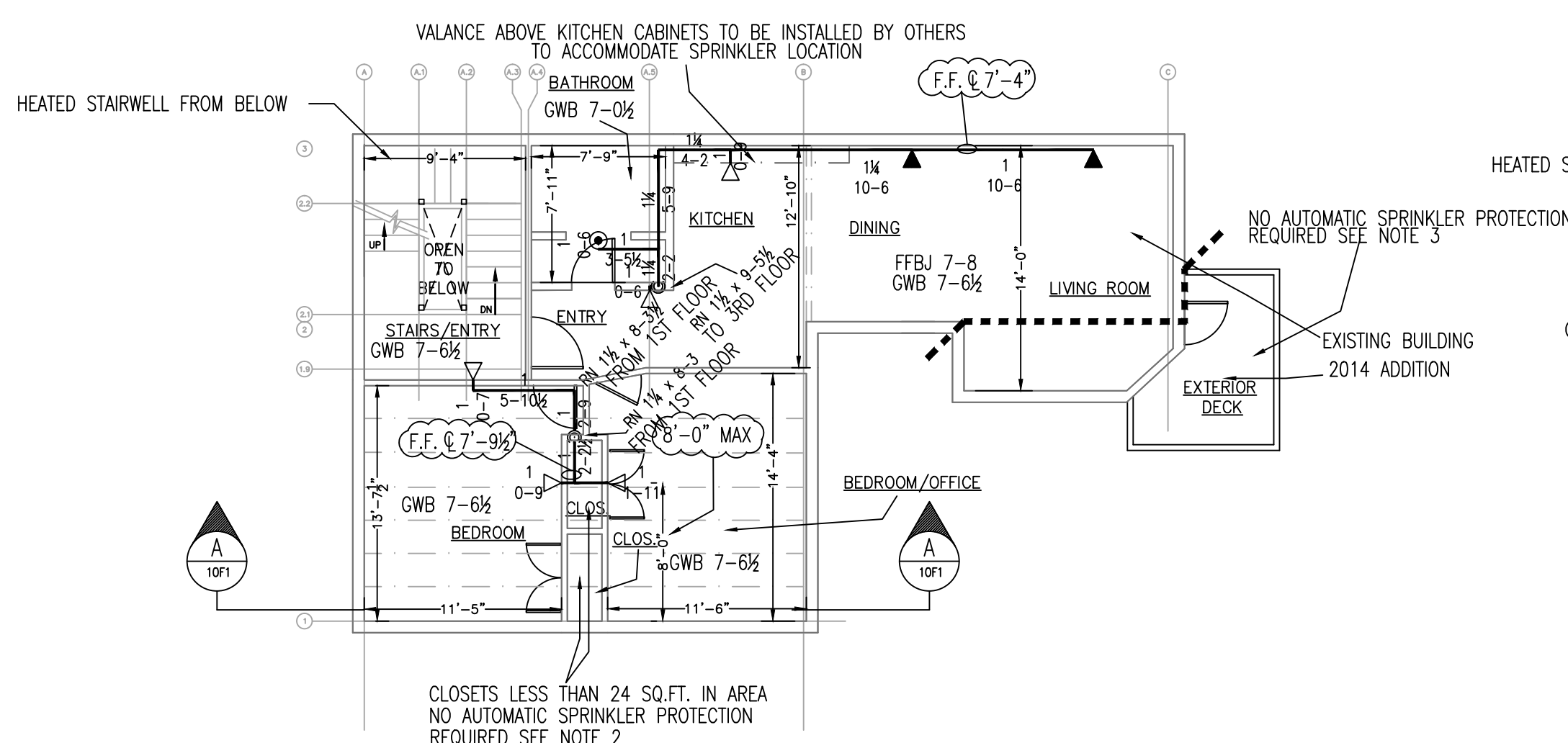


**FIRE SPRINKLER PLAN - FIRST-FLOOR**

SCALE: 1/8"=1'-0"  
 AREA PROTECTED: 964 SQ.FT.  
 FINISH FLOOR ELEVATION: 107'-0"

Symbol	Count	Thread	K-Factor	Description	Note
○	1	1/2"	4.9	TYCO LFI TY2234 WHITE 155" RECESSED PENDENT	on Drop
◀	3	1/2"	4.4	TYCO LFI TY2334 155" WHITE HORIZONTAL SIDEWALL	on Line
◁	5	1/2"	4.4	TYCO LFI TY2334 155" WHITE RECESSED HORIZONTAL SIDEWALL	on Drop
9 = Total Number of Heads this floor					

