

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."

REVISIONS:		
#	DATE	DESCRIPTION
1	07-10-24	PER CITY COMMENTS

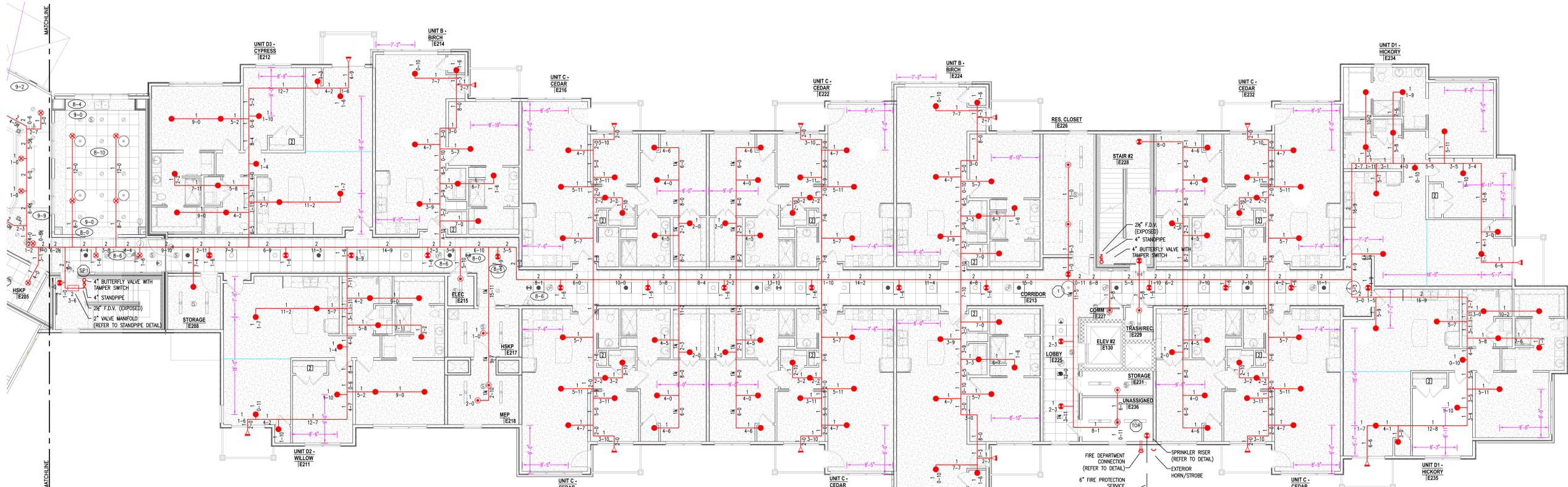
ALL SAFE FIRE PROTECTION LLC
 6603D Royal Street
 Pleasant Valley, MO, 64068
 P: 816-492-7202
 F: 816-492-7310
 info@allsafefirepro.com

Fire Sprinkler Solutions, Inc.
 1704 NE 82nd Terrace, Kansas City, MO, 64118
 phone: 816-260-4897 fax: 816-468-5633

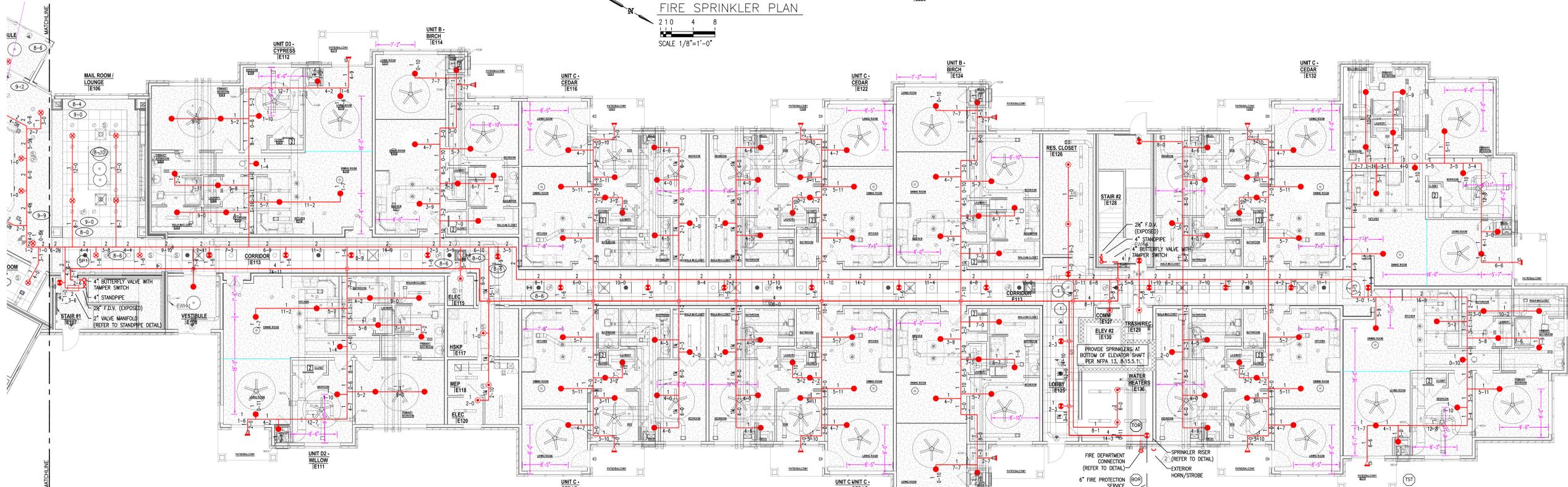
**JOHN KNOX VILLAGE
 COURTYARDS BUILDING**
 New Independent Living Building
 Lee's Summit, MO



