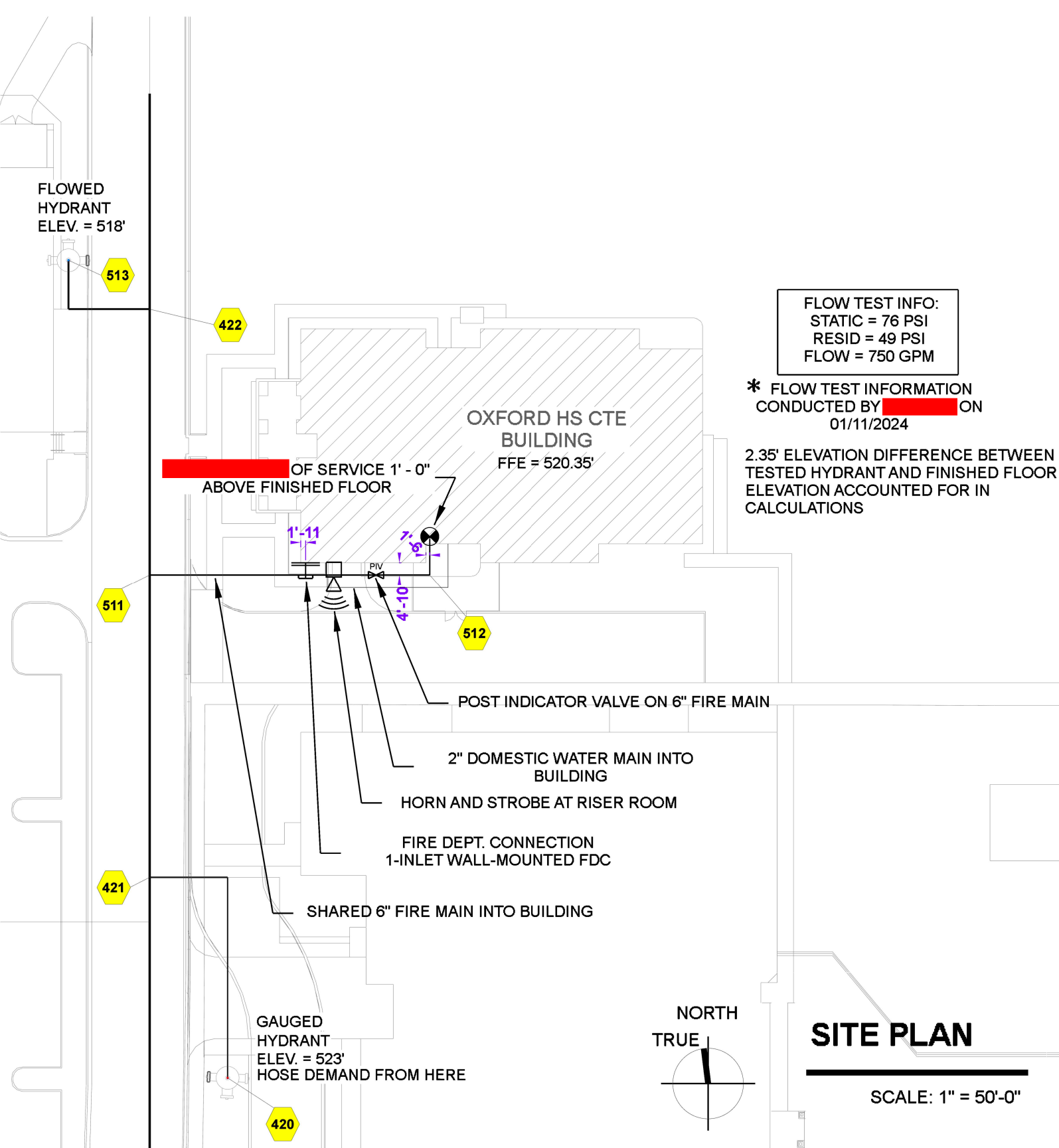
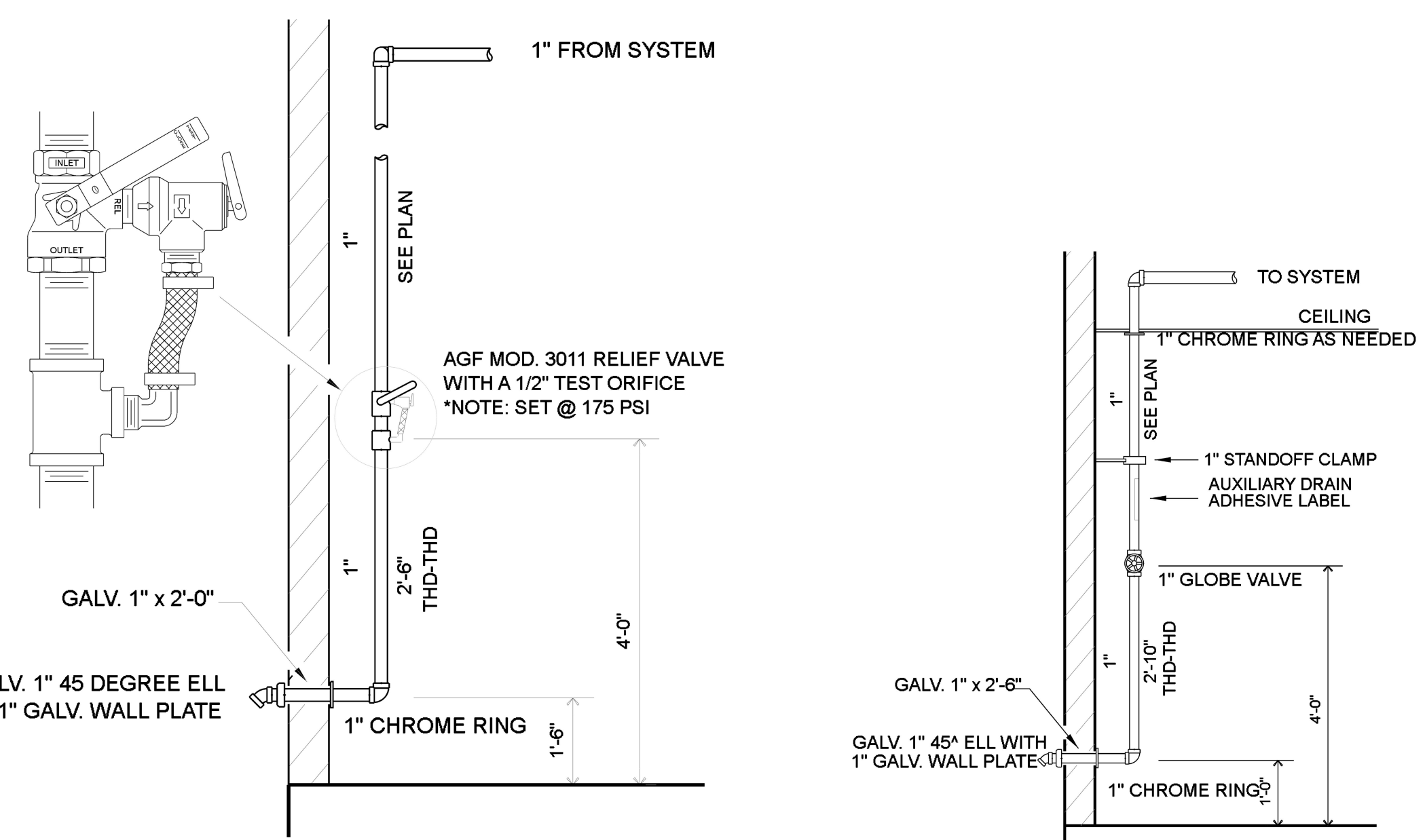