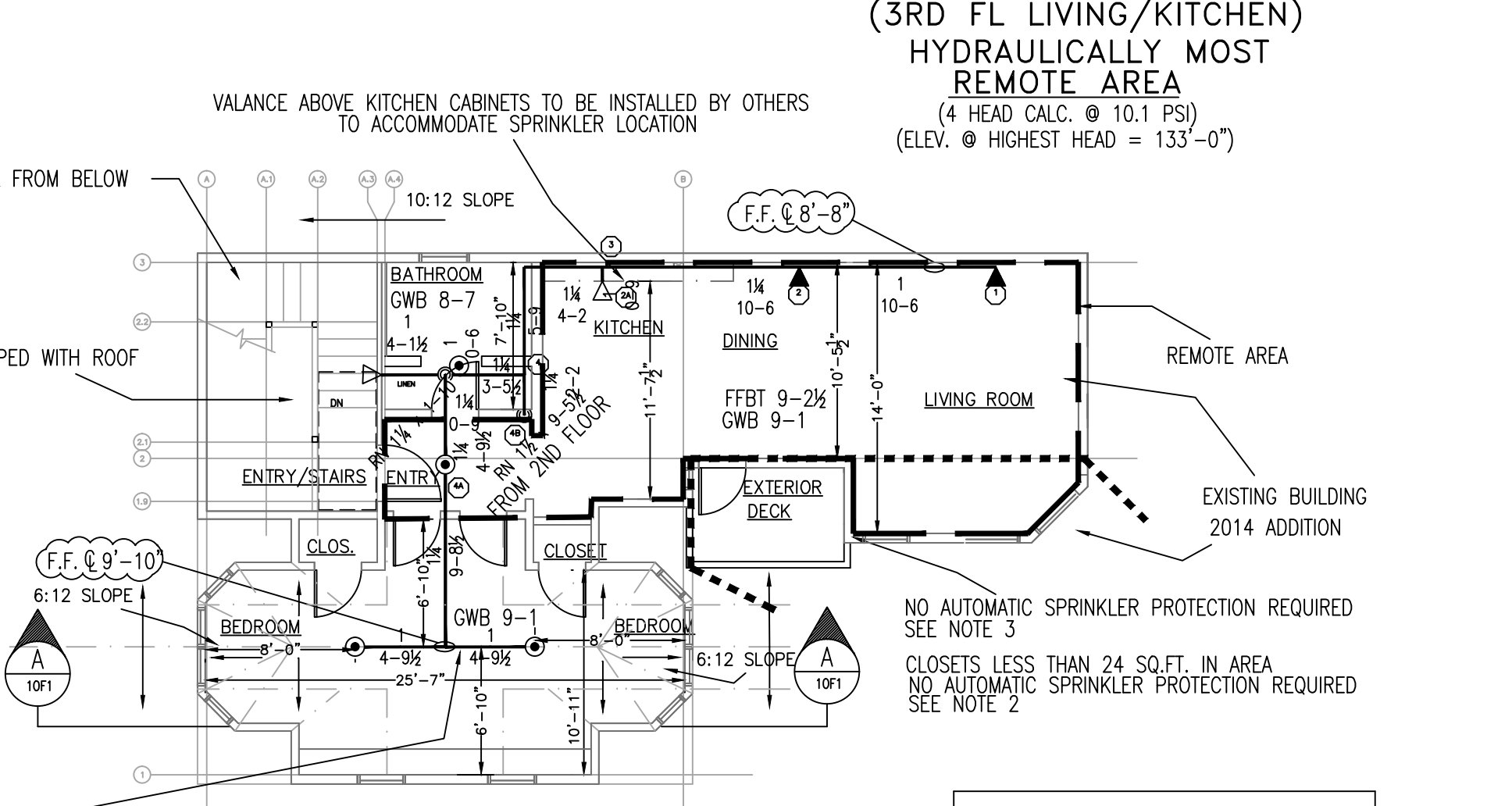
**HYDRAULIC DATA NAMEPLATE**  
 TO BE MOUNTED AT SYSTEM RISER



**FIRE SPRINKLER PLAN - SECOND-FLOOR**

SCALE: 1/8"=1'-0"  
 AREA PROTECTED: 964 SQ.FT.  
 FINISH FLOOR ELEVATION: 116'-2 1/2"