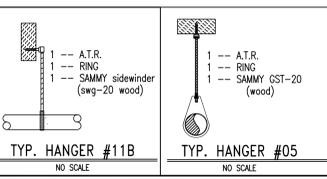
CONTRACT NO.
CONTRACT WITH Straub Construction
DRAWN BY: PCL
CHECKED BY: VC
PLOTTED FOR: APPROVAL
DOCUMENT DATE: 07-10-24
SHEET NUMBER: 2 OF 5



SECOND FLOOR
 IL UNITS
 FIRE SPRINKLER PLAN
 2 1 0 4 8
 SCALE 1/8"=1'-0"



FIRST FLOOR
 IL UNITS
 FIRE SPRINKLER PLAN
 2 1 0 4 8
 SCALE 1/8"=1'-0"



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

SYMBOL	DESCRIPTION
*	DENOTES HYDRAULICALLY CALCULATED SPRINKLER
(H)	HYDRAULIC REFERENCE POINT
(C)	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

SYMBOL	SPRINKLER TYPE	SIN #	FINISH	TEMP.	THREAD	K-FACTOR	1ST FLR	2ND FLR	3RD FLR	4TH FLR	TOTAL
●	RELIABLE MODEL F1R649 RESIDENTIAL RECESSED PENDENT	R3516	WHITE	155°	1/2"	4.9	131	131	121	4	387
●	RELIABLE MODEL RFC449 RESIDENTIAL CONCEALED PENDENT	RGC49	WHITE	165°	1/2"	4.9	21	21	20	—	62
●	RELIABLE MODEL F1R644 RESIDENTIAL SIDEWALL	R3531	WHITE	155°	1/2"	4.4	—	—	6	160	166
●	RELIABLE MODEL F1R56 G.R. RECESSED PENDENT	F1R56	WHITE	155°	1/2"	5.6	13	13	33	1	60
●	RELIABLE MODEL F1FR56 G.R. PENDENT (EXPOSED - BELOW CEILING)	F1FR56	WHITE	155°	1/2"	5.6	—	—	—	10	10
●	RELIABLE MODEL G6-46 CONCEALED PENDENT	F1FR56	WHITE	155°	1/2"	5.6	28	27	6	—	61
●	RELIABLE MODEL F3QR56 G.R. STANDARD SPRAY DRY HORIZONTAL SIDEWALL	F3QR56	CHROME	200°	1/2"	5.6	13	13	13	13	52
	TOTAL						206	205	199	188	798

REVISIONS:

#	DATE	DESCRIPTION
1	07-10-24	PER CITY COMMENTS

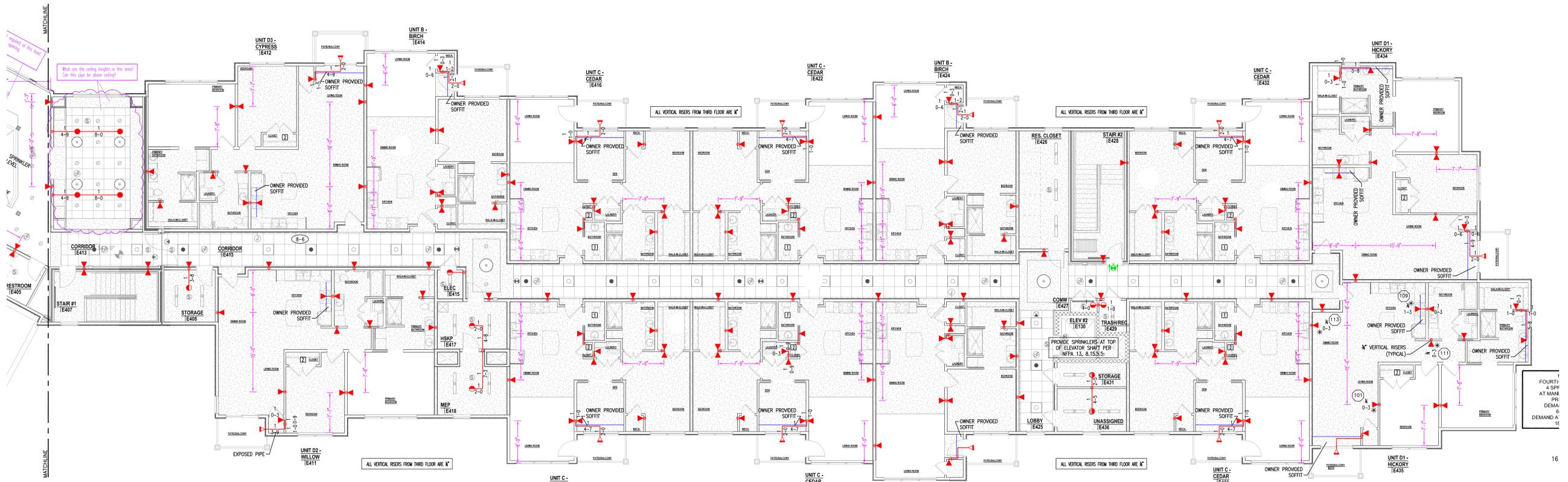
Fire Sprinkler Solutions, Inc.
 1704 NE 82nd Terrace, Kansas City, MO 64118
 phone: 816-260-4897 fax: 816-468-5633

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

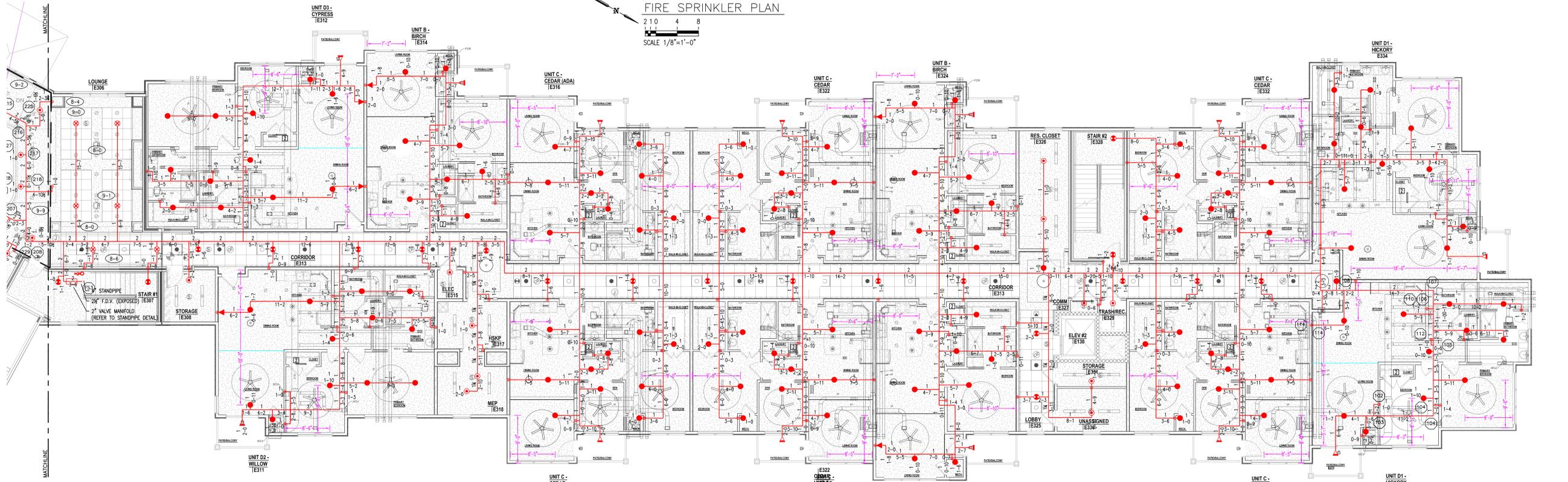
**JOHN KNOX VILLAGE
 COURTYARDS BUILDING E**
 New Independent Living Building
 Lee's Summit, MO