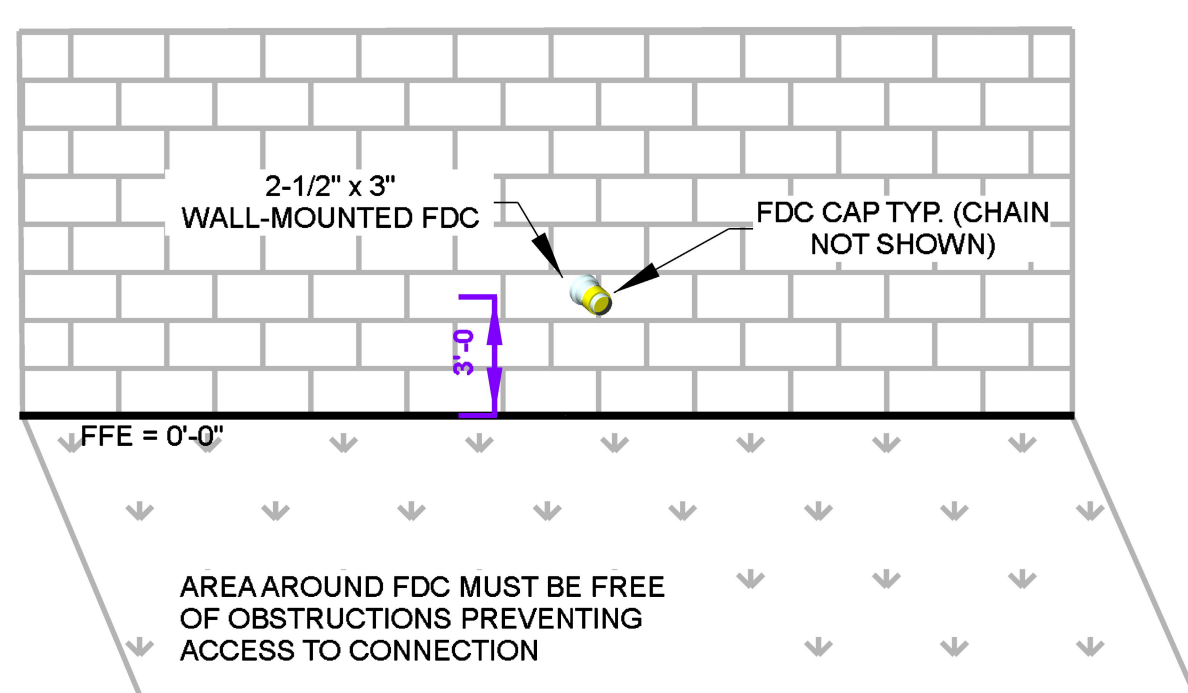
The diagram illustrates three different hanger rod configurations for lighting fixtures:

- Hanger No. 01S (Top Beam C-Clamp):** This configuration uses a steel I-beam or bar joist. A Model 300 Michigan Top Beam C-Clamp is attached to the beam. An all-thread rod passes through the clamp, a swivel ring, and a pipe. The rod is secured with a lock nut and retaining strap.
- Hanger No. 18S (Steel Sammy Sideroller And Rod):** This configuration uses a steel structure (Sammy Sideroller) instead of a top beam clamp. It also features an all-thread rod, swivel ring, and pipe.
- Flexible Drop Hanger:** This configuration is a flexible drop hanger with a maximum of 4 bends. It includes a branchline, a concealed pendant, and is suspended from a ceiling. The appropriate equivalent length is applied in calculations.

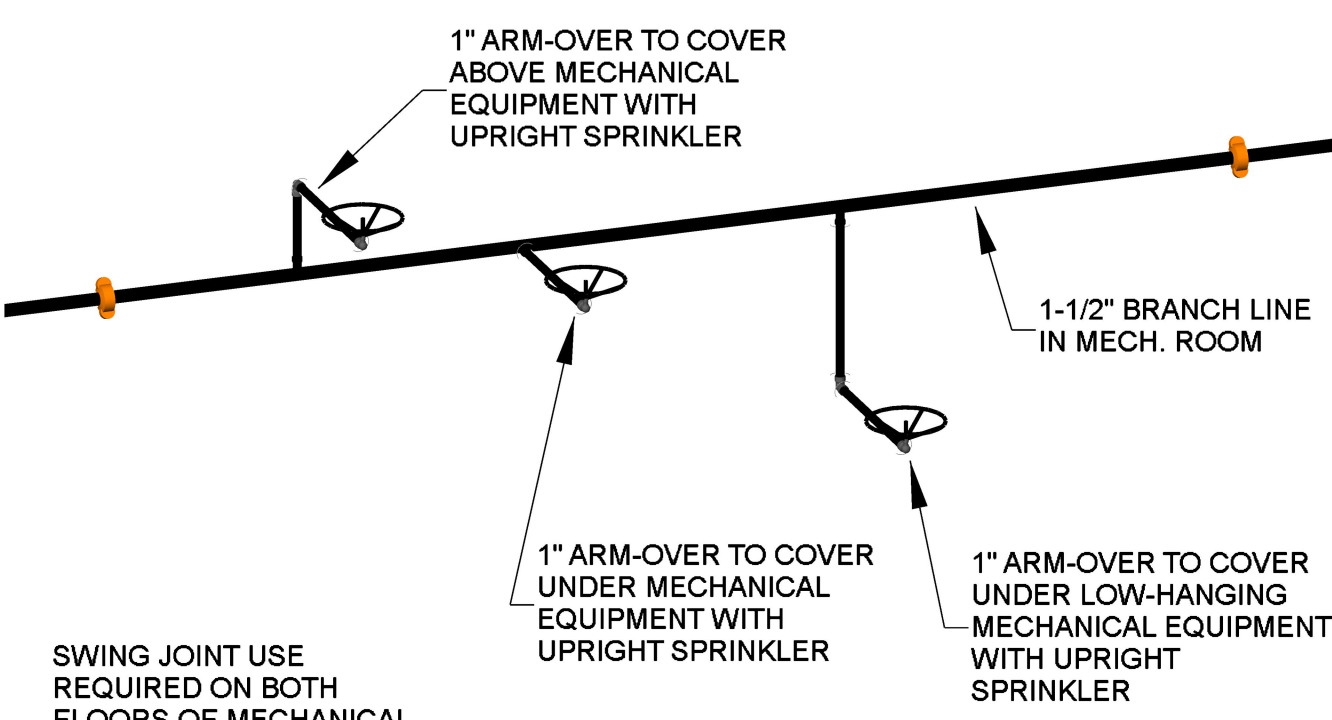
MAXIMUM DISTANCE BETWEEN HANGERS (FT.-IN.)										
	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"
STEEL PIPE EXCEPT THREADED LIGHTWALL	NA	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADED LIGHTWALL STEEL PIPE	NA	12-0	12-0	12-0	12-0	NA	NA	NA	NA	NA



