

Fire Sprinkler Solutions, Inc.

1704 NE 82nd Terrace, Kansas City, MO 64118
phone: 816-260-4897 fax: 816-468-5633

Date: July 10, 2024

Re: Fire Sprinkler submittal review response
John Knox Village – Courtyards bldg. E
515 NW Moore Street
Lee's Summit, MO 64081

The following are responses to the fire department comments on the fire sprinkler plans:

Fire sprinkler shop drawings:

1. Sheet 1 shows Fire Dept Conn as a 4" OUT TO 4x2-1/2x2-1/2". This needs to be a 4" storz with a 30 degree elbow

The drawing has been revised to show "4" OUT TO 4" STORZ WITH 30 DEGREE ELBOW FIRE DEPT. CONN."

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1	07-10-24	PER CITY COMMENTS

Fire Sprinkler Solutions, Inc.
1704 NE 82nd Terrace, Kansas City, MO 64118
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ALL SAFE FIRE PROTECTION LLC

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**JOHN KNOX VILLAGE
COURTYARDS BUILDING E**
New Independent Living Building
Lee's Summit, MO



CONTRACT NO.
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SCOPE OF WORK

THE ENTIRE BUILDING WILL BE PROTECTED BY A NEW WET SPRINKLER SYSTEM THROUGHOUT.
THE BALCONIES WILL HAVE DRY TYPE SPRINKLERS SUPPLIED FROM THE WET SYSTEM.
THERE WILL BE A STANDPIPE SYSTEM THAT SUPPLIES HOSE VALVES IN EACH OF 2 STAIRS.
THERE WILL BE SPRINKLER CONTROL VALVES FOR EACH FLOOR CONNECTED TO THE STANDPIPE IN THE EAST STAIR (STAIR #2).
EACH FLOOR OF THE BUILDING WILL BE ON A SINGLE SPRINKLER ZONE, EXCEPT THE THIRD AND FOURTH FLOORS WILL BE SUPPLIED BY A SINGLE ZONE WITH THE VALVE ASSEMBLY AND MAIN LOCATED ON THE THIRD FLOOR.

GENERAL NOTES

THE SPRINKLER SYSTEM IS TO BE INSTALLED IN ACCORDANCE WITH NFPA 13R, 2016 EDITION.
ALL PIPE TO BE PLASTIC, CPVC, LISTED FOR USE IN FIRE SPRINKLER SYSTEMS.
ALL PIPE AND FITTINGS TO CONFORM WITH REQUIREMENTS OF NFPA 13.
VALVES ON CONNECTIONS TO WATER SUPPLIES, SECTIONAL CONTROL VALVES AND OTHER VALVES IN SUPPLY PIPES TO SPRINKLERS SHALL BE SUPERVISED OPEN BY AN APPROVED METHOD (BY OTHERS).
IT IS THE OWNERS RESPONSIBILITY TO PROVIDE ADEQUATE HEAT TO KEEP THE SPRINKLER SYSTEM FROM FREEZING.
ALL SECTIONS OF TRAPPED PIPING SHALL HAVE AUXILIARY DRAINS WHERE REQUIRED.
ALL ELECTRICAL WIRING OF ALARM BELLS, FLOW SWITCHES AND TAMPER SWITCHES (IF REQUIRED) TO BE DONE BY OTHERS.
THE SPRINKLER SYSTEM IS TO BE TESTED IN ACCORDANCE WITH THE LATEST APPLICABLE NFPA STANDARDS.
HANGERS TO BE SPACED TO MEET NFPA REQUIREMENTS.
SEISMIC BRACING IS NOT REQUIRED.

KEY NOTES

- SPRINKLERS SHALL NOT BE REQUIRED IN BATHROOMS WHERE THE BATHROOM AREA DOES NOT EXCEED 55 S.F. (PER NFPA 13R: 6.6.2)
- SPRINKLERS SHALL NOT BE REQUIRED IN CLOTHES CLOSETS, LINEN CLOSETS, AND PANTRIES WITHIN DWELLING UNITS THAT MEET ALL OF THE FOLLOWING CONDITIONS:
 - THE AREA OF THE SPACE DOES NOT EXCEED 24 S.F.
 - THE WALLS AND CEILINGS ARE SURFACED WITH NONCOMBUSTIBLE OR LIMITED-COMBUSTIBLE MATERIALS AS DEFINED BY NFPA 220, STANDARD ON TYPES OF BUILDING CONSTRUCTION.

