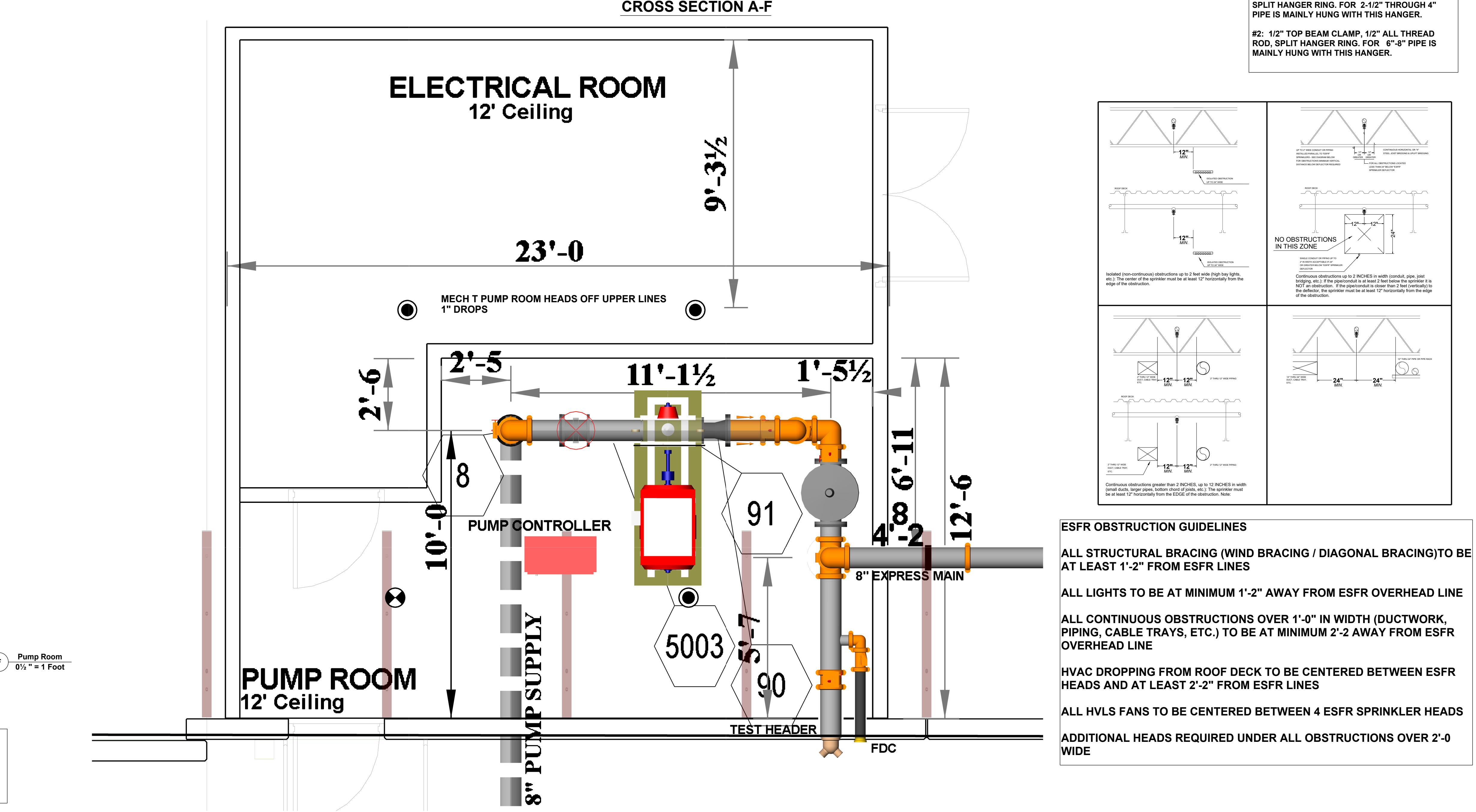
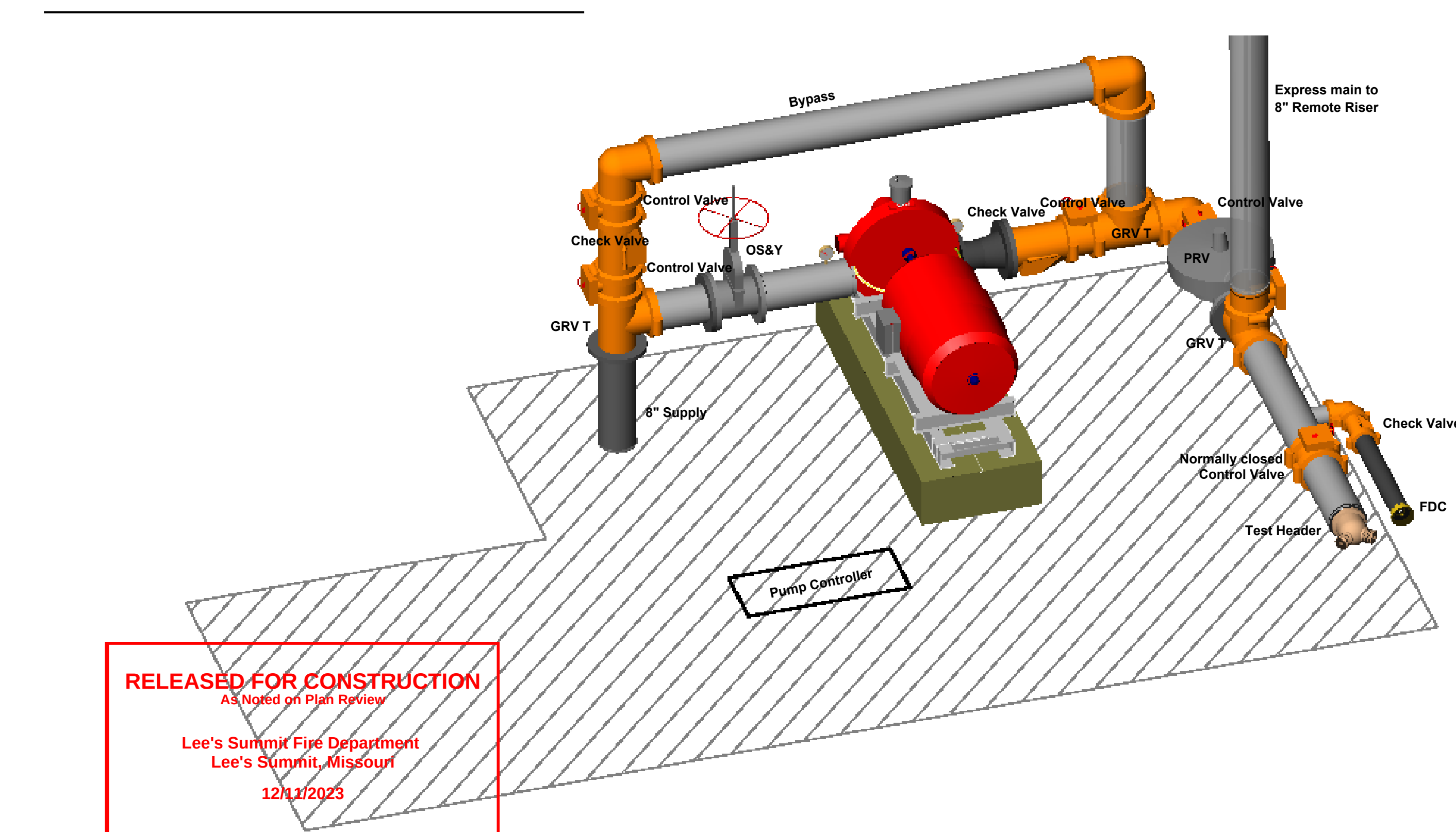
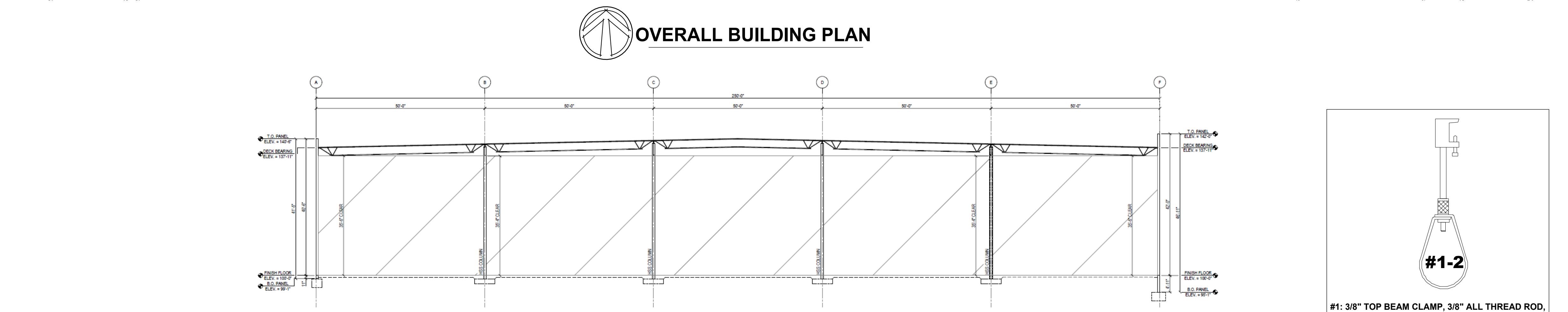
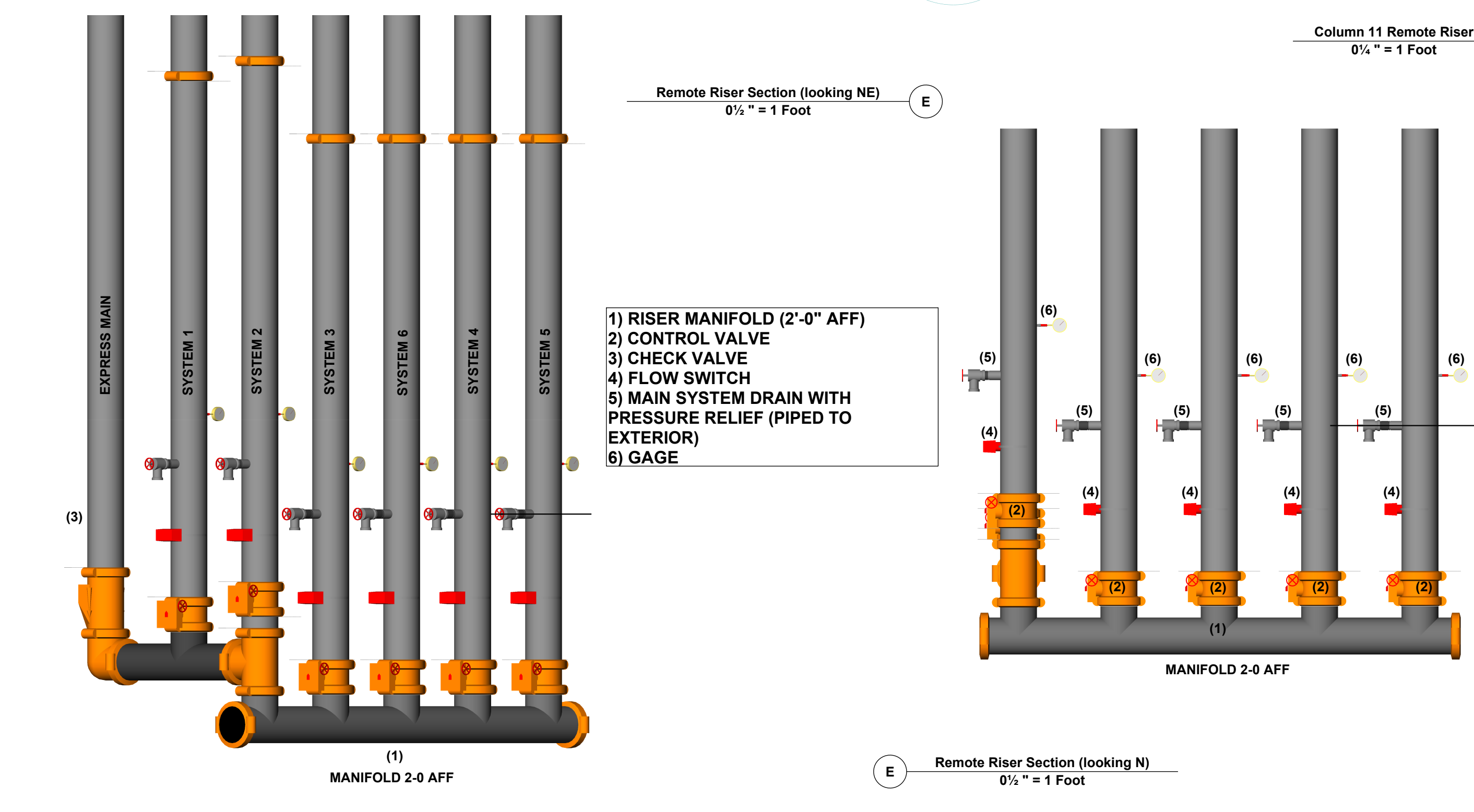
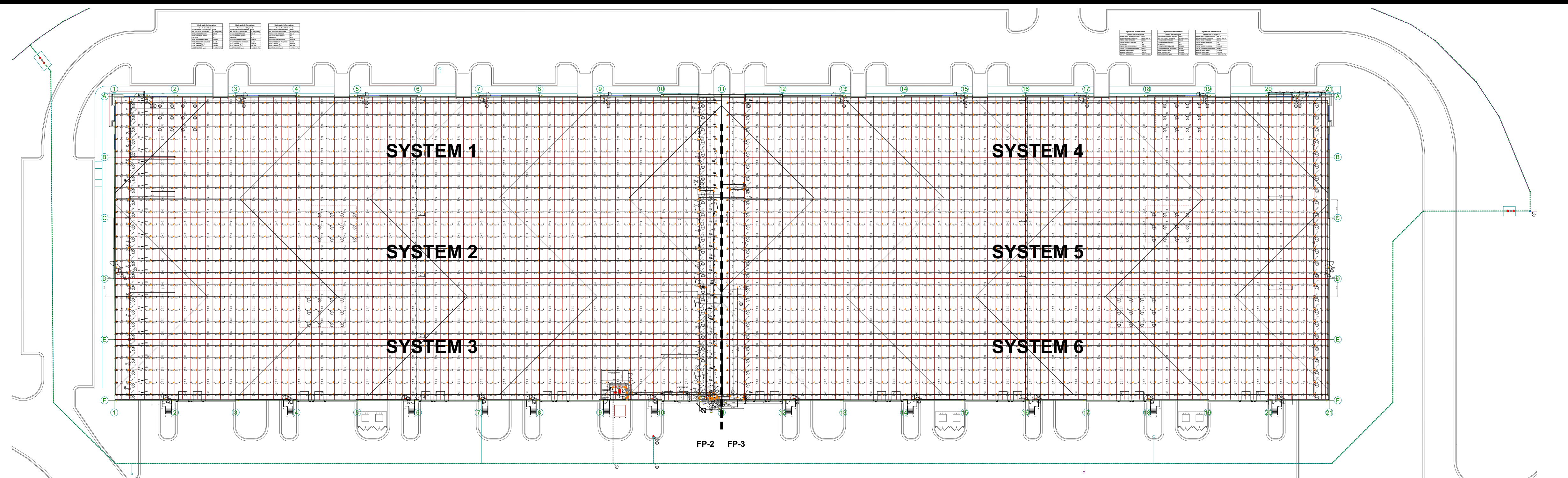
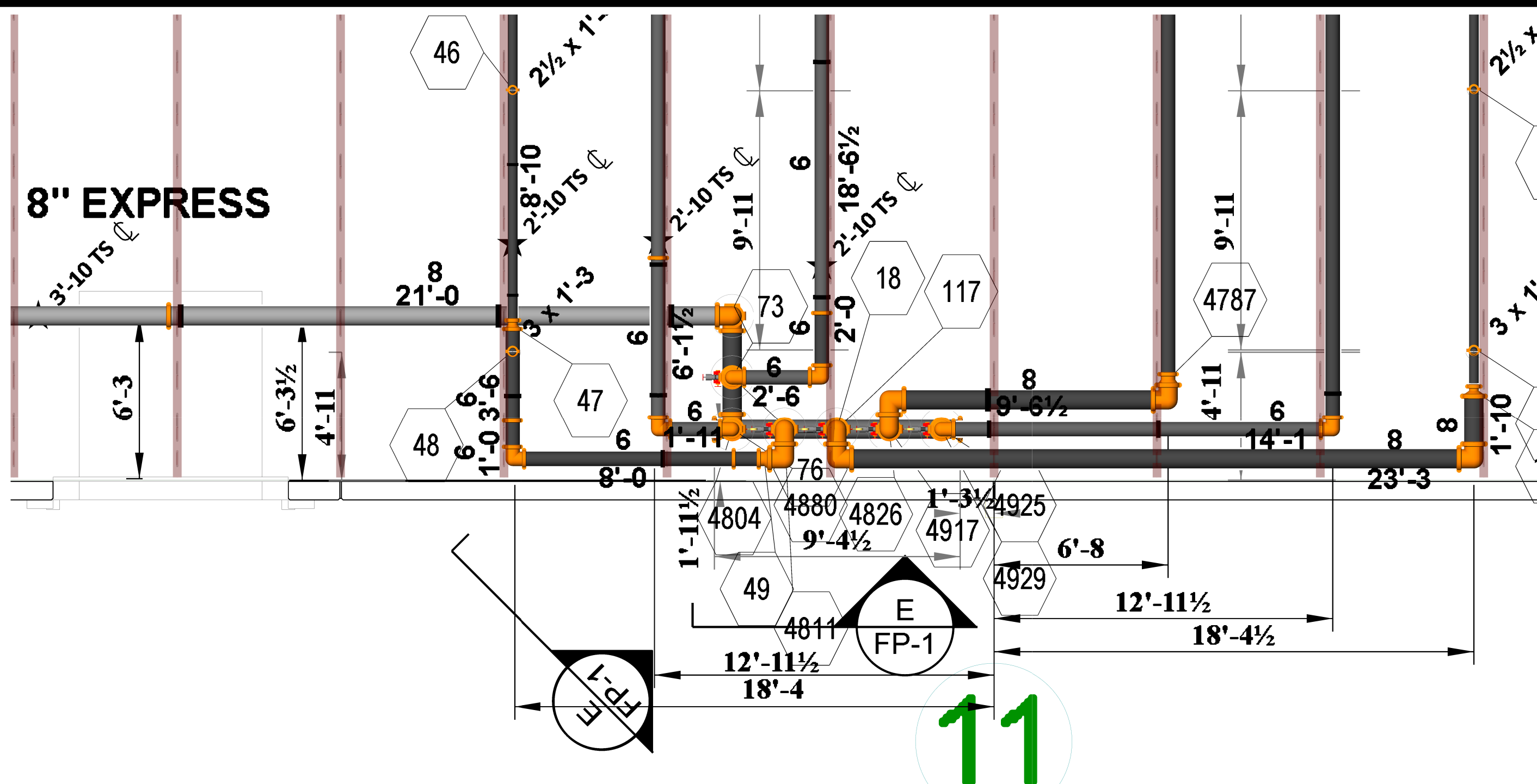




