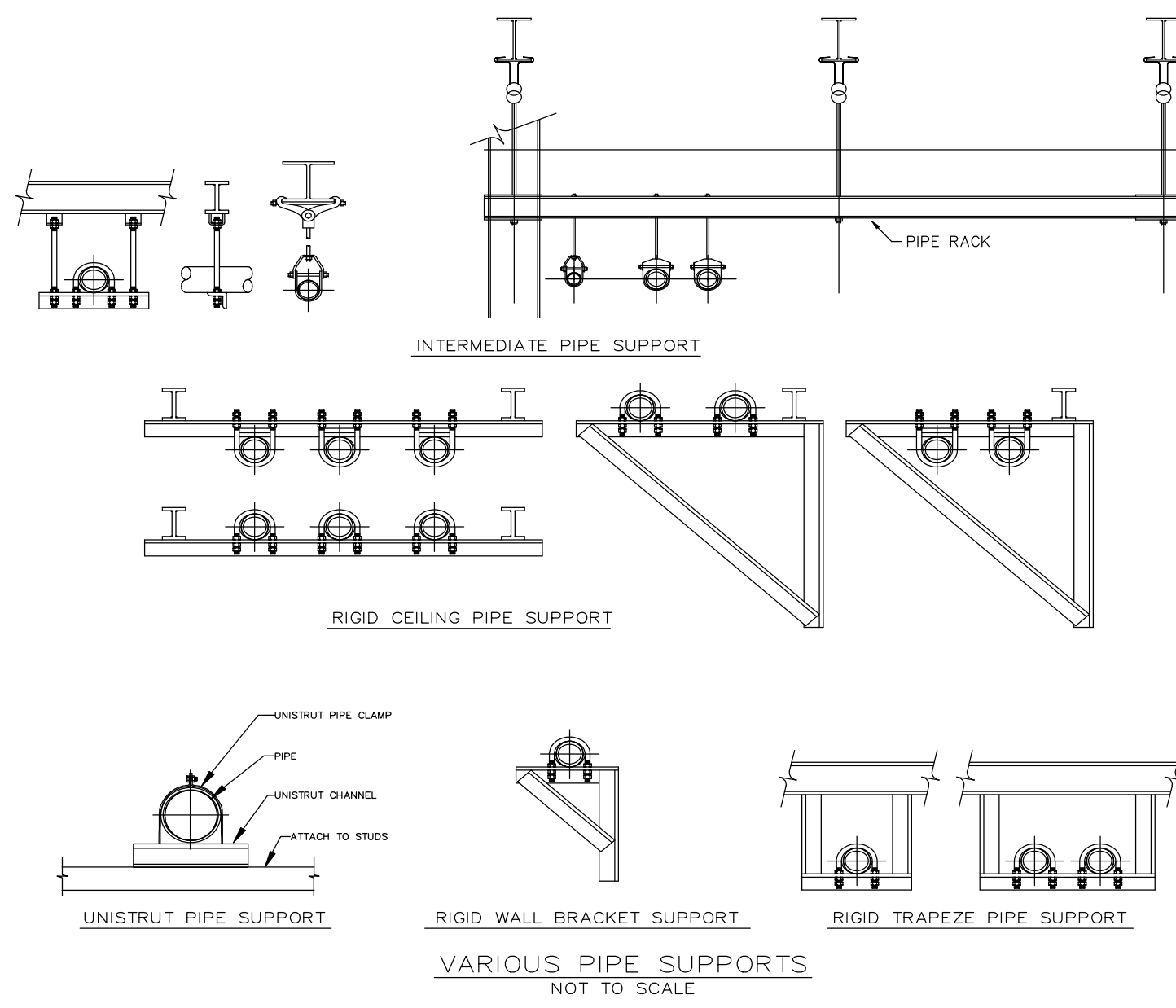


GENERAL SYSTEMS NOTES-

- F1. THIS IS A "CLEAN AGENT" FIRE SUPPRESSION SYSTEM WITH A DEDICATED FUNCTION LOCAL FIRE ALARM SYSTEM UL-LISTED FOR AGENT RELEASE.
- F2. SYSTEM IS DESIGNED AND WILL BE MAINTAINED PER NFPA 72 (2013 EDITION), NFPA 2001 (2012 EDITION) & THE IFC (2012 EDITION).
- F3. DESIGN CONCENTRATION SHALL BE MINIMUM REQUIRED FOR CLASS "C" HAZARDS PER NFPA 2001.
 - a. FK 5-1-12 (Novice 1230)- 4.7%
 - b. HFC227 (FM200)- 7.0%
- F4. CONTRACTOR TO PROVIDE FULL BATTERY & VOLTAGE DROP CALCULATIONS FOR SUBMITTAL & RECORD DOCUMENTS. THE SYSTEM SHALL BE PROVIDED WITH 24 HOURS OF STAND-BY WITH 5 MINUTES OF ALARM TIME.
- F5. SHOP DRAWINGS, CALCULATIONS, MANUFACTURER'S DATA SHEETS, AND ROOM INTEGRITY TEST RESULTS SHALL BE SUBMITTED FOR APPROVAL TO FOSTER ENGINEERING BEFORE SYSTEM INSTALLATION. THE CONTRACTOR SHALL SUBMIT ALL DOCUMENTS ELECTRONICALLY IN PDF FORMAT. DOCUMENT PROTECTION (IF USED) MUST ALLOW FOR MARKUPS BY FOSTER ENGINEERING.
- F6. ALL SYSTEM DEVICES AND CIRCUITS WILL BE TESTED IN ACCORDANCE WITH NFPA 72 & THE IFC.
- F7. A RECORD OF COMPLETION WITH THE APPROVED DRAWINGS AND SPECS WILL BE PROVIDED IN ACCORDANCE WITH NFPA 72 & THE IFC.