Symbol	Count	Thread	K-Factor	Description	Note
○	1	1/2"	4.9	TYCO LFI TY2234 155" WHITE RECESSED PENDENT	on Drop
◀	2	1/2"	4.4	TYCO LFI TY2334 155" WHITE HORIZONTAL SIDEWALL	on Line
◁	5	1/2"	4.4	TYCO LFI TY2334 155" WHITE RECESSED HORIZONTAL SIDEWALL	on Drop
8 = Total Number of Heads this floor					



**FIRE SPRINKLER PLAN - THIRD-FLOOR**

SCALE: 1/8"=1'-0"  
 AREA PROTECTED: 906 SQ.FT.  
 FINISH FLOOR ELEVATION: 124'-4"

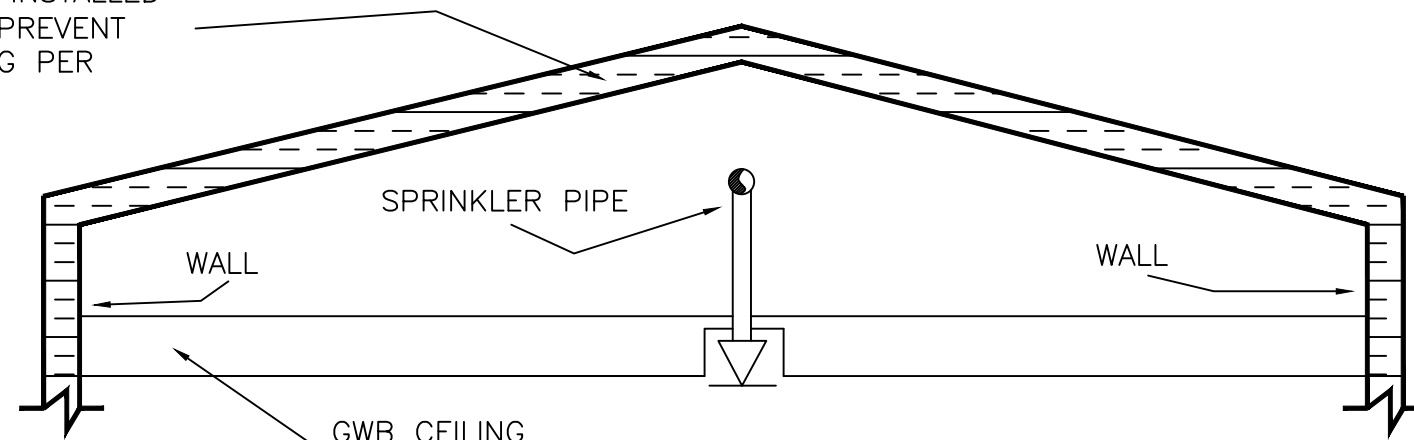
Symbol	Count	Thread	K-Factor	Description	Note
○	4	1/2"	4.9	TYCO LFI TY2234 155" WHITE RECESSED PENDENT	on Drop
◀	2	1/2"	4.4	TYCO LFI TY2334 155" WHITE HORIZONTAL SIDEWALL	on Line
◁	2	1/2"	4.4	TYCO LFI TY2334 155" WHITE RECESSED HORIZONTAL SIDEWALL	on Drop
8 = Total Number of Heads this floor					

**HYDRAULIC-SYSTEM**  
 THIS BUILDING IS PROTECTED BY A HYDRAULICALLY DESIGNED AUTOMATIC SPRINKLER SYSTEM.  
 LOCATION: 3RD FLOOR  
 NFA #13R  
 BASIS OF DESIGN:  
 1. GPM PER HEAD 14  
 2. NUMBER OF HEADS CALCULATED 4  
 SYSTEM DEMAND AT BASE:  
 1. WATER FLOW RATE 59.98 (GPM)  
 2. RESIDUAL PRESSURE AT BASE OF RISER 42.673 (PSI)