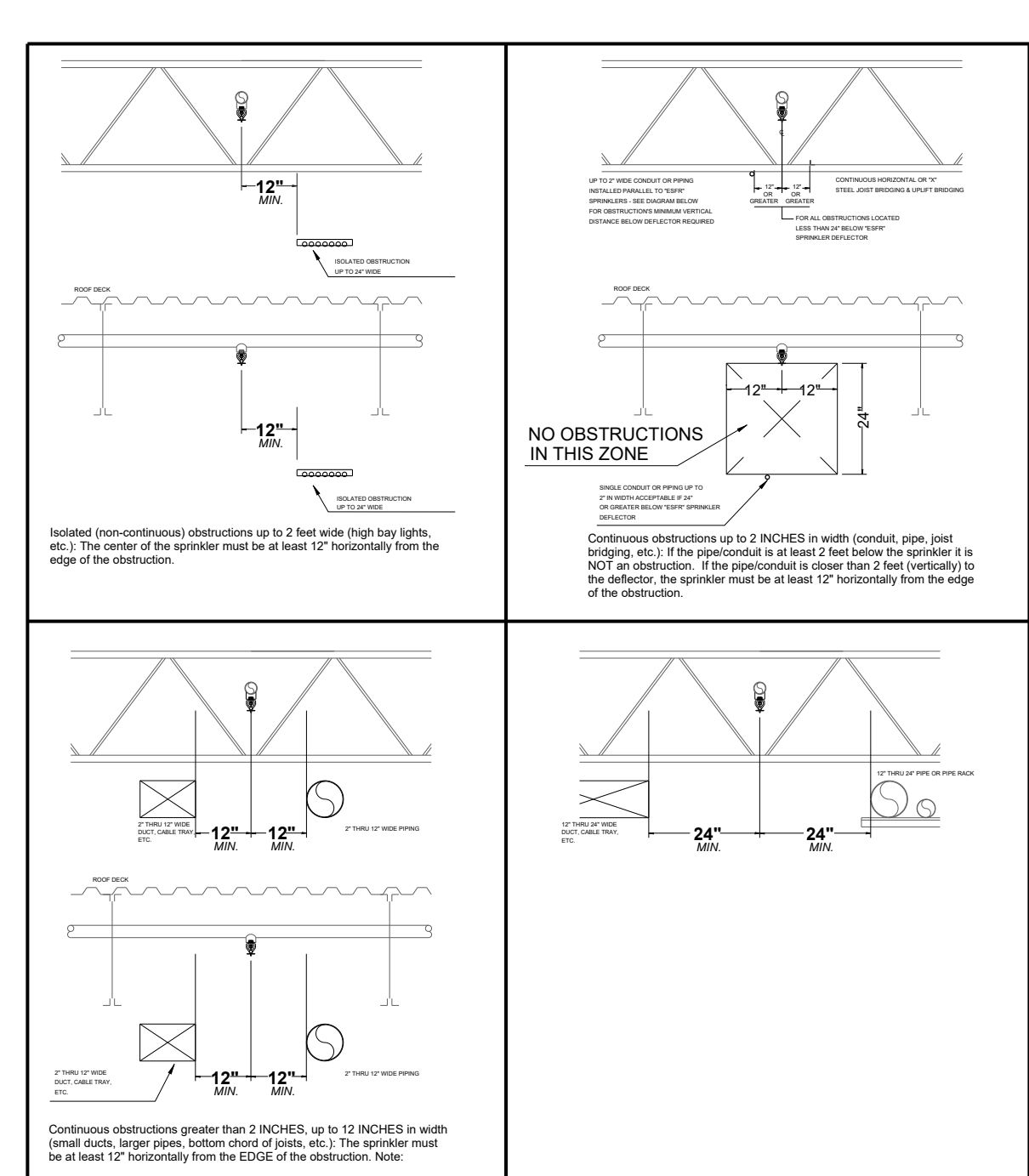
RELEASED FOR CONSTRUCTION
As Noted on Plan Review
Lee's Summit Fire Department
Lee's Summit, Missouri
12/11/2023