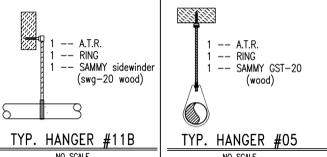
CONTRACT NO.
 CONTRACT WITH
 Straub Construction
 DRAWN BY:
 PCL
 CHECKED BY:
 VC
 PLOTTED FOR:
 APPROVAL
 DOCUMENT DATE:
 07-10-24
 SHEET NUMBER:
 3 OF 5



FOURTH FLOOR
 IL UNITS
 FIRE SPRINKLER PLAN
 210 4 8
 SCALE 1/8"=1'-0"



THIRD FLOOR
 IL UNITS
 FIRE SPRINKLER PLAN
 210 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"	8"
STEEL PIPE (EXCEPT THREADED LIGHTWALL)	N/A	12'-0"	12'-0"	15'-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	N/A
COPPER	8'-0"	8'-0"	10'-0"	10'-0"	12'-0"	12'-0"	15'-0"	15'-0"	15'-0"	15'-0"
CPVC	5'-6"	6'-0"	6'-6"	7'-0"	8'-0"	9'-0"	10'-0"	N/A	N/A	N/A

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
(*)	DENOTES HYDRAULICALLY CALCULATED SPRINKLER
(H)	HYDRAULIC REFERENCE POINT
(C)	CEILING HEIGHT
(TOJ)	TOP OF JOIST ELEVATION ABOVE FINISHED FLOOR
(E) (2'-2")	CENTERLINE OF PIPE DOWN FROM CEILING OR ROOF
(E) (2'-2")	CENTERLINE OF PIPE A.F.F.
(RN)	RISER NIPPLE
(DN)	PIPE DOWN
(V)	VERTICAL SUPPLY RISER
(S)	SPRINKLER RISER
(H)	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 F1R649 RESIDENTIAL RECESSED PENDENT	R3516	WHITE	155°	1/2"	4.9	131	131	121	4	387
(●)	RELIABLE MODEL RFC49 RESIDENTIAL CONCEALED PENDENT	RGC49	WHITE	165°	1/2"	4.9	21	21	20	—	62
(●)	RELIABLE MODEL F1R644 RESIDENTIAL SIDEWALL	R3531	WHITE	155°	1/2"	4.4	—	—	6	160	166
(●)	RELIABLE MODEL F1R656 Q.R. RECESSED PENDENT	F1R656	WHITE	155°	1/2"	5.6	13	13	33	1	60
(●)	RELIABLE MODEL F1R656 Q.R. PENDENT (EXPOSED - BELOW CEILING)	F1R656	WHITE	155°	1/2"	5.6	—	—	—	10	10
(●)	RELIABLE MODEL G6-46 CONCEALED PENDENT	F1R656	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