DESIGN CRITERIA

DWELLING UNITS:
PER NFPA 13R
SPRINKLERS SPACED PER MANUFACTURER'S LISTING
CALCULATE UP TO MAXIMUM 4 SPRINKLERS OPERATING IN A COMPARTMENT
AT PRESSURE AND FLOW PER MANUFACTURER'S LISTING OR
AT MINIMUM OF 0.05 GPM/S.F., WHICHEVER IS GREATER
CORRIDOR, STAIR:
PER NFPA 13R
SPRINKLERS SPACED PER MANUFACTURER'S LISTING
CALCULATE UP TO MAXIMUM 4 ADJACENT SPRINKLERS OPERATING
AT PRESSURE AND FLOW PER MANUFACTURER'S LISTING OR
AT MINIMUM OF 0.05 GPM/S.F., WHICHEVER IS GREATER
MECHANICAL, STORAGE:
PER NFPA13R: 7.2.3.1
PER NFPA 13, ORDINARY HAZARD GROUP 1
CALCULATE UP TO A MAXIMUM OF 4 SPRINKLERS IN A COMPARTMENT
AT 0.15 GPM/S.F.
MAXIMUM 150 S.F. PER SPRINKLER
ATRIUM:
PER NFPA 13, LIGHT HAZARD
0.10 GPM/S.F. FOR 1500 S.F.
(REDUCED OPERATING AREA FOR USE OF Q.R. SPRINKLERS AS APPLICABLE)
MAXIMUM 225 S.F. PER SPRINKLER
100 GPM HOSE ALLOWANCE
WATER CURTAIN TO BE CALCULATED AT 3 GPM PER LINEAR FOOT
PER NFPA 13: 11.3.3.1
STANDPIPE:
CLASS 1 STANDPIPE (WET MANUAL)
250 GPM AT 100 PSI AT TOP MOST OUTLET
PLUS 250 GPM FOR NEXT HIGHEST OUTLET
PLUS 250 GPM FOR EACH ADDITIONAL STANDPIPE
(TOTAL 750 GPM MAXIMUM FLOWING)
ASSUMED PRESSURE AT THE FDC IS 175 PSI