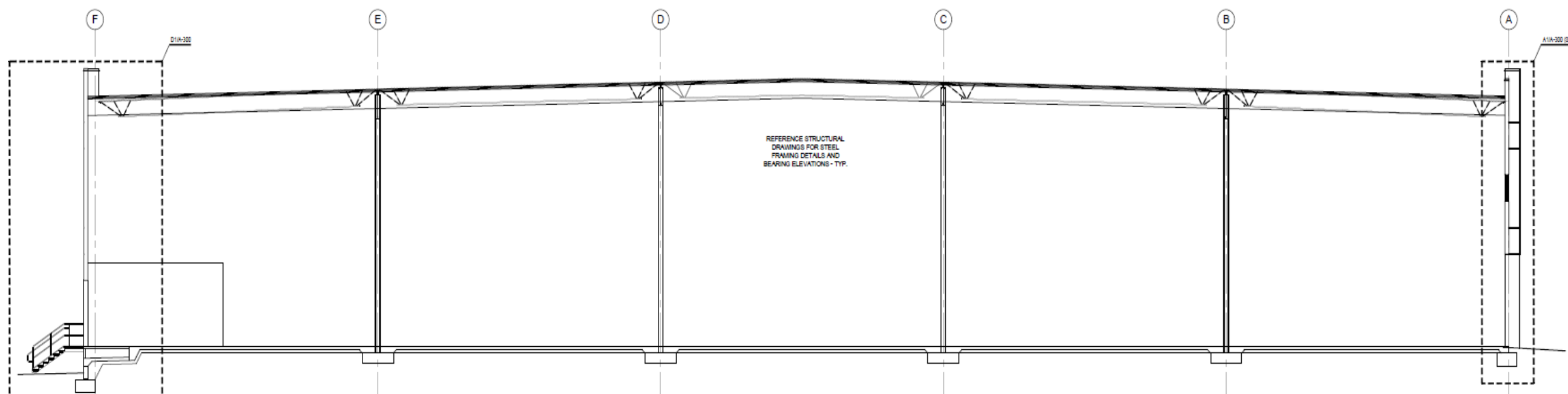
FIRE PROTECTION PLAN:
Under 40' K16.8 ESFR 12 at 52PSI
Over 40' K22.4 ESFR 12 at 40PSI
Based on NFPA 13 2016 and specific application UL Listing.
For protection of rack storage of commodities class 1 to 4 and cartoned, unexpanded plastics or lesser hazards.
For areas with roof deck under 40' - 12 heads discharging at 52 psi.
For areas with roof deck over 40' - 12 heads discharging at 40 psi.
250gpm hose stream allowance.