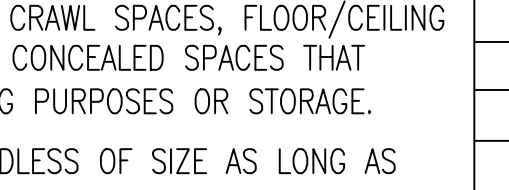
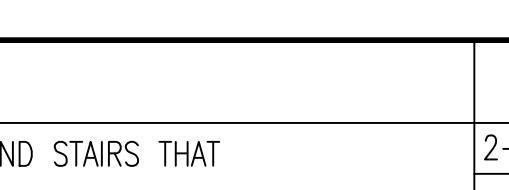
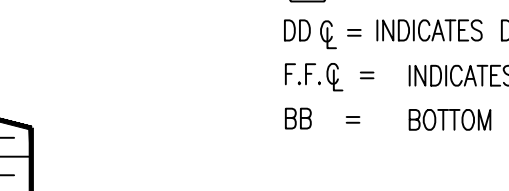
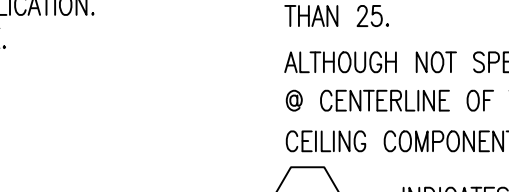
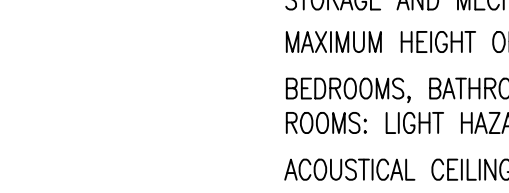
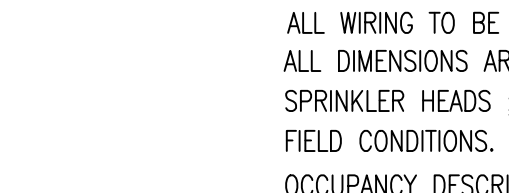
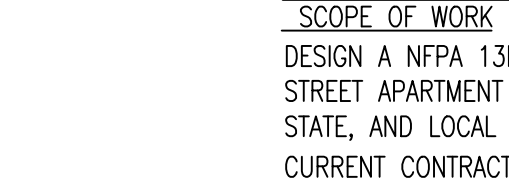
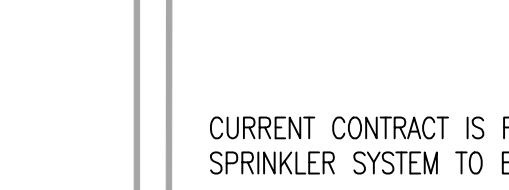
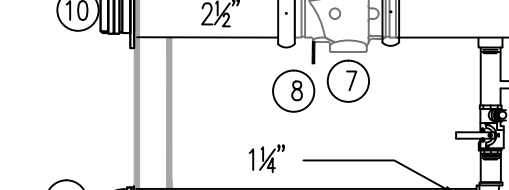
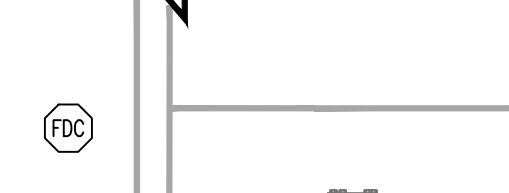
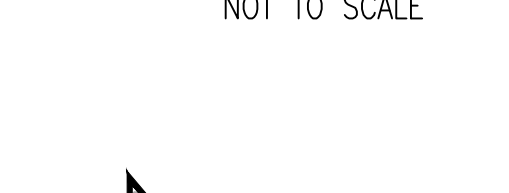
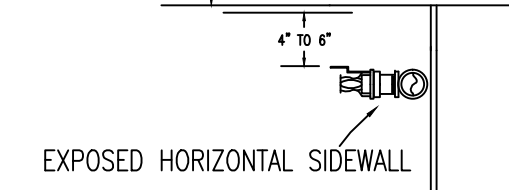
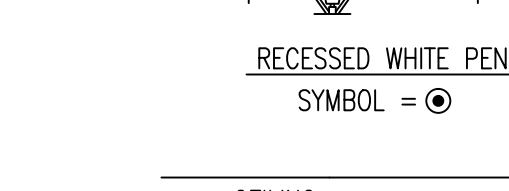
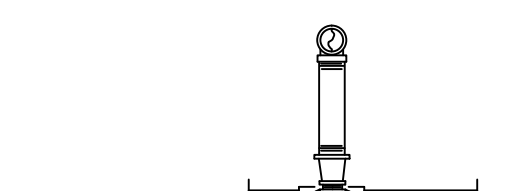
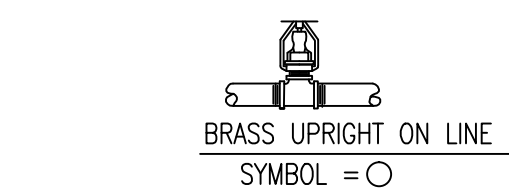
**HYDRAULIC DATA NAMEPLATES**  
 TO BE MOUNTED AT SYSTEM RISER  
 ○ = HYDRAULIC REFERENCE POINT

NOTE: THIS IS A SUGGESTED METHOD WHICH HAS BEEN USED QUITE OFTEN IN THIS APPLICATION. HOWEVER, EASTERN FIRE PROTECTION CANNOT GUARANTEE THAT PIPING WILL NOT FREEZE. THE OWNER SHOULD CONSULT WITH HIS ENGINEER OR BUILDER TO DETERMINE THAT THERE WILL BE SUFFICIENT HEAT AT THE PIPING (40° MIN) AT ALL TIMES.