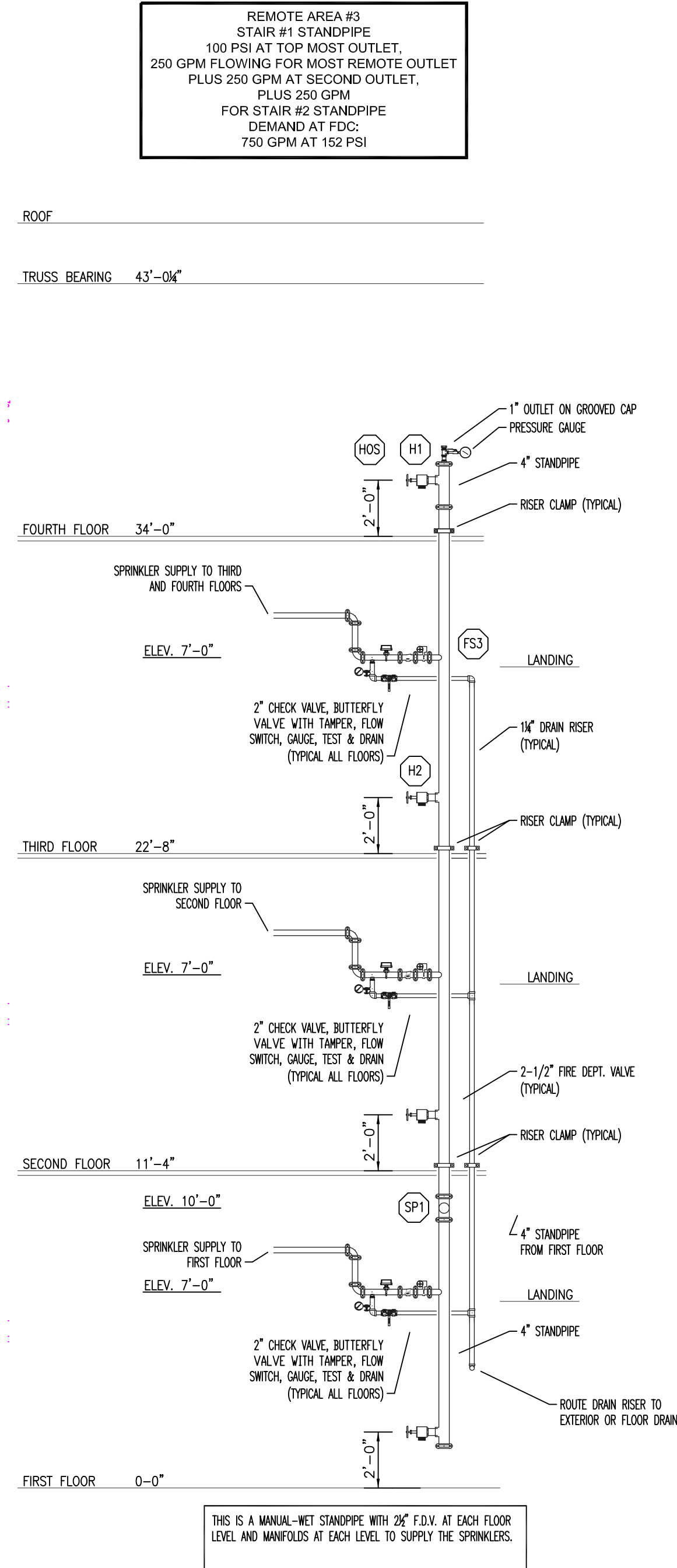
CONSTRUCTION

WOOD JOISTS AND TRUSSES.

FLOW TEST

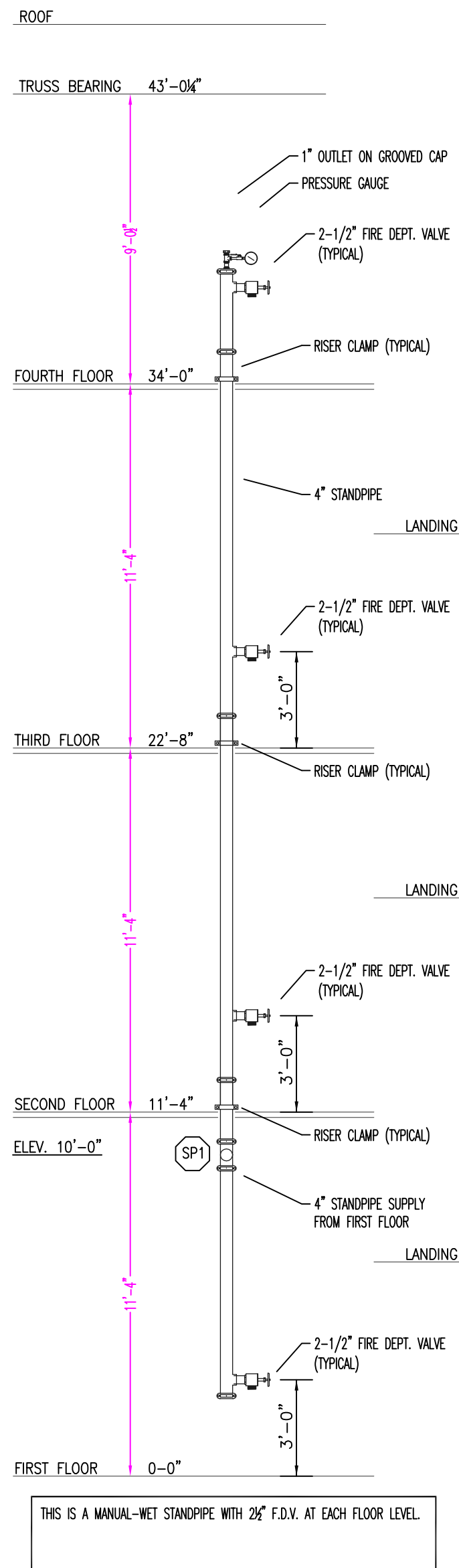
FLOW TEST:
STATIC: 98 PSI
RESIDUAL: 52 PSI WITH 1875 GPM FLOWING
LOCATION: 515 NW MOORE STREET
STATIC/RESIDUAL HYDRANT:
ELEVATION: SAME AS FINISHED FLOOR
DATE: 05/02/24
INFORMATION FROM: LEE'S SUMMIT WATER

SPRINKLERS NOT REQUIRED IN CONCEALED SPACES AS FOLLOWS:
per NFPA 13R, 2013, section 6.6.6:
Sprinklers shall not be required in attics, penthouses equipment rooms, elevator machine rooms, concealed spaces dedicated exclusively to and containing only dwelling unit ventilation equipment, crawl spaces, floor/ceiling spaces, noncombustible elevator shafts where the elevator cars comply with ANSI A17.1 and other concealed spaces that are not used or intended for living purposes or storage and do not contain fuel-fired equipment.