PUMP ROOM LAYOUT
PUMP COMPONENTS 8"

LOCATION:
NE TOWN CENTER BLVD &
NE INDEPENDENCE AVE
COMPLETED BY CITY OF
LEE'S SUMMIT

LINE PIPING TO BE 0-7" CENTERLINE FROM TOS
8" MAIN PIPING TO BE 2-10" CENTERLINE FROM TOS
LINE PIPE TO BE SCH 7 2-1/2 - 3"
MAIN PIPING TO BE SCH10 4-8"





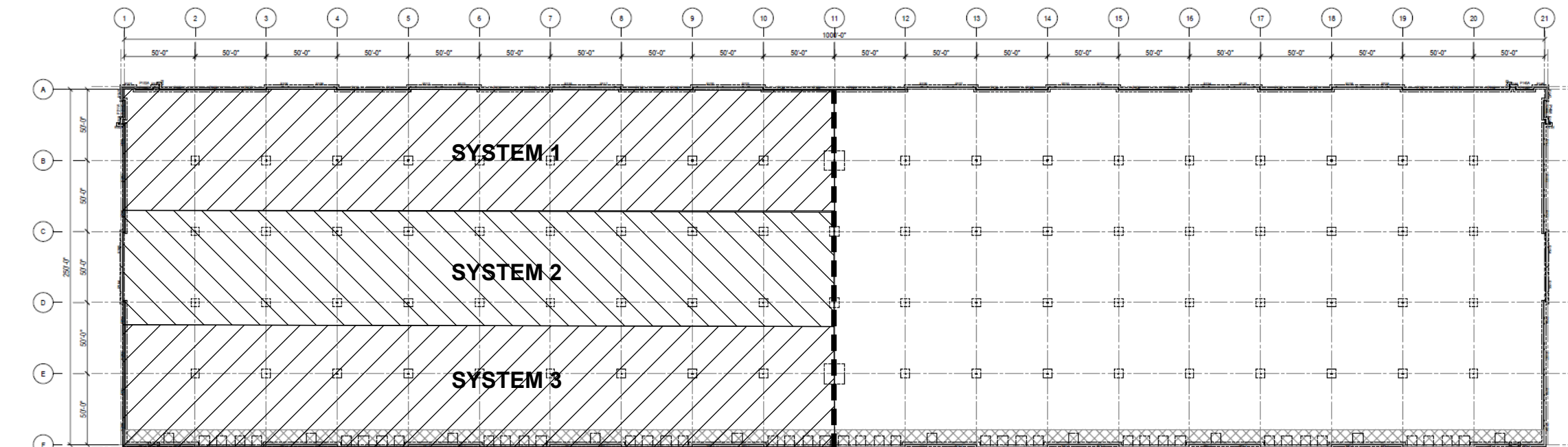
CROSS SECTION A-F

LINE PIPING TO BE 0-8" CENTERLINE FROM TOS
MAIN PIPING TO BE 2-10" CENTERLINE FROM TOS

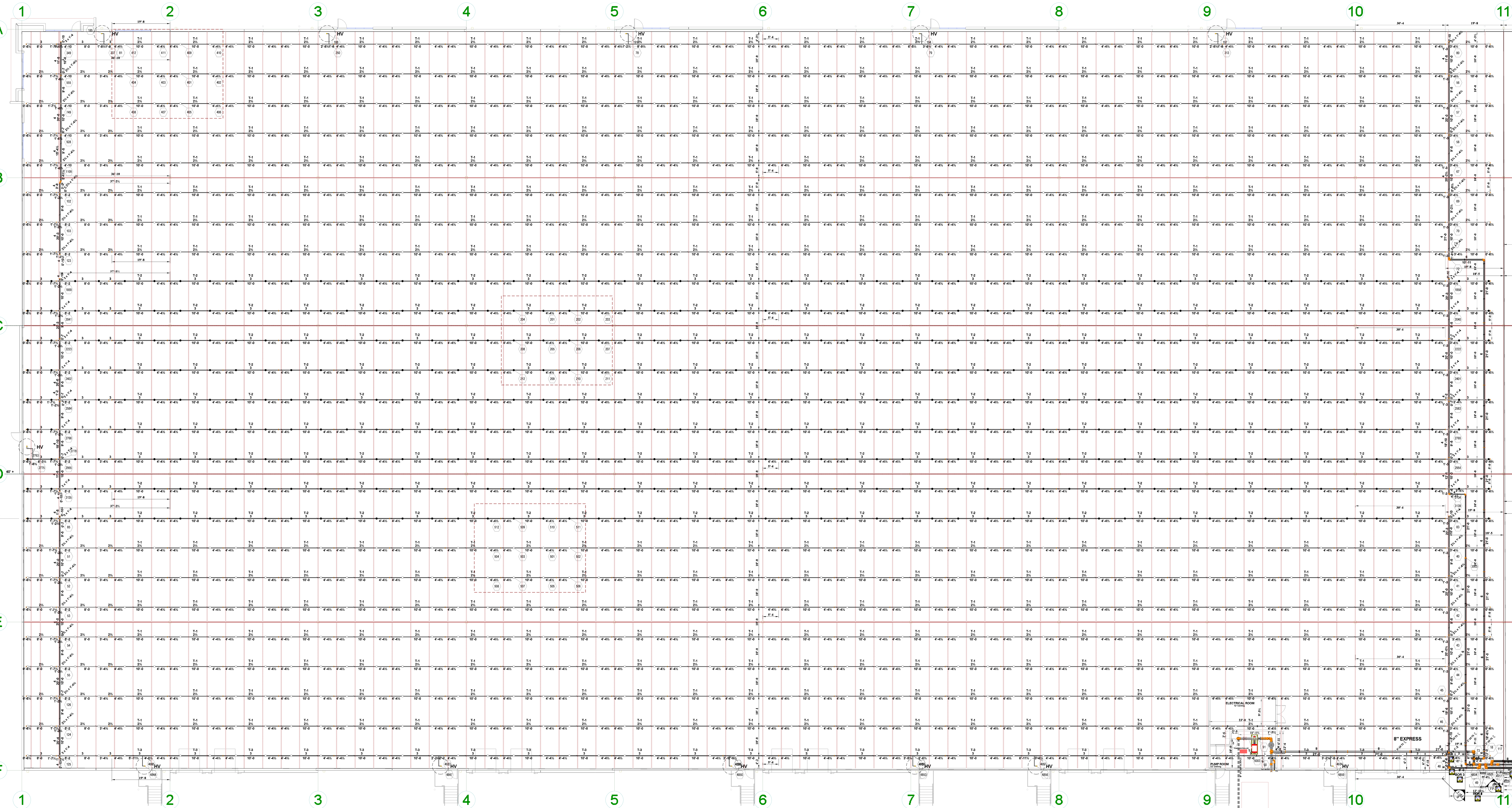
Hydraulic Information	
Remote Area NW System 1	
OCCUPANCY CLASSIFICATION	ESFR
MIN. END HEAD PRESSURE	52.000 (ESFR)
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	12
K-FACTOR	16.8
TOTAL WATER REQUIRED	1716.05
TOTAL PRESSURE REQUIRED	46.040
BASE OF RISER (gpm)	1568.05
BASE OF RISER (psi)	142.222
SAFETY MARGIN (psi)	+9.397 (17.0%)