WOOD TRUSSES WITH CONTINUOUS THERMAL BARRIER (SPRAY FOAM) TO BE INSTALLED THROUGHOUT ENTIRE ATTIC TO PREVENT SPRINKLER PIPE FROM FREEZING PER ARCHITECT (BY OTHERS)



**SPRINKLER PIPE INSULATION DETAIL**  
 SCALE: N.T.S.



**TYCO LF II**  
 LF II RESIDENTIAL RECESSED PENDENT SPRINKLER DESIGN REQUIREMENTS

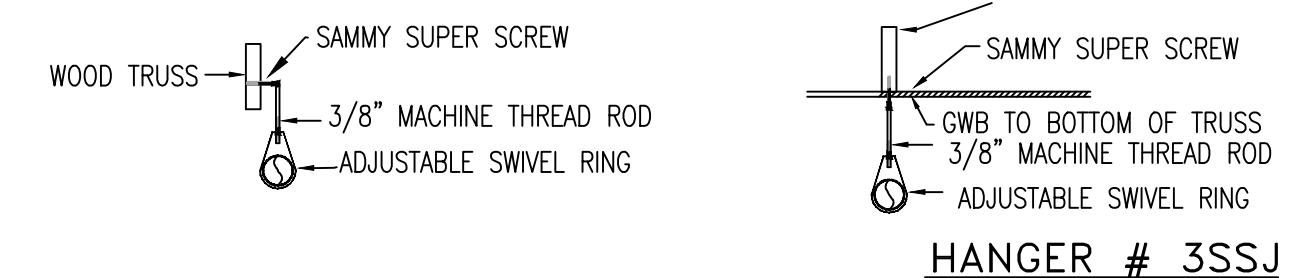
MODEL	COVERAGE AREA	MINIMUM DESIGN FLOW (PRESSURE) FOR HORIZONTAL CEILING (MAX. 2" RISE FOR 12" RUN)
LF II RECESSED PENDENT	12 x 12 14 x 14 16 x 16 18 x 18 20 x 20	155' / 175' / 68°C 13GPM (7.0psi) 13GPM (7.0psi) 13GPM (7.0psi) 17GPM (12.0psi) 20GPM (16.7psi)

K-FACTOR = 4.9, 1/2" N.P.T.  
 MINIMUM SPACING 8'-0"  
 MAXIMUM SPACING BETWEEN HEADS 16'-0"  
 MAXIMUM SPACING FROM WALL 8'-0"

**TYCO LFII RESIDENTIAL**  
 HORIZONTAL SIDEWALL SPRINKLER

COVERAGE AREA	MINIMUM FLOW AND RESIDUAL PRESSURE
MAXIMUM AREA	MAXIMUM THROW 14'-0"
MAXIMUM SPACING	DEFLECTOR 4" TO 6" BELOW CEILING
12' x 12'	155'
14' x 14'	14GPM (10.7psi)
16' x 16'	16GPM (13.2psi)
16' x 18'	19GPM (18.6psi)
16' x 20'	23GPM (27.3psi)
18' x 18'	23GPM (27.3psi)
18' x 20'	26GPM (34.9psi)

K-FACTOR = 4.4, 1/2" N.P.T.  
 MAXIMUM THROW 14'-0"  
 MAXIMUM SPACING FROM SIDE WALL 7'-0"  
 MINIMUM SPACING 8'-0" FROM HEAD ON SAME WALL