- F8. INSTRUCTIONS FOR OPERATING, TESTING AND MAINTENANCE WITH THE RECORD DRAWINGS AND SPECIFICATIONS WILL BE PROVIDED AT AN APPROVED LOCATION PER THE IFC. UPON FINAL ACCEPTANCE OF THIS SYSTEM, THESE DRAWINGS, THE OWNER'S MANUAL, THE DEVICE DATA SHEETS AND ALL OTHER APPLICABLE DOCUMENTATION WILL BE DELIVERED TO THE FACILITY REPRESENTATIVE. THE CLOSEOUT DOCUMENTS SHALL INCLUDE ONE (1) ELECTRONIC COPY AND ONE (1) PRINTED COPY OF THE APPROVED SHOP DRAWINGS.
- F9. THERE APPEAR TO BE NO KNOWN AREAS OF CONCERN FOR FALSE ALARM.
- F10. ABORT SWITCH MUST BE "DEAD MAN" STYLE. SHALL ONLY DELAY SYSTEM DISCHARGE AND SHALL NOT RESET COUNTDOWN.
- F11. SEE PIPE INSTALLATION NOTES FOR PIPING INFORMATION.
- F12. THE BASIS OF DESIGN REQUIRES THAT THE PROTECTED SPACE IS ENCLOSED WELL ENOUGH TO CREATE A MINIMUM AGENT RETENTION TIME OF 10 MINUTES. AN ENCLOSURE INTEGRITY TEST (FAN TEST) WILL BE PERFORMED TO DETERMINE THE ACTUAL AGENT RETENTION TIME. CONTRACTOR WILL PROVIDE ADDITIONAL AGENT IF NECESSARY TO ACHIEVE A 10 MINUTE RETENTION TIME.
- F13. SEISMIC NOTES-
 - A FLEXIBLE CONNECTION MUST BE USED TO CONNECT THE AGENT CYLINDER TO THE DISCHARGE PIPING.
 - THE AGENT CYLINDER MUST BE RESTRAINED USING TWO (2) STRAPS THAT MUST BE ATTACHED TO A MINIMUM OF THREE (3) WALL STUDS.
 - MAINTAIN A MAXIMUM DISTANCE OF 12" FROM THE POINT OF ATTACHMENT TO THE STRUCTURE AND THE TOP OF ALL HORIZONTAL OVERHEAD PIPING.
- F14. PER NFPA 2001-4.3.1.3 ALL INITIATING AND RELEASING CIRCUITS SHALL BE INSTALLED IN RACEWAYS.