AUXILIARY DRAIN DETAIL



SWING JOINT DETAIL



	SEE LATERAL SWAY BRACE DETAIL		INDICATES BRACE NUMBER. SEE CORRESPONDING BRACE NUMBER IN SEISMIC CALCULATIONS
	LONGITUDINAL SWAY BRACE SEE LONGITUDINAL SWAY BRACE DETAIL		INDICATES 4-WAY BRACE
	BRANCHLINE RESTRAINT - SEE DETAIL		

SWAY BRACES SHALL BE INSTALLED PER NFPA 13 AND UFG CODES. SEE PLAN FOR LOCATION.
FOR BRACES USE 1" SCH 40 PIPING ATTACHED TO BUILDING STRUCTURE AT 45 DEG MIN ANGLE FROM VERTICAL.
4-WAY BRACES SHALL BE INSTALLED AT ALL VERTICAL VALVE RISERS. SEE RISER DETAIL.
END OF LINE RESTRAINTS SHALL BE INSTALLED NO MORE THAN 49° C. ON LONG LINES (AS SHOWN)
END OF LINE RESTRAINTS SHALL BE INSTALLED AT END OF ALL LINES
INSTALL STRUTS CLIPS AT ALL RESTRAINT LOCATIONS OR RUN ROD DOWN TO TOUCH PIPE
REFER TO SIMILAR CALCULATIONS FOR BRACING OF ALL MATERIALS.
INSTALL BEAM CLAMP RETAINING STRAPS AT ALL HANGERS UTILIZING TOP BEAM CLAMPS.
FLEXIBLE COUPLINGS SHALL BE INSTALLED AT TOP OF ALL VALVE RISERS.

1. INTERNATIONAL BUILDING CODE (2018)
1.1 OCCUPANCY: TYPE E
1.2 TYPE OF CONSTRUCTION: II-B
1.3 SPRINKLER AREAS (APPROXIMATE - SEE ARCHITECTURAL PLANS FOR ACTUAL)
FIRST FLOOR ~ 11,840 S.F.
SECOND FLOOR ~ 11,840 S.F.
BUILDING 3'S RENOVATION ~ 4,400 S.F.
1.4 DESIGN & INSTALLATION STANDARDS: NFPA-13 (2019) PER MISSISSIPPI STATE FIRE MARSHAL'S OFFICE

2. SPRINKLER PIPE TYPES:
WET
2.1 1" PIPE TO BE SCHEDULE 40 BLACK STEEL W/ THREADED AND/OR IGSS FITTINGS
2.2 1-1/4" THROUGH 2" PIPE TO BE SCHEDULE 40 BLACK STEEL W/ GROOVED FITTINGS
2.3 2-1/2" THROUGH 4" MAINS & BRANCH LINES TO BE SCHEDULE 40 BLACK STEEL W/ GROOVED FITTINGS
2.4 MAINS & BRANCH LINES TO BE ROLL-GROOVED BLACK STEEL PIPE
2.5 2" & LARGER TO USE GROOVED SHORT RADIUS FITTINGS
2.6 ALL FLEX DROPS ARE TO BE 48" VITALLIC AH-CC BRAIDED HOSE WITH THE APPROPRIATELY SIZED OUTLET FOR THE ATTACHED SPRINKLER

3. DESIGN CRITERIA:
3.1 LIGHT HAZARD AREAS INCLUDE OFFICE/ADMINISTRATIVE ROOMS, RESTROOMS, CLASSROOMS, AND CORRIDORS
3.2 ORDINARY HAZARD GROUP I AREAS INCLUDE MECHANICAL ROOMS, ELECTRICAL ROOMS, AND STORAGE ROOMS WHERE FLARE PILES DO NOT EXCEED 6" IN HEIGHT
3.3 REMOTE AREA REDUCTIONS HAVE BEEN TAKEN WHERE APPLICABLE PER NFPA 13 SEC. 19.3.3.2.3

4. NOTES:
4.1 ALL MATERIAL IN NEW CONSTRUCTION TO BE NEW AND MEET U.L. STANDARDS
4.2 SPRINKLERS IN RENOVATED AREAS TO BE NEW AND MEET U.L. STANDARDS
4.3 HANGERS TO BE INSTALLED IN ACCORDANCE WITH NFPA 1 - SEE PLAN FOR HANGING REQUIREMENTS
4.4 MATCH EXISTING INTERIOR FINISH IN RENOVATED AREAS
4.5 IN SUSPENDED CEILINGS, ALL PENDENT AND CONCEALED PENDENT SPRINKLERS TO BE PLACED AT THE CENTER OF TILES

5. SYMBOLS USED ON DRAWINGS:
*x x F F PIPE ELEVATION ABOVE FINISH FLOOR
*x x T S PIPE ELEVATION BELOW TOP OF STEEL
ROOM HAZARD CLASSIFICATION (ALL ROOMS ARE CONSIDERED LIGHT HAZARD U.N.O.)
SMALL ROOMS RULE 10.2.5.2.3 OF NFPA 13 (2019) APPLIED
HYDRAULIC CALCULATION JUNCTION POINT
9'-0" CEILING HEIGHT
OPEN OPEN CEILING; PIPE AND MECHANICAL FIXTURES EXPOSED; CEILING DEFINED BY TOP OF STEEL
FIRE RATED WALL
WET BLACK STEEL PIPE
EXPOSED STRUCTURAL BEAM

6.1 INSTALL A COMPLETE TWO-ZONE WET FIRE SPRINKLER SYSTEM TO COVER ALL AREAS OF NEW CONSTRUCTION

6.2 INSTALL NEW SPRINKLER HEADS USING EXISTING SYSTEMS TO COVER ALL RENOVATED AREAS

6.3 ALL AREAS OF THE BUILDING TO BE INSTALLED AND COVERED IN ACCORDANCE WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PERMITS (IF ANY)

See Appendix A for alternate seismic brace attachments.
All seismic brace attachments manufactured by ASC Engineered Solutions.

* - denotes hardware shown with the bolt head or nut broken off, as per the product installation instructions
Net Vertical Reaction Forces do not need to be addressed per NFPA 13-2019.

See Appendix A for alternate seismic brace attachments.
All seismic brace attachments manufactured by ASC Engineered Solutions.

* - denotes hardware shown with the bolt head or nut broken off, as per the product installation instructions

See Appendix A for alternate seismic brace attachments.