REVISIONS:		
#	DATE	DESCRIPTION
1	07-10-24	PER CITY COMMENTS

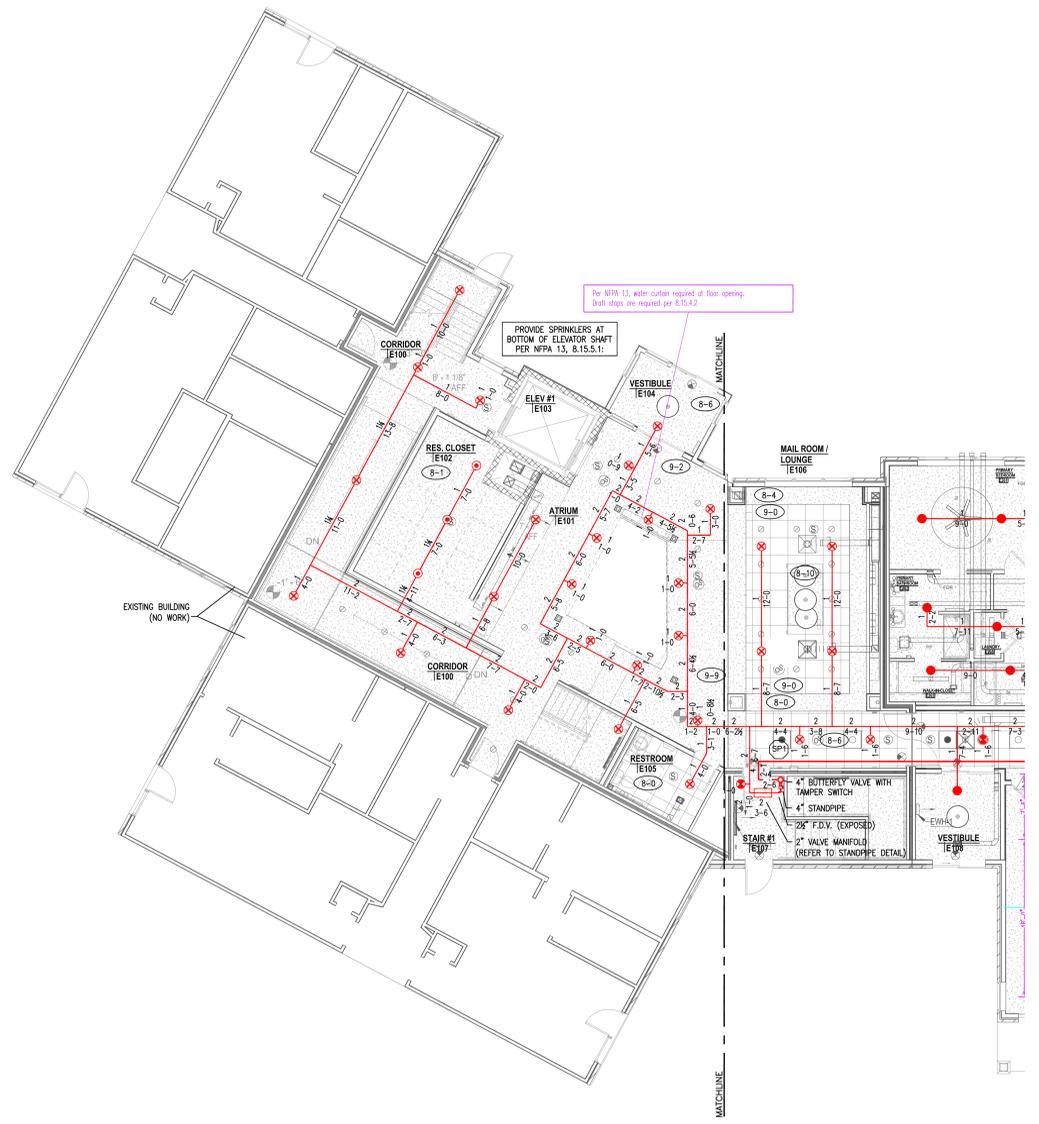
Fire Sprinkler Solutions, Inc.
 1704 NE 82nd Terrace, Kansas City, MO 64118
 phone: 816-260-4897 fax: 816-468-5633