Hydraulic Information	
Remote Area W System 2	
OCCUPANCY CLASSIFICATION	ESFR
MIN. END HEAD PRESSURE	40.000 (ESFR)
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	12
K-FACTOR	22.4
TOTAL WATER REQUIRED	1955.40
TOTAL PRESSURE REQUIRED	41.931
BASE OF RISER (gpm)	1755.40
BASE OF RISER (psi)	129.126
SAFETY MARGIN (psi)	+6.322 (13.1%)

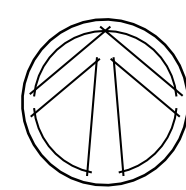
Hydraulic Information	
Remote Area SW System 3	
OCCUPANCY CLASSIFICATION	ESFR
MIN. END HEAD PRESSURE	52.000 (ESFR)
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	12
K-FACTOR	16.8
TOTAL WATER REQUIRED	1919.19
TOTAL PRESSURE REQUIRED	43.637
BASE OF RISER (gpm)	1769.19
BASE OF RISER (psi)	129.098
SAFETY MARGIN (psi)	+5.763 (11.7%)



FP-1 FP-2
KEY PLAN
-NOT TO SCALE-

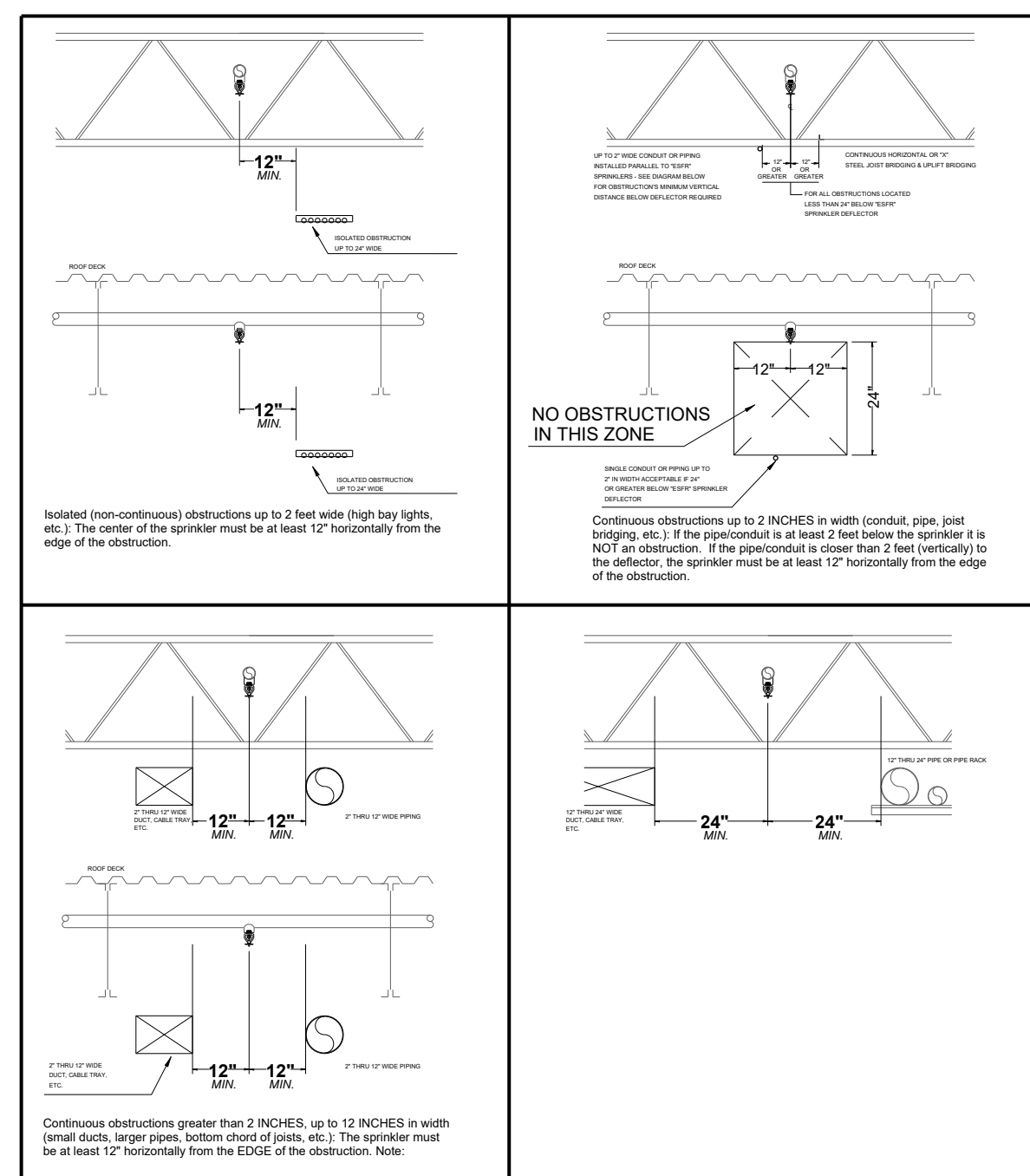


West Systems (1-3)
0-1/16" = 1 Foot



LINE PIPING TO BE 0-8" CENTERLINE FROM TOS
8" MAIN PIPING TO BE 2-10" CENTERLINE FROM TOS
LINE PIPE TO BE SCH 7 2-1/2" - 3"
MAIN PIPING TO BE SCH10 6-8" SCH 7 4"

FIRE PROTECTION PLAN:
Under 40' K16.8 ESFR 12 at 52PSI
Over 40' K22.4 ESFR 12 at 40PSI
Based on NFPA 13 2016 and specific application UL Listing.
For protection of rack storage of commodities class 1 to 4 and cartoned, unexpanded plastics or lesser hazards.
For areas with roof deck under 40' - 12 heads discharging at 52 psi.
For areas with roof deck over 40' - 12 heads discharging at 40 psi.
250gpm hose stream allowance.
Hose valves placed at each door.