SB-5 **SB-6**

Figure 1 consists of two diagrams. The left diagram is a side view showing a 'Service Pipe' being inserted into a hole in a wall. A 'Schedule 40 Brace Pipe' is shown supporting the service pipe from below. A label 'Fig. AP335' points to the service pipe. The right diagram is a top-down view showing the 'Service Pipe' and 'Brace Pipe' meeting at a junction. Arrows indicate the direction of flow or force.

SB-7 installation instructions
Net Vertical Reaction Forces do not need to be addressed per NFPA 13-2019.

PROVIDE CLEARANCE 2" LARGER THAN PENETRATING PIPE ON ALL PENETRATIONS THROUGH CONCRETE OR MASONRY PER NFPA 13 (2019) 18.4.2 PENETRATIONS MUST MAINTAIN FIRE RESISTANCE RATINGS OF THE PENETRATED WALL

SEISMIC BRANCH LINE RESTRAINT ($C_p=0.384$): 1" PIPE = 43'-0" MAX SPACING 1-1/4" PIPE = 46'-0" MAX SPACING	SEISMIC KEY: LATERAL BRACE
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SEISMIC DETAILS

SEISMIC DETAILS

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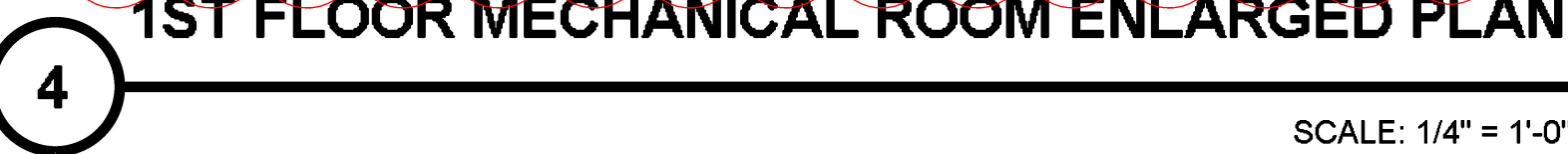
☐ PRE-BID SCHEMATIC
☐ BID SCHEMATIC
☒ INSTALLATION
☐ AS-BUILT

ECTE ADDITION TO OXFORD HIGH SCHOOL
101 CHARGER LOOP, OXFORD, MS 38655

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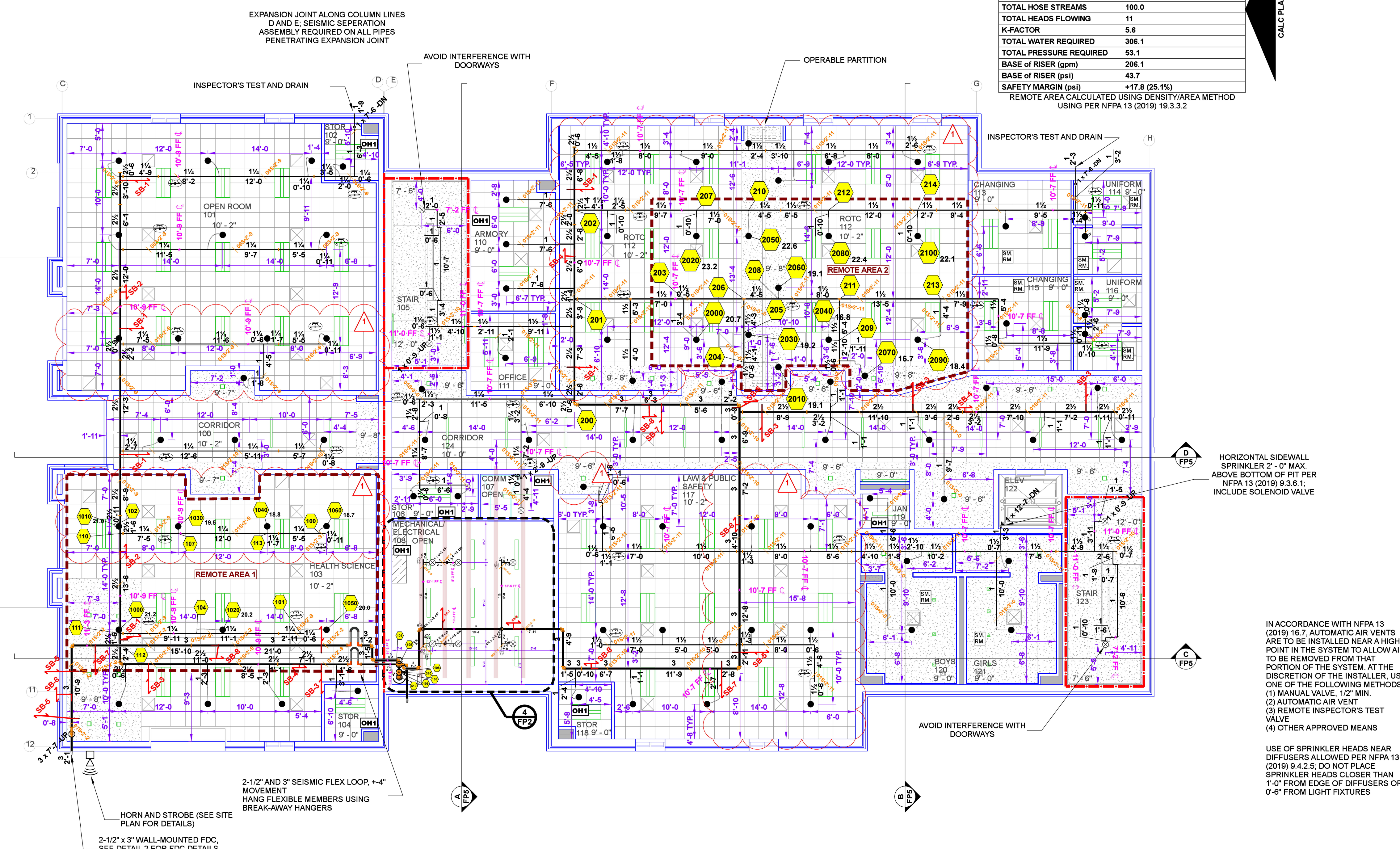
SHEET NUMBER

FP 1



Sprinkler Legend												
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	MAX. Spacing	Notes
●	Viking	VK4621		90	5.6	CONC. PENDENT	½	Quick	Brass	203°F	15' x 15'	WHITE PLATE
⊗	Viking	VK300	Microfast	11	5.6	UPRIGHT	½	Quick	Brass	200°F	15' x 15'	N/A
▶	Viking	VK305	Microfast	1	5.6	HORIZ. SIDEWALL	½	Quick	Brass	200°F	14' x 14'	N/A
				Total = 102								

Hydraulic Information	
Remote Area 2	
OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY (gpm/ft)	100.0 or 1800°F (Actual 1021°F)
QUICK RESPONSE REDUCTION	10°-2 Celling (38.8%) 9041"
TOTAL HOSE STREAMS	100.0
TOTAL HEADS FLOWING	11
K-FACTOR	5.6
TOTAL WATER REQUIRED	306.1
TOTAL PRESSURE REQUIRED	53.1
BASE OF RISER (gpm)	206.1
BASE OF RISER (psi)	43.7
SAFETY MARGIN (psi)	+17.8 (25.1%)
REMOTE AREA CALCULATED USING DENSITY/AREA METHOD (USING PER NFPA 13 (2019) 19.3.3.2	