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

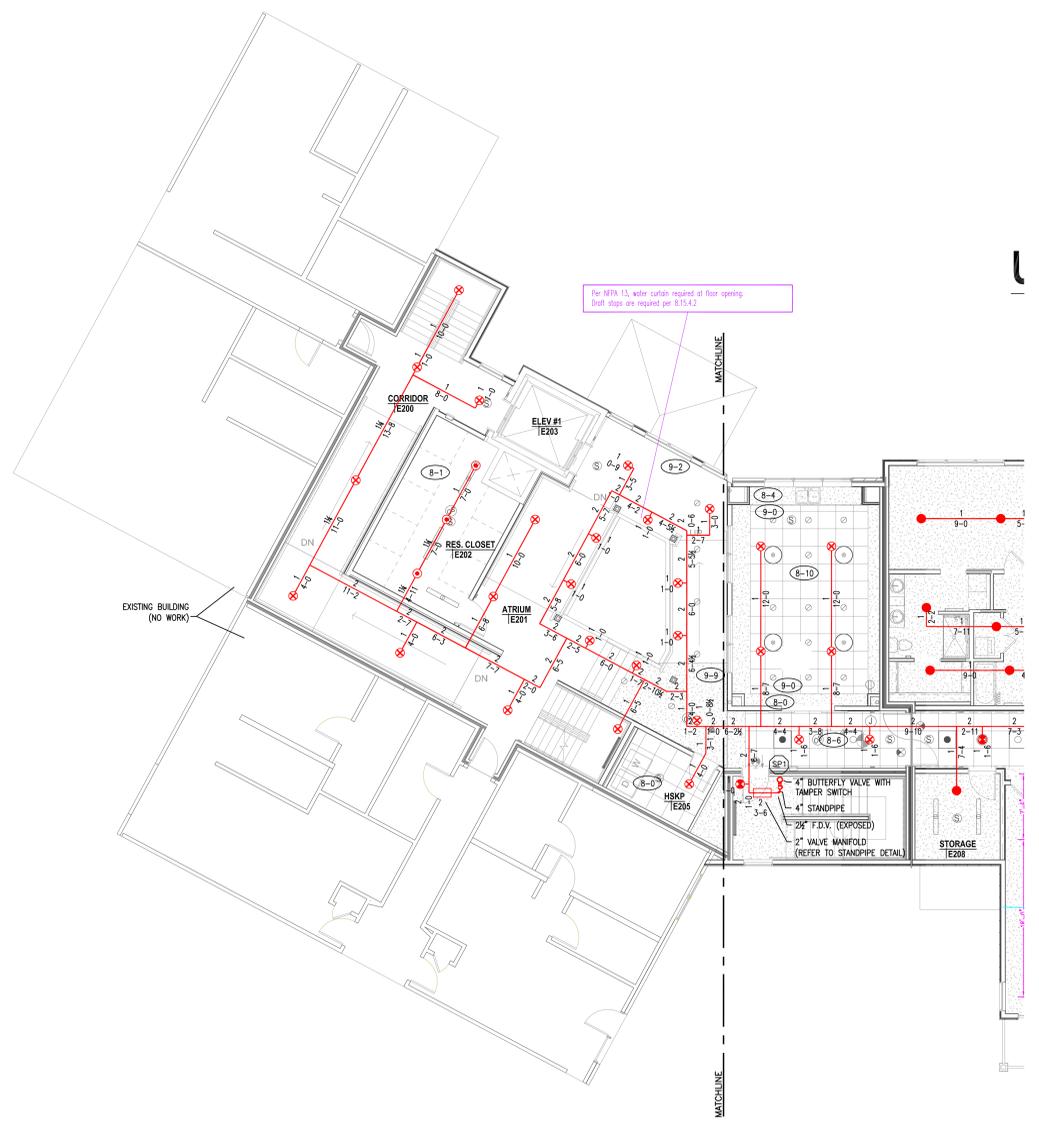
JOHN KNOX VILLAGE COURTYARDS BUILDING E
 New Independent Living Building
 Lee's Summit, MO



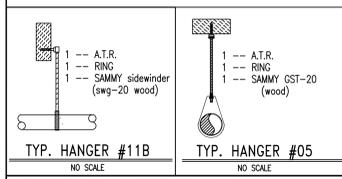
CONTRACT NO.
 CONTRACT WITH
 Straub Construction
 DRAWN BY:
 PCL
 CHECKED BY:
 VC
 PLOTTED FOR:
 APPROVAL
 DOCUMENT DATE:
 07-10-24
 SHEET NUMBER:
 4 OF 5



FIRST FLOOR
 ATRIUM
 FIRE SPRINKLER PLAN
 SCALE 1/8"=1'-0"



SECOND FLOOR
 ATRIUM
 FIRE SPRINKLER PLAN
 SCALE 1/8"=1'-0"



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

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

SYMBOL	SPRINKLER TYPE	SIN #	FINISH	TEMP.	THREAD	K-FACTOR	1ST FLR	2ND FLR	3RD FLR	4TH FLR	TOTAL
●	RELIABLE MODEL F1Res49 RESIDENTIAL RECESSED PENDENT	R3516	WHITE	155°	1/2"	4.9	131	131	121	4	387
●	RELIABLE MODEL RFC49 RESIDENTIAL CONCEALED PENDENT	RGC49	WHITE	165°	1/2"	4.9	21	21	20	-	62
●	RELIABLE MODEL F1Res44 RESIDENTIAL SIDEWALL	R3531	WHITE	155°	1/2"	4.4	-	-	6	160	166
●	RELIABLE MODEL F1FR56 G.R. RECESSED PENDENT	F1FR56	WHITE	155°	1/2"	5.6	13	13	33	1	60
●	RELIABLE MODEL F1FR56 G.R. PENDENT (EXPOSED - BELOW CEILING)	F1FR56	WHITE	155°	1/2"	5.6	-	-	-	10	10
●	RELIABLE MODEL G6-46 CONCEALED PENDENT	F1FR56	WHITE	155°	1/2"	5.6	28	27	6	-	61
●	RELIABLE MODEL F3QR56 G.R. STANDARD SPRAY DRY HORIZONTAL SIDEWALL	F3QR56	CHROME	200°	1/2"	5.6	13	13	13	13	52
	TOTAL						206	205	199	188	798