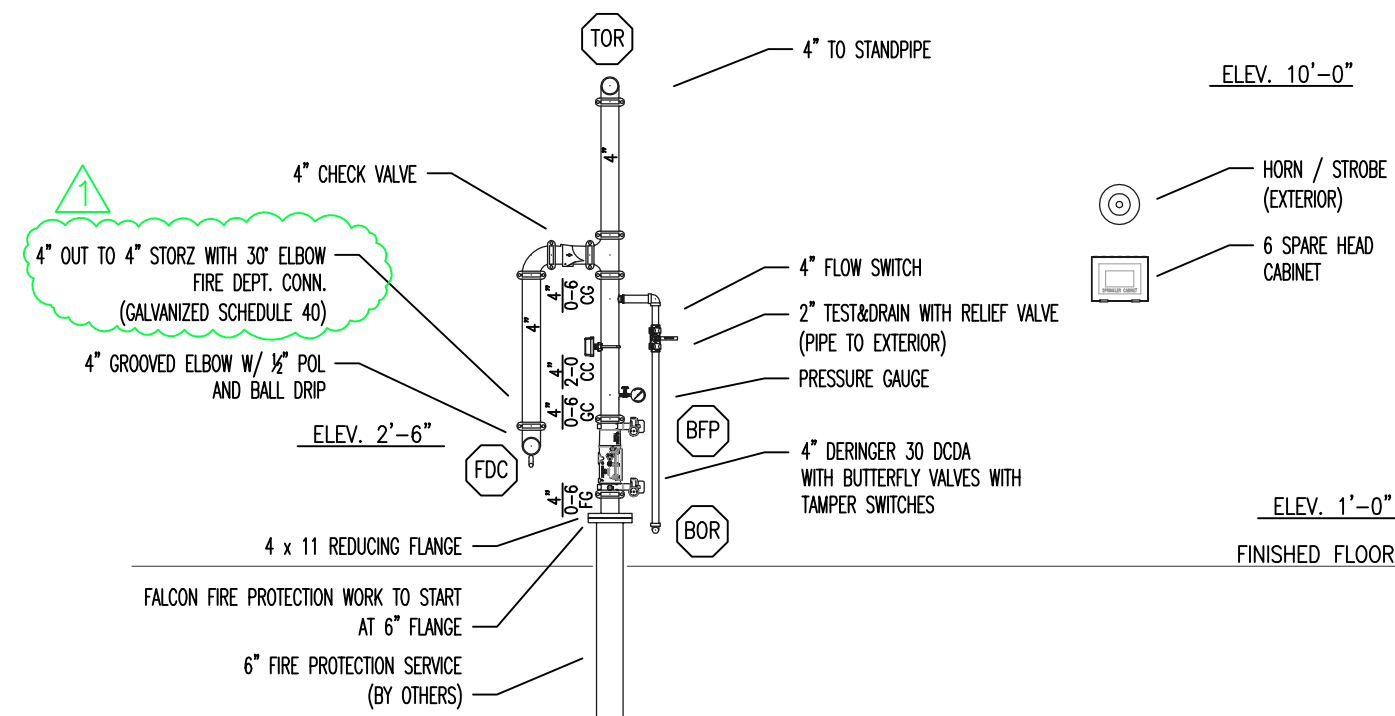
SOUTH STANDPIPE
(STAIR #1)

SCALE 1/4"=1'-0"



NORTH STANDPIPE
(STAIR #2)