Hydraulic Information	
Remote Area 1	
OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY (gpm/ft)	100' or 1500' (Actual 1077ft)
QUICK RESPONSE REDUCTION	10" 2' ceiling (39.9%) 904ft
TOTAL HOSE STREAMS	100.0
TOTAL HEADS FLOWING	7
K-FACTOR	5.6
TOTAL WATER REQUIRED	239.3
TOTAL PRESSURE REQUIRED	37.7
BASE OF RISER (gpm)	139.3
BASE OF RISER (psi)	28.6
SAFETY MARGIN (psi)	+35.0 (48.1%)
REMOTE AREA CALCULATED USING AREA METHOD USING NFPA 13 (2019) 19.3.3.2	

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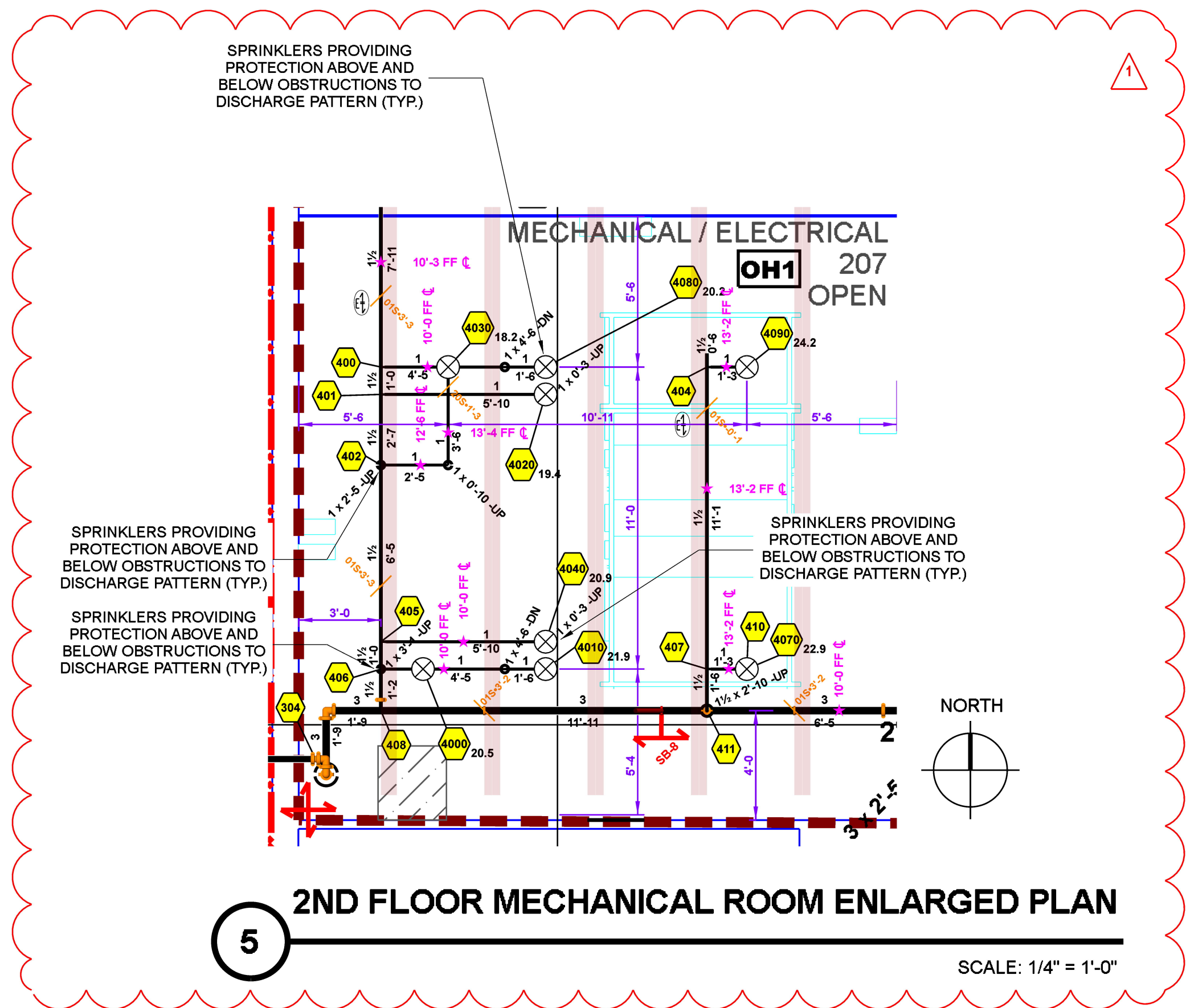
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1ST FLOOR CTE BUILDING SYSTEM PLAN

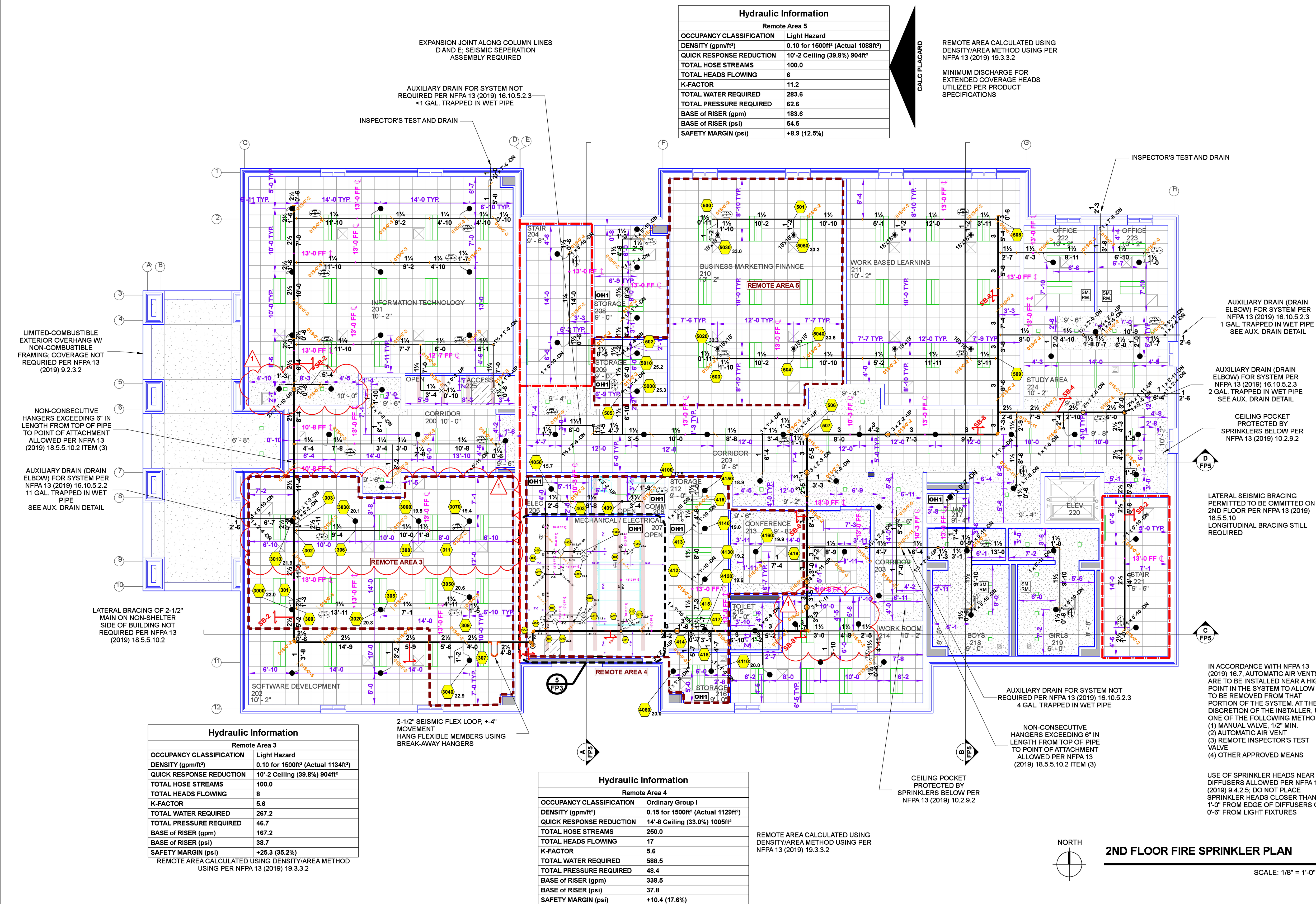
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FP2