INSTALLATION NOTES FOR CLEAN AGENT SYSTEM

- THESE SPECIFICATIONS ARE TO APPLY TO ALL INSTALLATIONS OF CLEAN AGENT FIRE EXTINGUISHER SYSTEMS.
1. ALL PIPE SHALL CONFORM WITH NFPA 2001 SECTION 4.2.1.
 2. JOINTS & FITTINGS SHALL COMPLY WITH NFPA 2001 SECTIONS 4.4.2 & 4.2.3.
 3. PIPE GRADES MUST BE SUITABLE FOR THE PRESSURES CALCULATED BY MANUFACTURER'S FM-200 FLOW CALCULATION PROGRAM. CONSULT THE CHART IN THE MANUFACTURER'S DESIGN MANUAL OR NFPA 2001 FOR MAXIMUM PIPE PRESSURES FOR THE DIFFERENT PIPE GRADES.
 4. SEE NOTE F-13 IN GENERAL NOTES.
 5. ALL FITTINGS USED TO CONSTRUCT THE MANIFOLD, INCLUDING FITTINGS BEFORE THE DRIFICE UNION TO BE BLACK FORGED STEEL 2000 LB OR 3000 LB ANSI B-16.11.
 6. PIPE LENGTHS GIVEN ARE FROM CENTER TO CENTER OF FITTINGS.
 7. ANY DEVIATIONS FROM THE ARRANGEMENT SHOWN ON THE SHOP DRAWINGS WILL REQUIRE A COMPLETE REVIEW OF THE FLOW CALCULATIONS BY THE CONTRACTOR.
 8. BEAM AND CLEAN EACH PIPE SECTION INTERNALLY AFTER PREPARATION AND BEFORE ASSEMBLY BY MEANS OF SWABBING, UTILIZING A SUITABLE NON-FLAMMABLE CLEANER. THE PIPING NETWORK SHALL BE FREE OF PARTICULATE MATTER AND OIL RESIDUE BEFORE INSTALLATION OF NOZZLES OR DISCHARGE DEVICES.
 9. ALL DEAD END PIPE LINES TO BE PROVIDED WITH A DIRT TRAP.

Table & Maximum Distance Between Pipework Supports

Pipe Size (in.)	Maximum Distance Between Supports (feet)
3/8	5.0
3/4	6.0
1	7.0
1 1/4	8.0
1 1/2	9.0
2	11.0
3	12.0
4	14.0
6	17.0