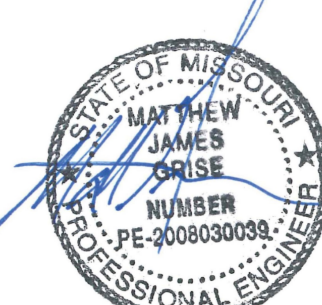


ESFR OBSTRUCTION GUIDELINES

- ALL STRUCTURAL BRACING (WIND BRACING / DIAGONAL BRACING) TO BE AT LEAST 1'-2" FROM ESFR LINES
- ALL LIGHTS TO BE AT MINIMUM 1'-2" AWAY FROM ESFR OVERHEAD LINE
- ALL CONTINUOUS OBSTRUCTIONS OVER 1'-0" IN WIDTH (DUCTWORK, PIPING, CABLE TRAYS, ETC.) TO BE AT MINIMUM 2'-2" AWAY FROM ESFR OVERHEAD LINE
- HVAC DROPPING FROM ROOF DECK TO BE CENTERED BETWEEN ESFR HEADS AND AT LEAST 2'-2" FROM ESFR LINES
- ALL HVLS FANS TO BE CENTERED BETWEEN 4 ESFR SPRINKLER HEADS
- ADDITIONAL HEADS REQUIRED UNDER ALL OBSTRUCTIONS OVER 2'-0" WIDE

SEA-

11-16-23



Sprinkler Legend											
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
●	Viking	VK506	ESFR	486	22.4	Pendent	1	Quick	Brass	165 °F	
○	Viking	VK503	ESFR	108	16.8	Pendent	1/2	Quick	Brass	165 °F	
●	Viking	VK534	EC/QREC	3	11.2	Pendent	1/2	Quick	Chrome	175 °F	EC 20 X 20 Pump/Elec Pump Room
●	Viking	VK3021		4	5.6	Pendent	1/2	Quick	Chrome	175 °F	
○	Viking	VK503	ESFR	756	16.8	Pendent	1/2	Quick	Brass	165 °F	
				Total = 1354							

1. FIRE SPRINKLER DESIGN PER NFPA 13 2016 EDITION.
2. OWNER SHALL MAINTAIN SYSTEM PER NFPA 25.
3. ALL MATERIALS USED SHALL COMPLY WITH SPECIFIED REQUIREMENTS.
4. CONTINUOUS CENTRAL MONITORING OF ALARM COMPONENTS PER NFPA 72 SHALL BE BY OTHERS.
5. ALL ALARM AND ELECTRICAL WORK ASSOCIATED WITH INSTALLED COMPONENTS SHALL BE BY OTHERS.
6. ALL UNDERGROUND WORK BY OTHERS. FIRE LINE SHALL BE FLUSHED PER NFPA 24 REQUIREMENTS OVER AND ABOVE LOCAL WATER JURISDICTION REQUIREMENTS. NFPA TEST PAPERS FILLED OUT AND SIGNED BY INSTALLER SHALL BE SUBMITTED TO GENERAL CONTRACTOR PRIOR TO THE ABOVEGROUND SYSTEM BEING PUT INTO SERVICE.
7. ANY PAINTING OF PIPE BY OTHERS.
8. CONDITIONING OF BUILDING ENVELOPE TO PREVENT WATER FREEZING IN PIPES SHALL BE BY OTHERS BEFORE AND AFTER OCCUPANCY.
9. ANY LABELING OF PIPE BY OTHERS.
10. 6" & 8" PIPE WITH GROOVED ENDS SHOULD BE SCHEDULE 10. 4"-1 1/2" SHOULD BE SCHEDULE 7 EDDY FLOW.
11. PIPE WITH THREADED ENDS SHALL BE SCHEDULE 40.

REVISIONS:



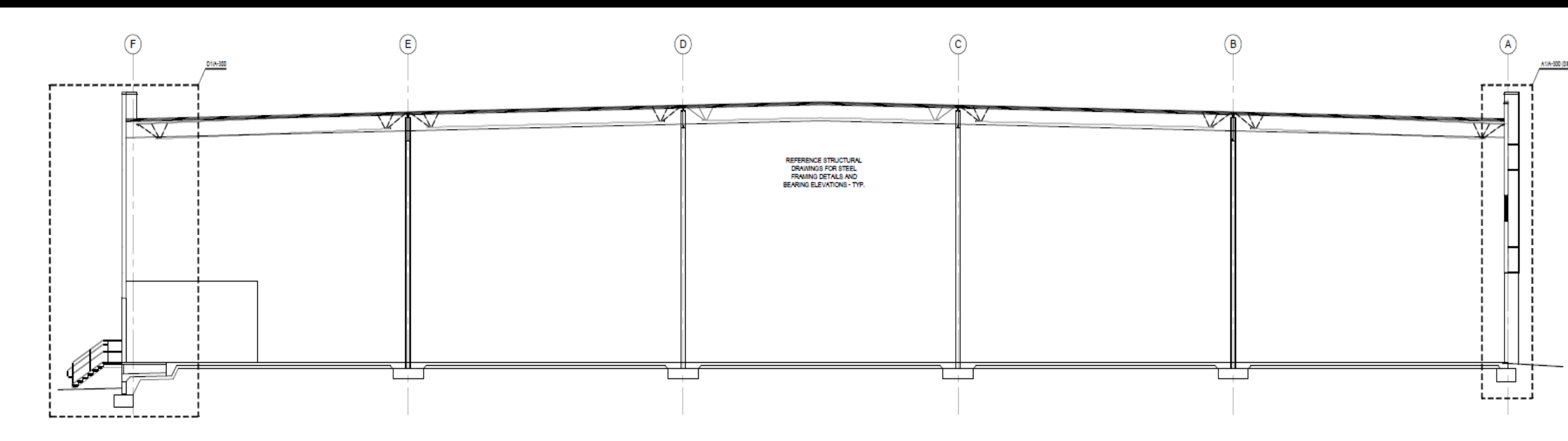
SCALE: 1/16" = 1'



PLOT DATE: 11/17/23 FILE NAME: Town Center 22 draw

DRAWN BY: DB
DATE: 11-16-23
JOB #: NC 1403
SHEET NO: 2 OF 3

JOB NAME:
Town Center 22
NE Town Center Blvd, Lee's Summit MO 64064
CONTRACTOR:
Fogel-Anderson
1212 E 8th St, Kansas City, MO 64106