Sprinkler Legend												
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	MAX Spacing	Notes
⊗	Viking	VK300	Microfast	11	5.6	UPRIGHT	1/2"	Quick	Brass	200°F	15' x 15'	N/A
●	Viking	VK4621		75	5.6	CONC. PENDENT	1/2"	Quick	Brass	200°F	15' x 15'	WHITE PLATE
⊙	18x18Viking	VK636	EC-ELO	8	11.2	CONC. PENDENT	3/4"	Quick	Brass	205°F	18' x 18'	EXT. COVERAGE
				Total = 94								



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CTE ADDITION TO OXFORD HIGH SCHOOL
101 CHARGER LOOP, OXFORD, MS 38855

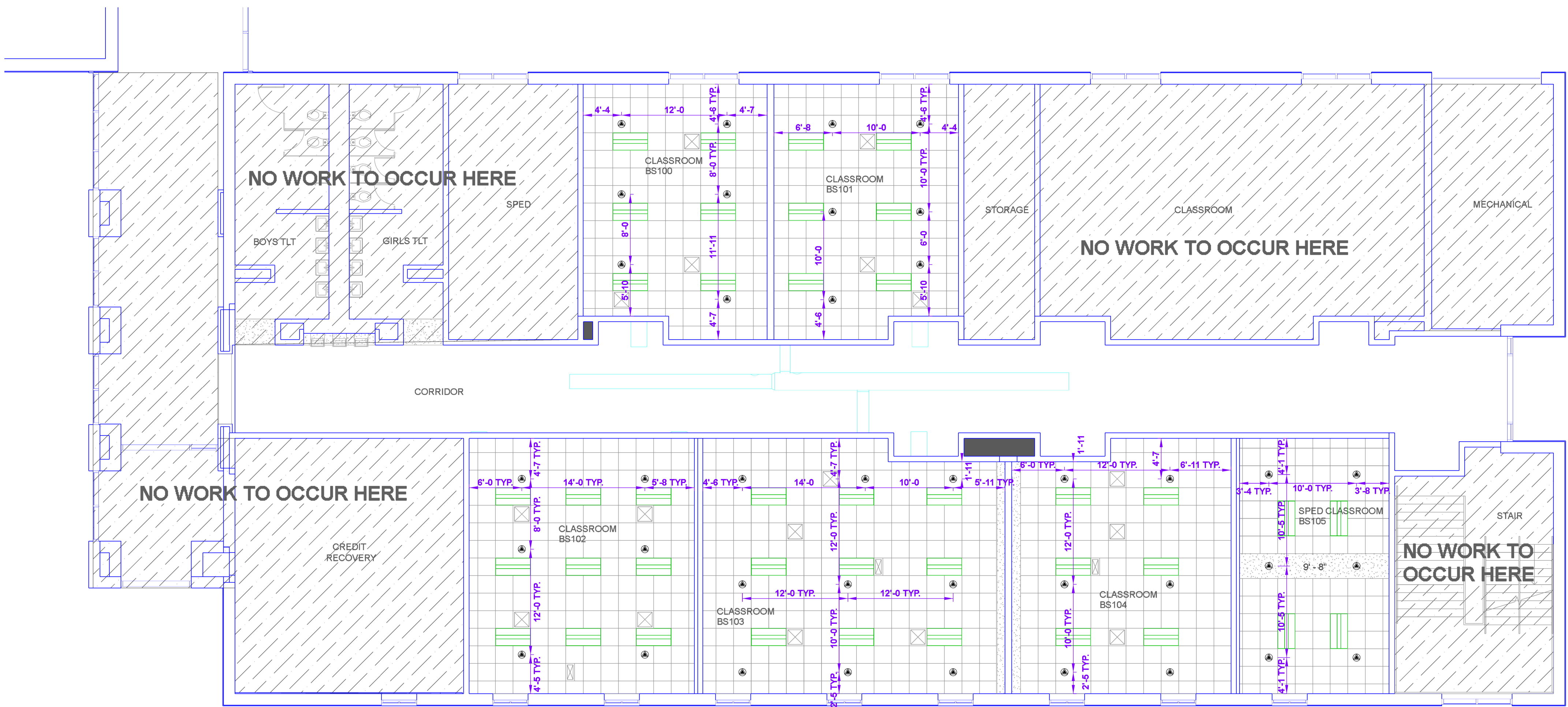
2ND FLOOR CTE BUILDING SYSTEM PLAN

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FP3

Sprinkler Legend											
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	MAX. Spacing
	Viking	VK302	Microfast	39	5.6	Pendent	1/2"	Quick	White Polyester	200°F	15' x 15'
				Total = 39							
											MATCH EXIST.