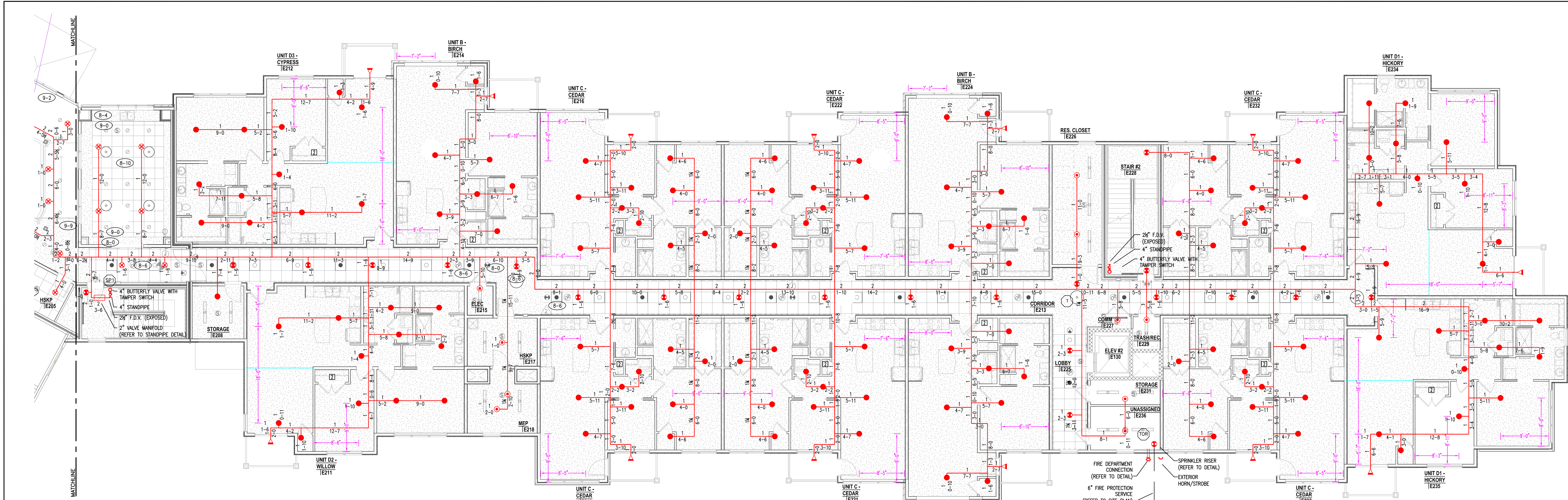
SCALE 1/4"=1'-0"



COORDINATE ALL TAMPER AND FLOW SWITCHES
WITH ALARM CONTRACTOR.
PROVIDE HYDRAULIC INFORMATION IN SHEET
ON RISER FOR ALL NEW HYDRAULIC AREA.

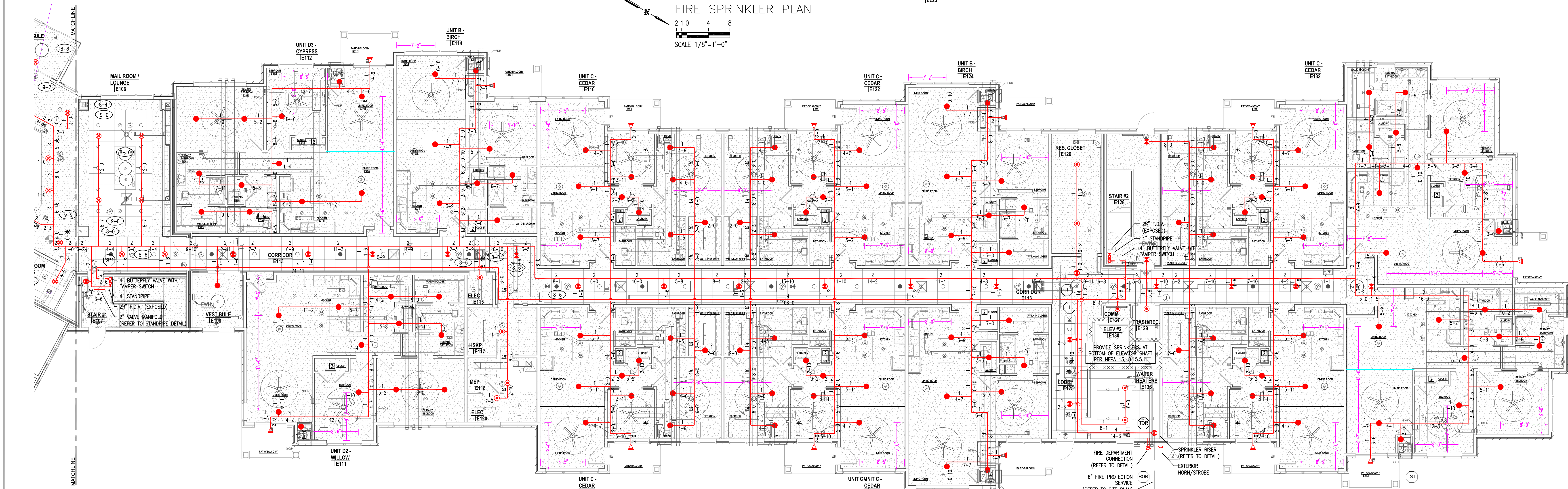
SPRINKLER RISER

SCALE 1/4"=1'-0"