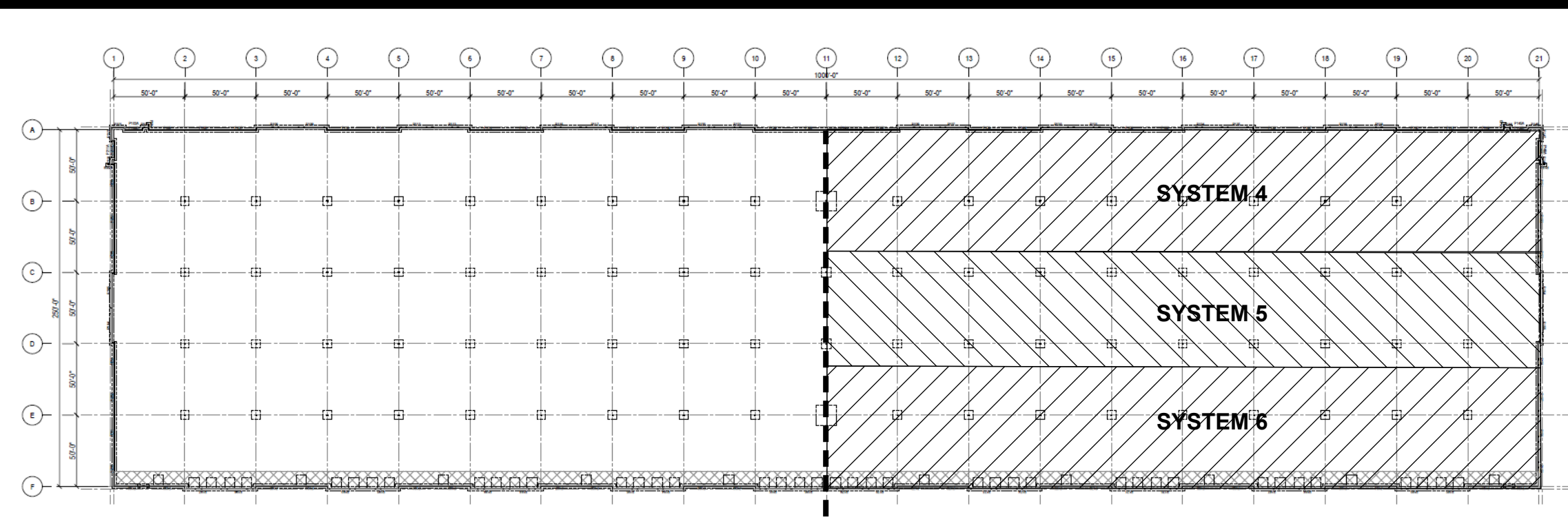
CROSS SECTION A-F

LINE PIPING TO BE 0-8" CENTERLINE FROM TOS
MAIN PIPING TO BE 2-10" CENTERLINE FROM TOS

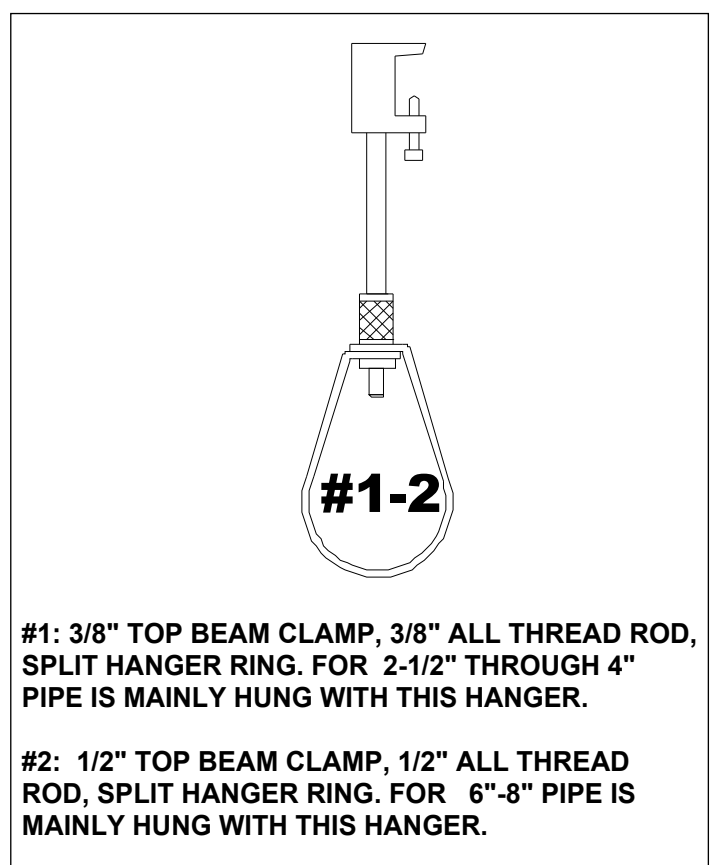
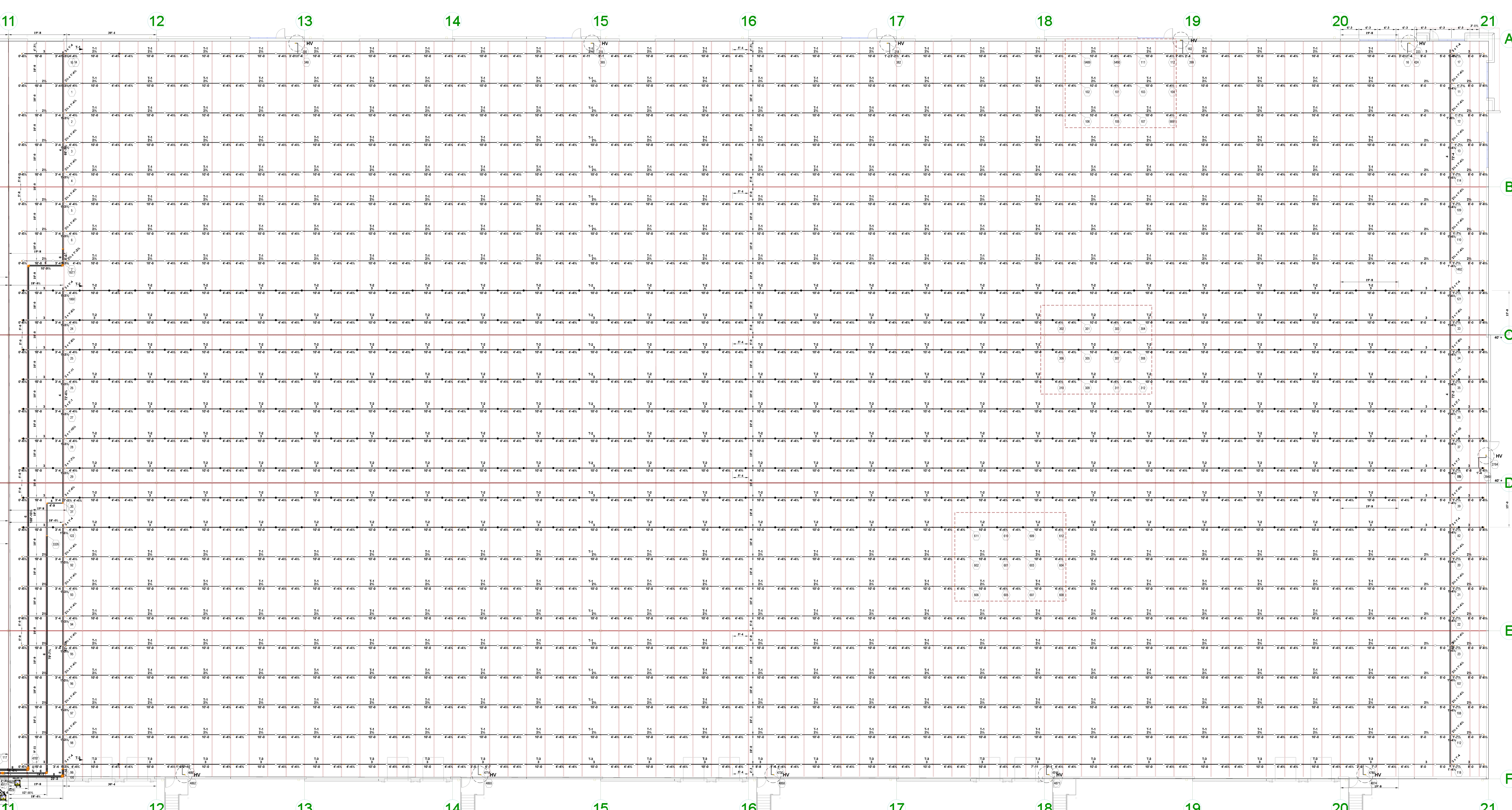
Hydraulic Information	
Remote Area NE System 4	
OCCUPANCY CLASSIFICATION	ESFR
MIN. END HEAD PRESSURE	50.000 (ESFR)
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	12
K-FACTOR	16.8
TOTAL WATER REQUIRED	1723.23
TOTAL PRESSURE REQUIRED	48.971
BASE OF RISER (gpm)	1573.23
BASE OF RISER (psi)	143.716
SAFETY MARGIN (psi)	+6.318 (11.4%)

Hydraulic Information	
Remote Area E System 5	
OCCUPANCY CLASSIFICATION	ESFR
MIN. END HEAD PRESSURE	50.000 (ESFR)
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	12
K-FACTOR	22.4
TOTAL WATER REQUIRED	1954.65
TOTAL PRESSURE REQUIRED	39.674
BASE OF RISER (gpm)	1764.65
BASE OF RISER (psi)	125.346
SAFETY MARGIN (psi)	+8.603 (17.8%)