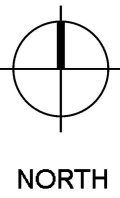


IN ACCORDANCE WITH NFPA 13 (2019) 16.7, AUTOMATIC AIR VENTS ARE TO BE INSTALLED NEAR A HIGH POINT IN THE SYSTEM TO ALLOW AIR TO BE REMOVED FROM THAT PORTION OF THE SYSTEM AT THE DISCRETION OF THE INSTALLER. USE ONE OF THE FOLLOWING METHODS:
(1) MANUAL VALVE, 1/2" MIN.
(2) AUTOMATIC AIR VENT
(3) REMOTE INSPECTOR'S TEST VALVE
(4) OTHER APPROVED MEANS

NEW FIRE SPRINKLERS SHALL MATCH EXISTING SPRINKLER FINISHES, RESPONSE, AND TEMPERATURE RATINGS PER NFPA 13 (2019)

USE OF SPRINKLER HEADS NEAR DIFFUSERS ALLOWED PER NFPA 13 (2019) 8.4.2.5. DO NOT PLACE SPRINKLER HEADS CLOSER THAN 2'-0" FROM EDGE OF DIFFUSERS OR 1'-0" FROM LIGHT FIXTURES

MATCH EXISTING FINISH IN SURROUNDING AREAS TYP.