REVISIONS:		
#	DATE	DESCRIPTION
1	07-10-24	PER CITY COMMENTS

Fire Sprinkler Solutions, Inc.
 1704 NE 82nd Terrace, Kansas City, MO 64118
 phone: 816-260-4897 fax: 816-468-5633

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

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

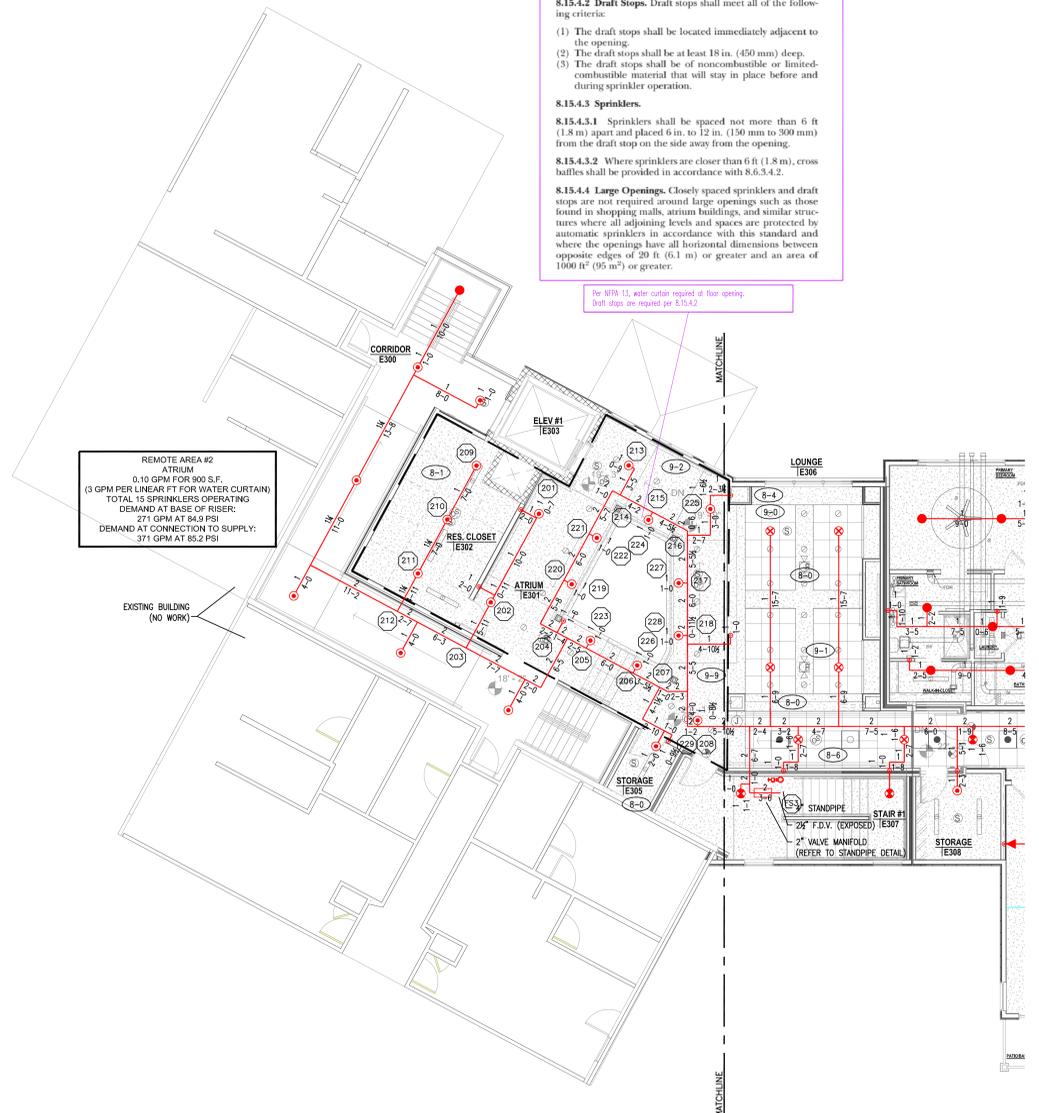


CONTRACT NO.
 CONTRACT WITH Straub Construction
 DRAWN BY: PCL
 CHECKED BY: VC
 PLOTTED FOR: APPROVAL
 DOCUMENT DATE: 07-10-24
 SHEET NUMBER: 5 OF 5