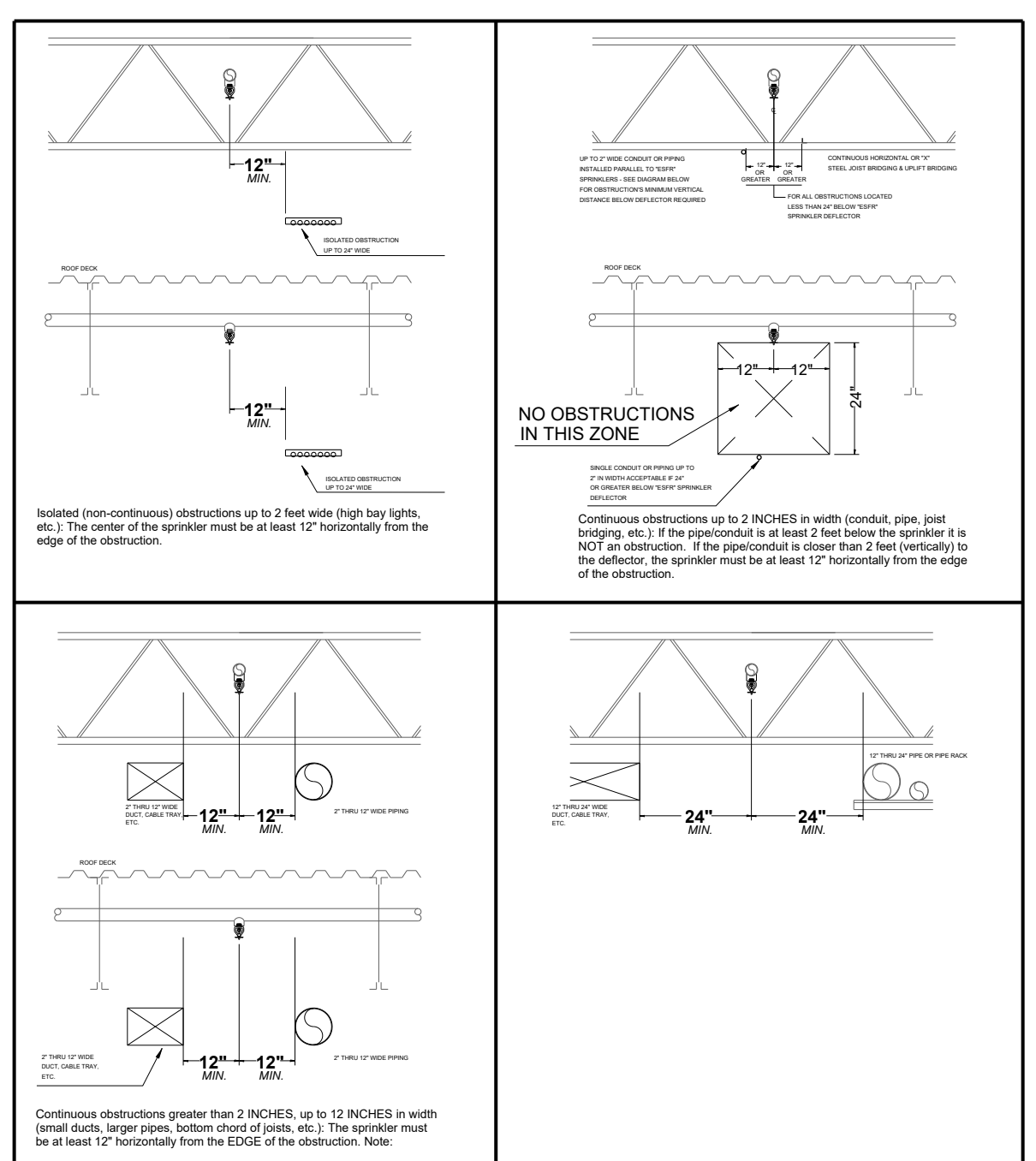
Hydraulic Information	
Remote Area SE System 6	
OCCUPANCY CLASSIFICATION	ESFR
MIN. END HEAD PRESSURE	50.000 (ESFR)
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	12
K-FACTOR	16.8
TOTAL WATER REQUIRED	1916.63
TOTAL PRESSURE REQUIRED	43.613
BASE OF RISER (gpm)	1768.63
BASE OF RISER (psi)	129.058
SAFETY MARGIN (psi)	+5.804 (11.7%)



FP-1 FP-2
KEY PLAN
- NOT TO SCALE -



#1: 3/8" TOP BEAM CLAMP, 3/8" ALL THREAD ROD, SPLIT HANGER RING, FOR 2-1/2" THROUGH 4" PIPE IS MAINLY HUNG WITH THIS HANGER.
#2: 1/2" TOP BEAM CLAMP, 1/2" ALL THREAD ROD, SPLIT HANGER RING, FOR 6"-8" PIPE IS MAINLY HUNG WITH THIS HANGER.



ESFR OBSTRUCTION GUIDELINES
ALL STRUCTURAL BRACING (WIND BRACING / DIAGONAL BRACING) TO BE AT LEAST 1'-2" FROM ESFR LINES
ALL LIGHTS TO BE AT MINIMUM 1'-2" AWAY FROM ESFR OVERHEAD LINE
ALL CONTINUOUS OBSTRUCTIONS OVER 1'-0" IN WIDTH (DUCTWORK, PIPING, CABLE TRAYS, ETC.) TO BE AT MINIMUM 2'-2" AWAY FROM ESFR OVERHEAD LINE
HVAC DROPPING FROM ROOF DECK TO BE CENTERED BETWEEN ESFR HEADS AND AT LEAST 2'-2" FROM ESFR LINES
ALL HVLS FANS TO BE CENTERED BETWEEN 4 ESFR SPRINKLER HEADS
ADDITIONAL HEADS REQUIRED UNDER ALL OBSTRUCTIONS OVER 2'-0" WIDE

FIRE PROTECTION PLAN:
Under 40' K16.8 ESFR 12 at 52PSI
Over 40' K22.4 ESFR 12 at 40PSI
Based on NFPA 13 2016 and specific application UL Listing.
For protection of rack storage of commodities class 1 to 4 and cartoned, unexpanded plastics or lesser hazards.
For areas with roof deck under 40' - 12 heads discharging at 52 psi.
For areas with roof deck over 40' - 12 heads discharging at 40 psi.
250gpm hose stream allowance.
Hose valves placed at each door.



Sprinkler Legend									
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish
●	Viking	VK506	ESFR	486	22.4	Pendent	1	Quick	Brass
○	Viking	VK503	ESFR	58	16.8	Pendent	1/4	Quick	Brass
○	Viking	VK503	ESFR	806	16.8	Pendent	1/4	Quick	Brass
Total = 1350									

1. FIRE SPRINKLER DESIGN PER NFPA 13 2016 EDITION.
2. OWNER SHALL MAINTAIN SYSTEM PER NFPA 25.
3. ALL MATERIALS USED SHALL COMPLY WITH SPECIFIED REQUIREMENTS.
4. CONTINUOUS CENTRAL MONITORING OF ALARM COMPONENTS PER NFPA 72 SHALL BE BY OTHERS.
5. ALL ALARM AND ELECTRICAL WORK ASSOCIATED WITH INSTALLED COMPONENTS SHALL BE BY OTHERS.
6. ALL UNDERGROUND WORK BY OTHERS. FIRE LINE SHALL BE FLUSHED PER NFPA 24 REQUIREMENTS OVER AND ABOVE LOCAL WATER JURISDICTION REQUIREMENTS. NFPA TEST PAPERS FILLED OUT AND SIGNED BY INSTALLER SHALL BE SUBMITTED TO GENERAL CONTRACTOR PRIOR TO THE ABOVEGROUND SYSTEM BEING PUT INTO SERVICE.
7. ANY PAINTING OF PIPE BY OTHERS.
8. CONDITIONING OF BUILDING ENVELOPE TO PREVENT WATER FREEZING IN PIPES SHALL BE BY OTHERS BEFORE AND AFTER OCCUPANCY.
9. ANY LABELING OF PIPE BY OTHERS.
10. 6" & 8" PIPE WITH GROOVED ENDS SHOULD BE SCHEDULE 10. 4" - 1 1/2" SHOULD BE SCHEDULE 7 EDDY FLOW.
11. PIPE WITH THREADED ENDS SHALL BE SCHEDULE 40.

REVISIONS:
SCALE: 1/16" = 1'



JOB NAME:
Town Center 22
NE Town Center Blvd, Lee's Summit MO 64064
DRAWN BY: DB
DATE: 11-16-23
JOB #: NC 1403
SHEET NO: 3 OF 3
CONTRACTOR: Fogel-Anderson
1212 E 8th St, Kansas City, MO 64106