BUILDING B.S. RENOVATION FIRE SPRINKLER PLAN

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

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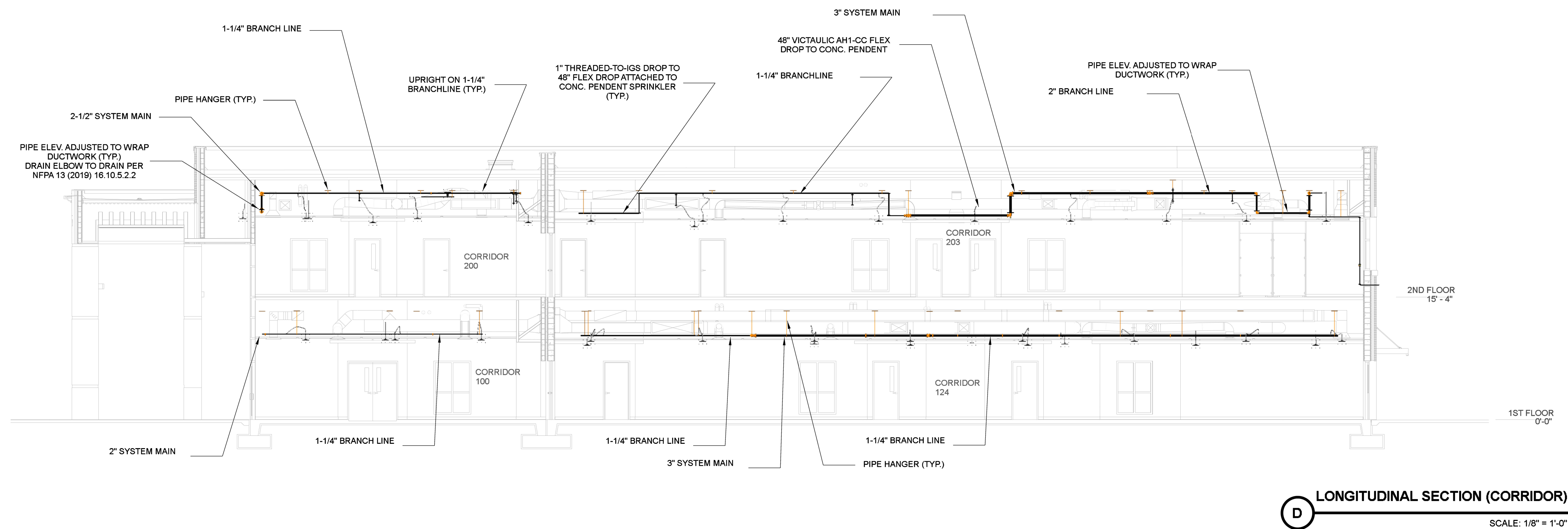
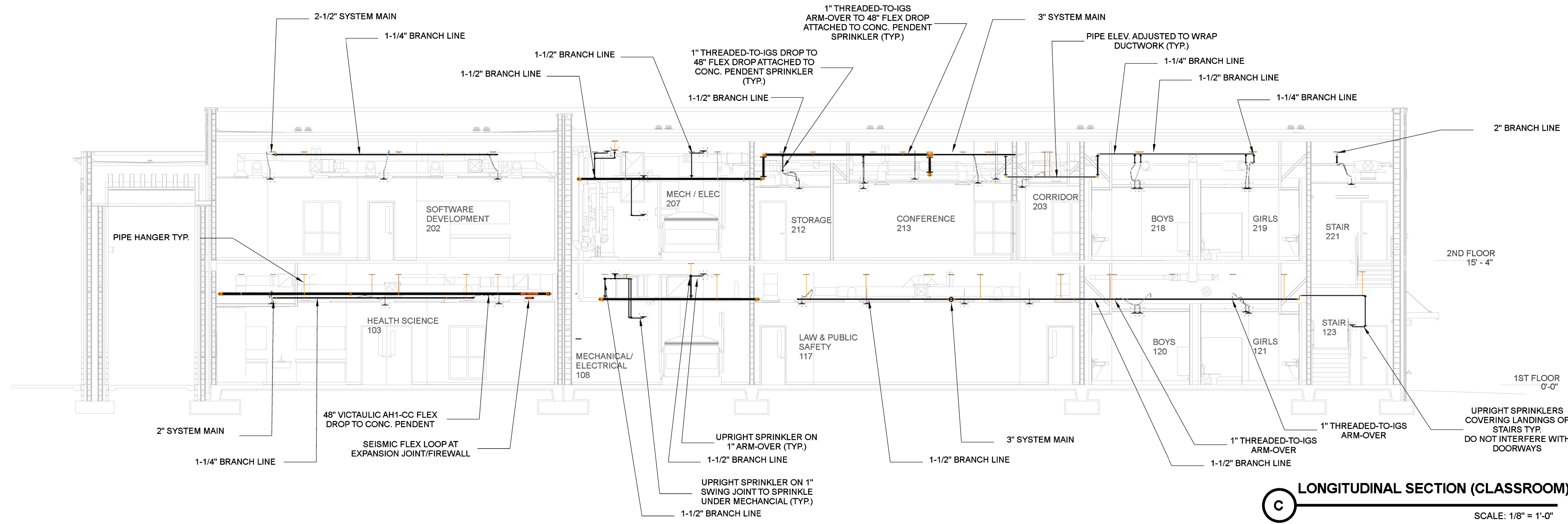
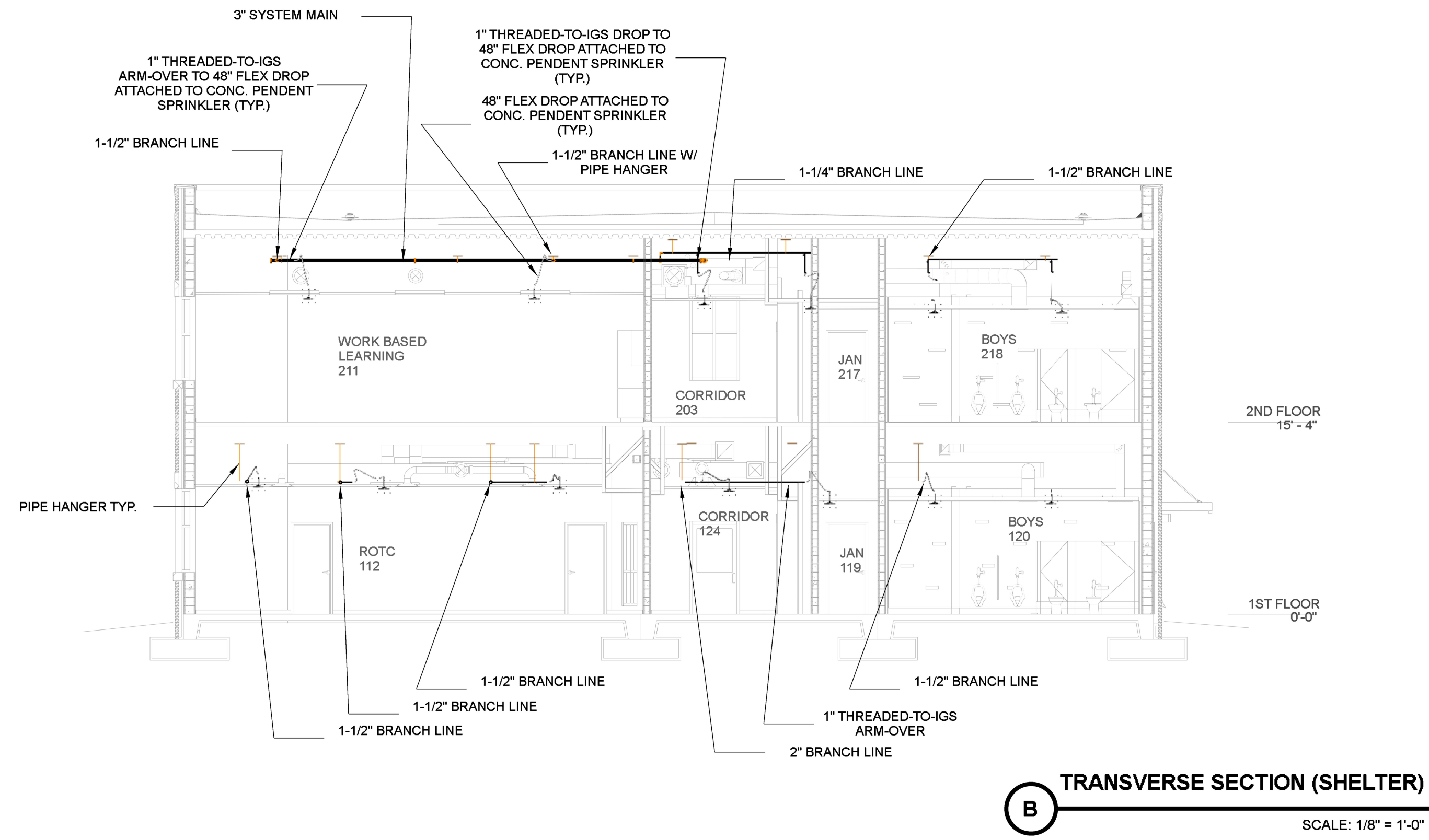
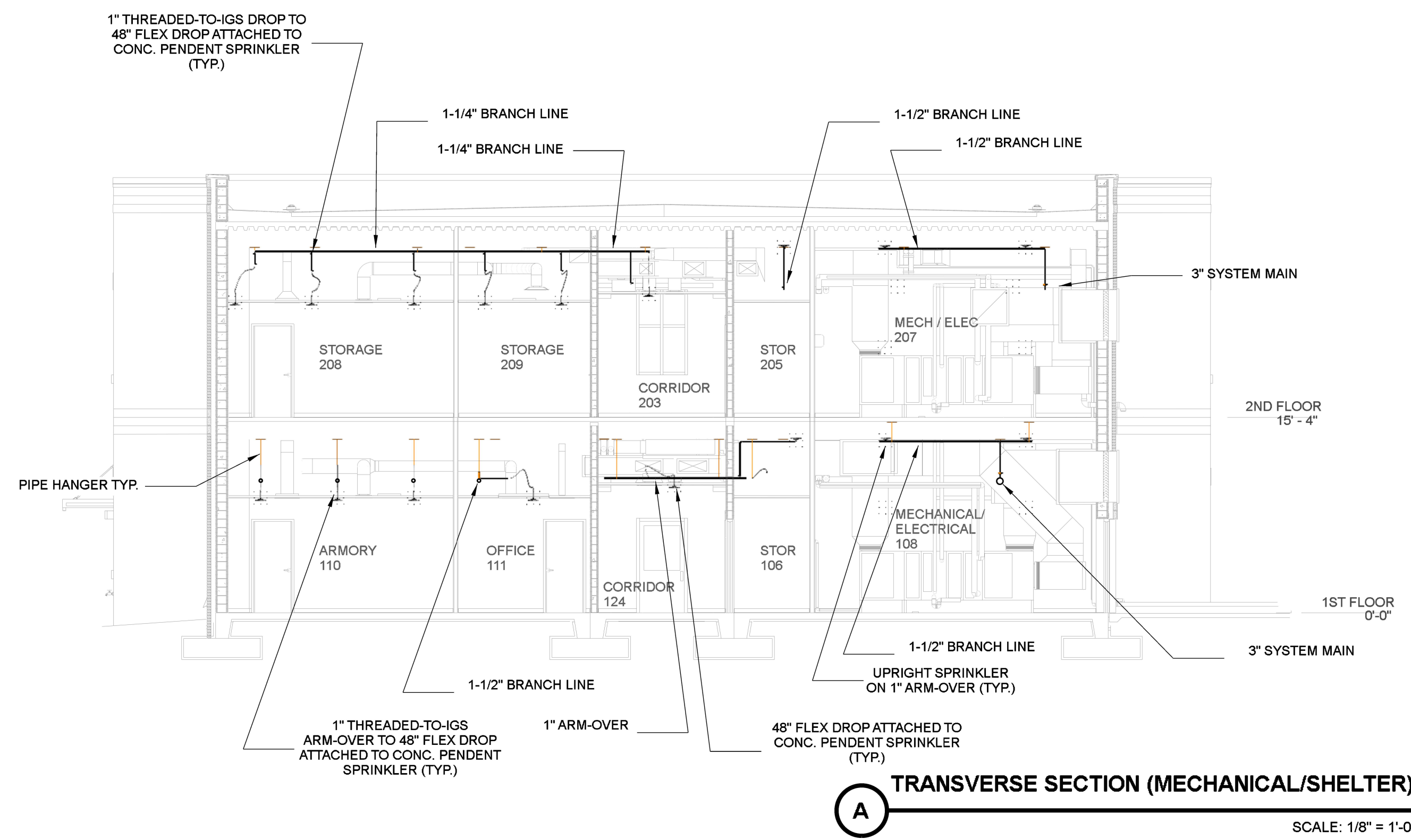
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- ☒ INSTALLATION
- ☐ AS-BUILT

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BUILDING B.S. RENOVATION SYSTEM PLAN

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- ☒ INSTALLATION
- ☐ AS-BUILT

CTE ADDITION TO OXFORD HIGH SCHOOL
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CTE BUILDING SECTIONS

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FP5