8.15.4* Vertical Openings.
8.15.4.1* General. Unless the requirements of 8.15.4.4 are met, where moving stairways, staircases, or similar floor openings are unenclosed and where sprinkler protection is serving as the alternative to enclosure of the vertical opening, the floor openings involved shall be protected by closely spaced sprinklers in combination with draft stops in accordance with 8.15.4.2 and 8.15.4.3.
8.15.4.2 Draft Stops. Draft stops shall meet all of the following criteria:
 (1) The draft stops shall be located immediately adjacent to the opening.
 (2) The draft stops shall be at least 18 in. (450 mm) deep.
 (3) The draft stops shall be of noncombustible or limited-combustible material that will stay in place before and during sprinkler operation.
8.15.4.3 Sprinklers.
8.15.4.3.1 Sprinklers shall be spaced not more than 6 ft (1.8 m) apart and placed 6 in. to 12 in. (150 mm to 300 mm) from the draft stop on the side away from the opening.
8.15.4.3.2 Where sprinklers are closer than 6 ft (1.8 m), cross baffles shall be provided in accordance with 8.6.3.4.2.
8.15.4.4 Large Openings. Closely spaced sprinklers and draft stops are not required around large openings such as those found in shopping malls, atrium buildings, and similar structures where all adjoining levels and spaces are protected by automatic sprinklers in accordance with this standard and where the openings have all horizontal dimensions between opposite edges of 30 ft (9.1 m) or greater and an area of 1000 ft² (93 m²) or greater.

Per NFPA 13, water curtain required of floor opening. Draft stops are required per 8.15.4.3.

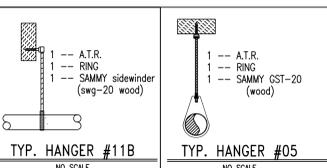
REMOTE AREA #2
 ATRIUM
 0.10 GPM PER 100 S.F.
 (3 GPM PER LINEAR FT FOR WATER CURTAIN)
 TOTAL 15 SPRINKLERS OPERATING
 DEMAND AT BASE OF RISER:
 271 GPM AT 84.5 PSI
 DEMAND AT CONNECTION TO SUPPLY:
 371 GPM AT 85.2 PSI



THIRD FLOOR ATRIUM FIRE SPRINKLER PLAN
 SCALE 1/8"=1'-0"



FOURTH FLOOR ATRIUM FIRE SPRINKLER PLAN
 SCALE 1/8"=1'-0"



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

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

SYMBOL	SPRINKLER TYPE	SIN #	FINISH	TEMP.	THREAD	K-FACTOR	1ST FLR	2ND FLR	3RD FLR	4TH FLR	TOTAL
●	RELIABLE MODEL F1Res49 RESIDENTIAL RECESSED PENDENT	R3516	WHITE	155°	1/2"	4.9	131	131	121	4	387
●	RELIABLE MODEL RFC49 RESIDENTIAL CONCEALED PENDENT	RGC49	WHITE	165°	1/2"	4.9	21	21	20	-	62
●	RELIABLE MODEL F1Res44 RESIDENTIAL SIDEWALL	R3531	WHITE	155°	1/2"	4.4	-	-	6	160	166
●	RELIABLE MODEL F1FR56 G.R. RECESSED PENDENT	F1FR56	WHITE	155°	1/2"	5.6	13	13	33	1	60
●	RELIABLE MODEL F1FR56 G.R. PENDENT (EXPOSED - BELOW CEILING)	F1FR56	WHITE	155°	1/2"	5.6	-	-	-	10	10
●	RELIABLE MODEL G6-46 CONCEALED PENDENT	F1FR56	WHITE	155°	1/2"	5.6	28	27	6	-	61
●	RELIABLE MODEL F3QR56 G.R. STANDARD SPRAY DRY HORIZONTAL SIDEWALL	F3QR56	CHROME	200°	1/2"	5.6	13	13	13	13	52
	TOTAL						206	205	199	188	798