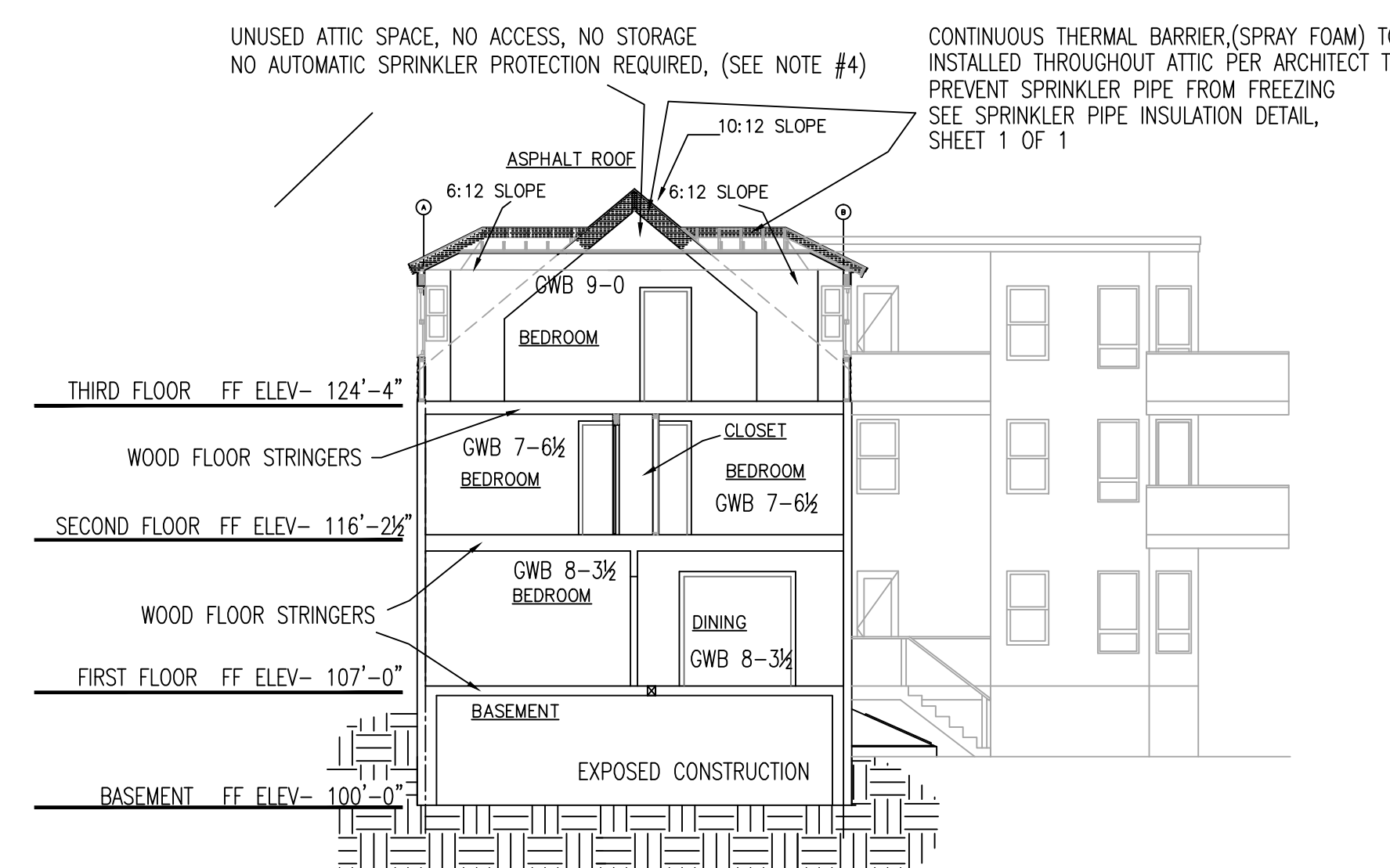
**HANGER DETAILS**  
 NOT TO SCALE  
 ALL HANGERS TO BE PROVIDED AND INSTALLED AS PER NFPA # 13R 3/8" ROD FOR 1" TO 4" PIPE