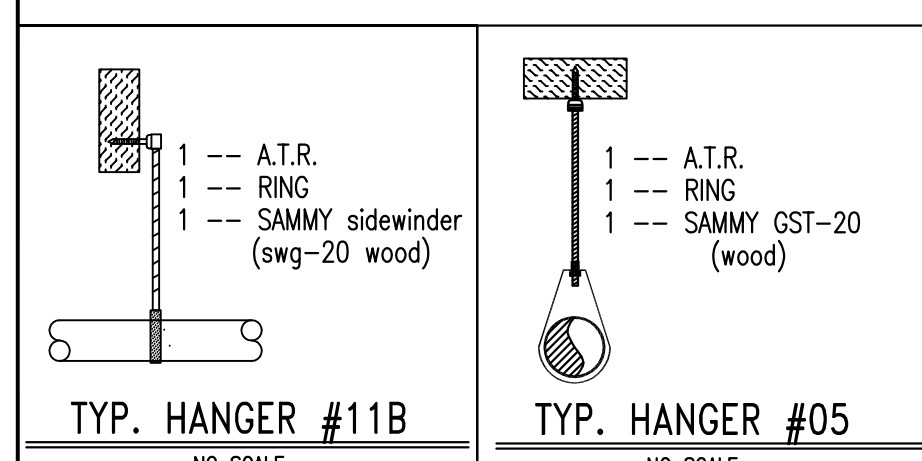
SECOND FLOOR
IL UNITS
FIRE SPRINKLER PLAN

2 10 4 8
SCALE 1/8"=1'-0"



FIRST FLOOR
IL UNITS
FIRE SPRINKLER PLAN

2 10 4 8
SCALE 1/8"=1'-0"



HANGER SPACING TABLE									
PIPE SIZE (NOMINAL, INCHES)	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
STEEL PIPE (EXCEPT THREADED LIGHTWALL)	N/A	12'-0"	12'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"
STEEL PIPE (THREADED LIGHTWALL)	N/A	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	N/A	N/A
COPPER	8'-0"	8'-0"	10'-0"	10'-0"	12'-0"	12'-0"	12'-0"	15'-0"	15'-0"
CPVC	5'-6"	6'-0"	6'-6"	7'-0"	8'-0"	9'-0"	10'-0"	N/A	N/A

SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
*	DENOTES HYDRAULICALLY CALCULATED SPRINKLER
(P)	HYDRAULIC REFERENCE POINT
(P-7)	CEILING HEIGHT
TOJ	TOP OF JOIST ELEVATION ABOVE FINISHED FLOOR
(C 2'-2")	CENTERLINE OF PIPE DOWN FROM CEILING OR ROOF
(C 2'-2")	CENTERLINE OF PIPE A.F.F.
○ RN	RISER NIPPLE
○ DN	PIPE DOWN
○	VERTICAL SUPPLY RISER
○	SPRINKLER RISER
—	APPROVED TYPE HANGER ON PIPE

SPRINKLER LEGEND									
SYMBOL	SPRINKLER TYPE	SIN #	FINISH	TEMP.	THREAD	K-FACTOR	1ST FLR	2ND FLR	3RD FLR
●	RELIABLE MODEL F1R649 RESIDENTIAL RECESSED PENDENT	R3516	WHITE	155°	1/2"	4.9	131	131	121
●	RELIABLE MODEL R7C49 RESIDENTIAL CONCEALED PENDENT	RGC49	WHITE	165°	1/2"	4.9	21	21	20
●	RELIABLE MODEL F1R644 RESIDENTIAL SIDEWALL	R3531	WHITE	155°	1/2"	4.4	—	—	6
●	RELIABLE MODEL F1FR56 Q.R. RECESSED PENDENT	F1FR56	WHITE	155°	1/2"	5.6	13	13	33
●	RELIABLE MODEL F1FR56 Q.R. PENDENT (EXPOSED - BELOW CEILING)	F1FR56	WHITE	155°	1/2"	5.6	—	—	10
●	RELIABLE MODEL G6-46 CONCEALED PENDENT	F1FR56	WHITE	155°	1/2"	5.6	28	27	6
●	RELIABLE MODEL F3QR56 Q.R. STANDARD SPRAY DRY HORIZONTAL SIDEWALL	F3QR56	CHROME	200°	1/2"	5.6	13	13	13
	TOTAL						206	205	199