**PROPOSED LEGEND**

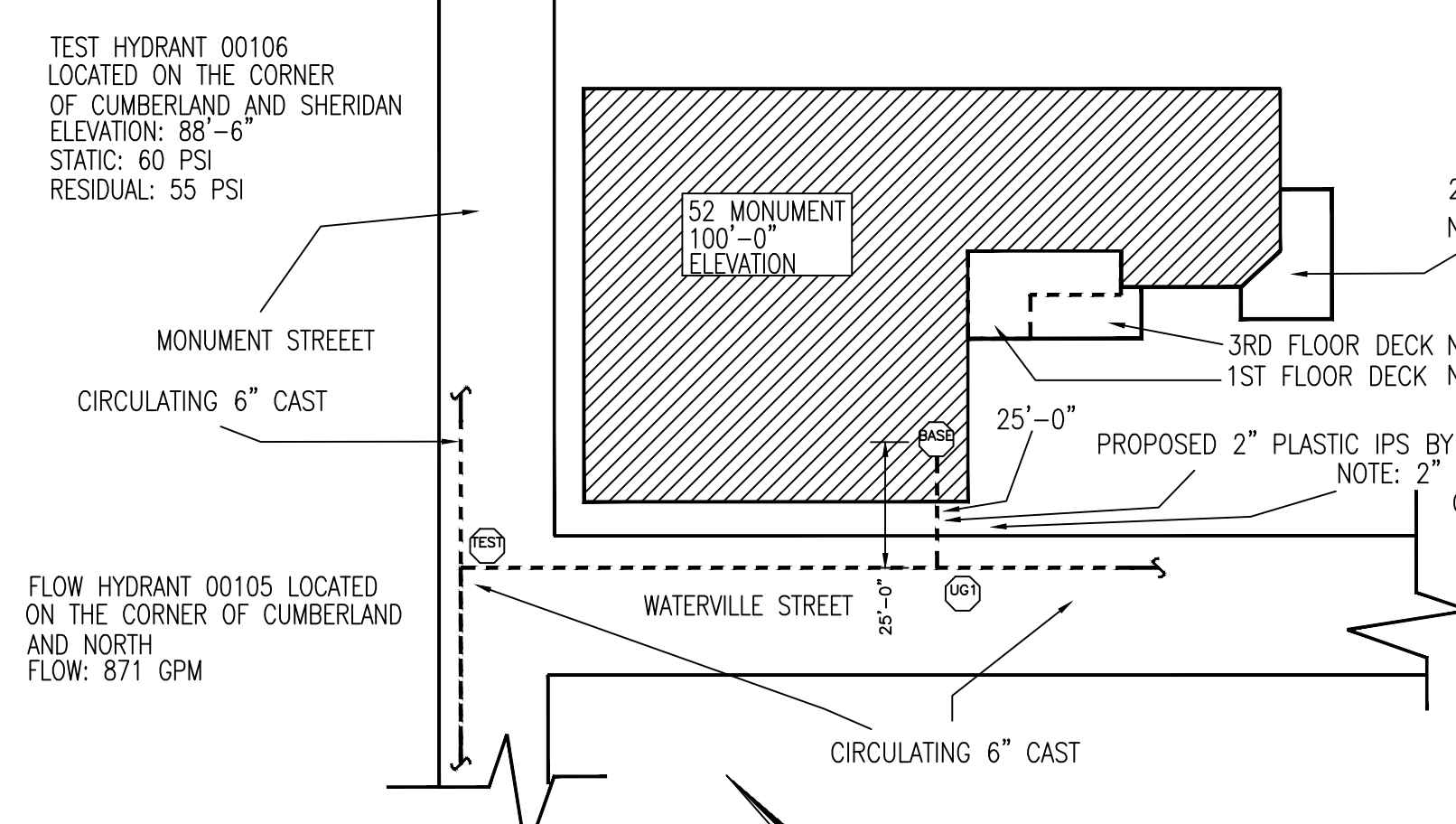
- 2" UNDERGROUND, INSTALLED BY OTHERS (MINIMUM 2" IPS)
  - 2 1/2" AMES COLT C200BFG WITH GROOVED BUTTERFLY VALVES WITH TAMPER N.O.
  - WATER PRESSURE GAUGE W/ 1/4" THREE-WAY VALVE.
  - PIPE STAND
  - 2 1/2" POTTER MOD. VSR FLOW SWITCH.
  - SPARE HEAD BOX WITH WRENCH & 3 SPARE SPRINKLERS OF EACH TYPE.
  - 2 1/2" SWING CHECK VALVE (SEE BASEMENT FLOOR PLAN)
  - 1/2" AUTOMATIC BALL DRIP (SEE BASEMENT FLOOR PLAN)
  - 1 1/2" MAIN DRAIN & ALARM TEST VALVE (SEE BASEMENT FLOOR PLAN)
  - 2 1/2" SINGLE FIRE DEPARTMENT CONNECTION W/ PLATE & CAP. (SEE BASEMENT FLOOR PLAN)
  - ELECTRIC BELL. (SEE BASEMENT FLOOR PLAN)
  - OUTSIDE MAIN DRAIN DISCHARGE (SEE BASEMENT FLOOR PLAN)
  - 2 X 2 1/2" CONCENTRIC INCREASER
- ALL WIRING BY OTHERS  
 NO = NORMALLY OPEN