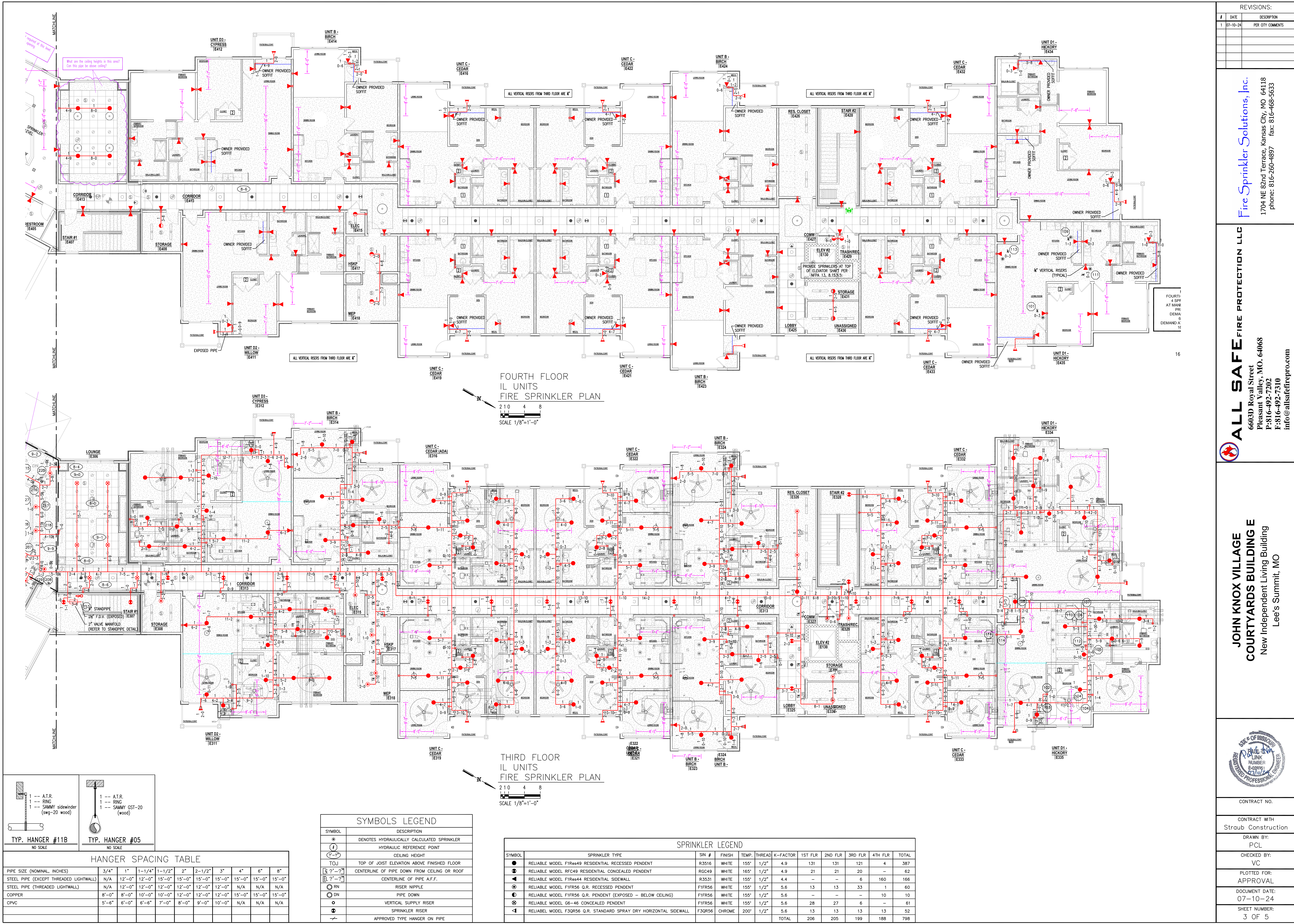
ALL SAFE FIRE PROTECTION LLC
6603D Royal Street
Pleasant Valley, MO. 64068
P: 816-492-7202
F: 816-492-7310
info@allsafefirepro.com

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COURTYARDS BUILDING E
New Independent Living Building
Lee's Summit, MO