**GENERAL NOTES**

- SCOPE OF WORK**  
 DESIGN A NFPA 13R WET SPRINKLER SYSTEM TO PROTECT 52 MONUMENT STREET APARTMENT BUILDING. IN COMPLIANCE WITH NFPA #13R (2013), STATE, AND LOCAL CODES.  
 CURRENT CONTRACT IS FOR DESIGN SERVICES ONLY. SPRINKLER SYSTEM TO BE INSTALLED AT A LATER DATE UNDER A SEPARATE CONTRACT  
 ALL WIRING 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:**  
 STORAGE AND MECHANICAL ROOMS: ORDINARY HAZARD GROUP I  
 MAXIMUM HEIGHT OF STORAGE 4'-11" A.F.F.  
 BEDROOMS, BATHROOMS, CORRIDORS, DINING, AND LIVING ROOMS: LIGHT HAZARD-RESIDENTIAL  
 ACoustICAL CEILING TILE (ACT) TO BE LISTED NON-COMBUSTIBLE WITH UL FLAME SPREAD OF LESS THAN 25.  
 ALTHOUGH NOT SPECIFIED, SOME SPRINKLER HEADS HAVE BEEN SHOWN @ CENTERLINE OF TILE. ACTUAL ORIENTATION OF HEADS WITH RESPECT TO CEILING COMPONENTS WILL VARY ACCORDING TO FIELD CONDITIONS.  
 ○ = INDICATES HYDRAULIC REFERENCE POINTS.  
 DD & = INDICATES DECK DOWN TO CENTERLINE OF PIPE.  
 F.F. & = INDICATES FINISH FLOOR UP TO CENTERLINE OF PIPE.  
 BB = BOTTOM OF BEAM



**BUILDING SECTION "A-A"**  
 SCALE: N.T.S.  
 1/8"=1'-0" GRAPHIC SCALE



**WATER FLOW TEST**  
 STATIC: 60  
 RESIDUAL: 55  
 FLOW: 871  
 PIPIT: N/A  
 ELEVATION: 88'-6"  
 DATE: 07/16/2012  
 TIME: N/A  
 FLOW TEST TAKEN BY PORTLAND WATER DISTRICT

**PLOT PLAN**  
 NOT TO SCALE

GENERAL NFPA #13R NOTES		DATE	REVISIONS	REQUIRED APPROVALS	52 MONUMENT ST APARTMENTS PORTLAND, MAINE	FIRE SPRINKLER PLANS & DETAILS
SPRINKLER SYSTEM DESIGN TO COMPLY WITH NFPA PAMPHLET # 13R-2013 PROPOSED MAIN PIPING (2"-2 1/2") TO BE SCHEDULE #10 BLACK WITH GROOVED ENDS & WELDED OUTLETS JOINED BY MECHANICAL COUPLINGS PROPOSED BRANCH LINE PIPING (1"-1 1/2") 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 13R: 2013 1. BATHROOMS NOT EXCEEDING 55 SQ. FT. WITH NON-COMBUSTIBLE CONSTRUCTION & FIXTURES 2. CLOTHES CLOSETS, LINEN CLOSETS, AND PANTRIES WITHIN THE DWELLING UNITS WHERE THE AREA OF THE SPACE DOES NOT EXCEED 24 SQ. FT. AND WITH THE LEAST DIMENSION NOT EXCEEDING 3 FT. WITH THE WALLS AND CEILING SURFACED WITH NON-COMBUSTIBLE OR LIMITED-COMBUSTIBLE MATERIALS AS DEFINED BY NFPA 220.	2-26-14	SUBMITTAL	OWNER / ARCHITECT		
	3. ANY PORCHES, BALCONIES, CORRIDORS, AND STAIRS THAT ARE OPEN AND ATTACHED. 4. ATTICS, PENTHOUSES, EQUIPMENT ROOMS, CRAWL SPACES, FLOOR/CEILING SPACES, ELEVATOR SHAFTS, AND ANY OTHER CONCEALED SPACES THAT ARE NOT USED OR INTENDED FOR FOR LIVING PURPOSES OR STORAGE. 5. CLOSETS ON EXTERIOR BALCONIES REGARDLESS OF SIZE AS LONG AS THERE ARE NO DOORS OR UNPROTECTED PENETRATIONS FROM THE CLOSET DIRECTLY INTO THE DWELLING. ALL WIRING TO BE DONE BY OTHERS			DRAWN BY MJB/II NICET LEVEL CERT.# CHECKED BY WAF NICET LEVEL III CERT.# 095574 CONTRACTOR LICENSE # 101 CONTRACTOR RMS # 368	CONTRACT WITH: LACHMAN ARCHITECTS AND PLANNERS	SCALE AS NOTED DATE 02/26/2014