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STATE OF MISSOURI
Professional Engineer
PAUL M. LUK
NUMBER
E-0095
67109-01

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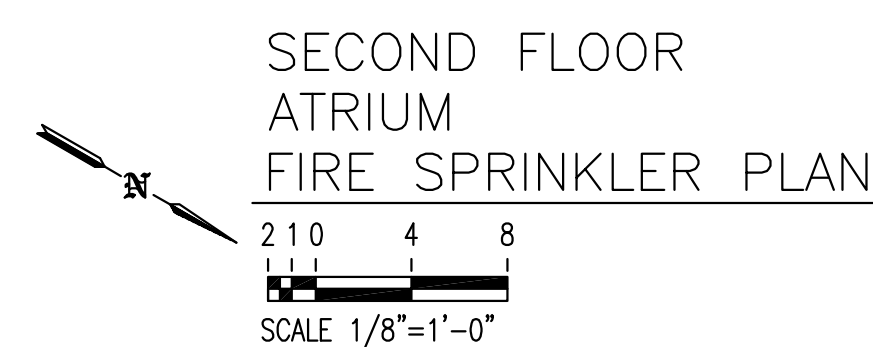
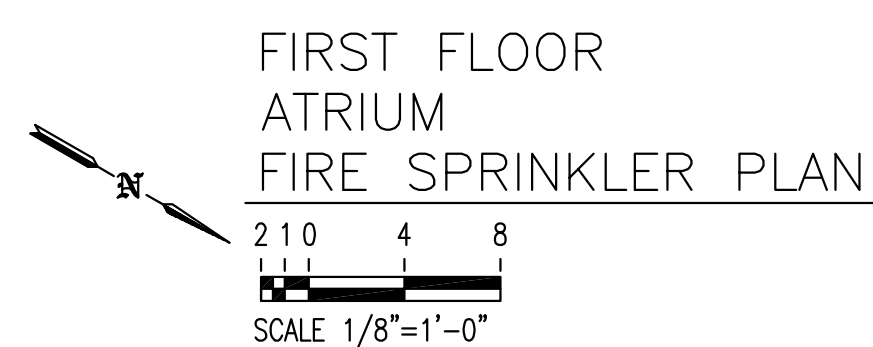
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HANGER SPACING TABLE

SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
*	DENOTES HYDRAULICALLY CALCULATED SPRINKLER
(I)	HYDRAULIC REFERENCE POINT
($2'-0"$)	CEILING HEIGHT
TOJ	TOP OF JOIST ELEVATION ABOVE FINISHED FLOOR
($2'-0"$)	CENTERLINE OF PIPE DOWN FROM CEILING OR ROOF
($2'-0"$)	CENTERLINE OF PIPE A.F.F.
○ RN	RISER NIPPLE
○ DN	PIPE DOWN
○	VERTICAL SUPPLY RISER
⊕	SPRINKLER RISER
—	APPROVED TYPE HANGER ON PIPE

SPRINKLER LEGEND											
SYMBOL	SPRINKLER TYPE	SIN #	FINISH	TEMP.	THREAD	K-FACTOR	1ST FLR	2ND FLR	3RD FLR	4TH FLR	TOTAL
●	RELIABLE MODEL F1R9949 RESIDENTIAL RECESSED PENDENT	R3516	WHITE	155°	1/2"	4.9	131	131	121	4	387
●	RELIABLE MODEL R1C49 RESIDENTIAL CONCEALED PENDENT	R0C49	WHITE	165°	1/2"	4.9	21	21	20	-	62
◀	RELIABLE MODEL F1R9944 RESIDENTIAL SIDEWALL	R3531	WHITE	155°	1/2"	4.4	-	-	-	6	160
⊙	RELIABLE MODEL F1FR56 Q.R. RECESSED PENDENT	F1FR56	WHITE	155°	1/2"	5.6	13	13	33	1	60
⊙	RELIABLE MODEL F1FR56 Q.R. PENDENT (EXPOSED - BELOW CEILING)	F1FR56	WHITE	155°	1/2"	5.6	-	-	-	10	10
⊗	RELIABLE MODEL GG-46 CONCEALED PENDENT	F1FR56	WHITE	155°	1/2"	5.6	28	27	6	-	61
◀	RELIABLE MODEL F3QR56 Q.R. STANDARD SPRAY DRY HORIZONTAL SIDEWALL	F3QR56	CHROME	200°	1/2"	5.6	13	13	13	13	52
						TOTAL	206	205	199	188	798

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