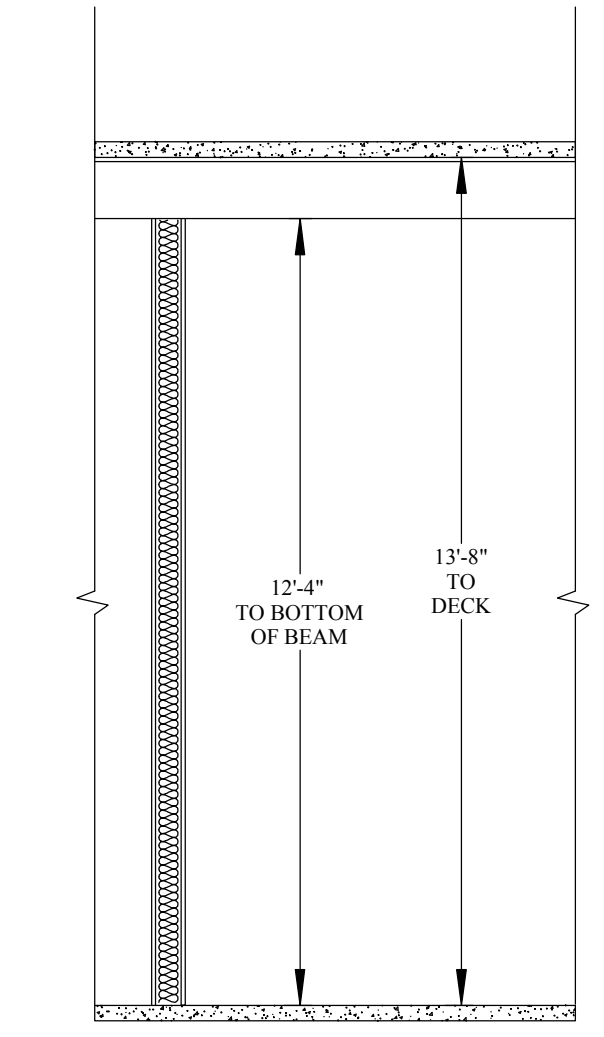
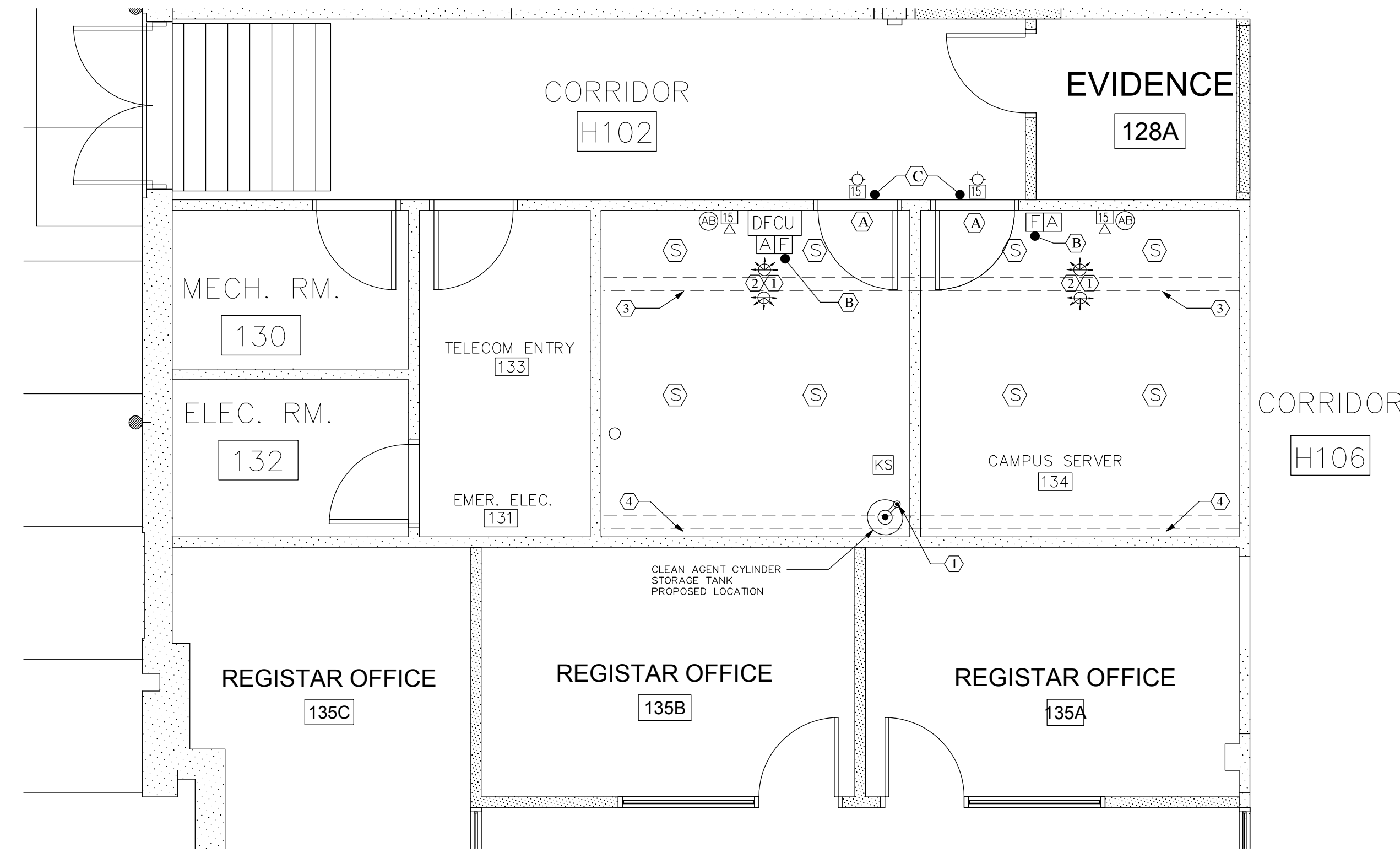
PIPING INFORMATION

SYSTEM SYMBOLS
SEE "DEVICE MOUNTING HEIGHT" DETAIL

[DFCU]	AGENT RELEASE CONTROL UNIT
[FM-200]	FM-200 MANUAL RELEASE STATION
[A]	FM-200 DISCHARGE ABORT
[Horn]	FIRE ALARM HORN STROBE
[Strobe]	FIRE ALARM STROBE
[AB]	6" ALARM BELL
[S]	PHOTOELECTRIC SMOKE DETECTOR
[KS]	KEYED MAINTENANCE SWITCH
[E]	ELECTRIC ACTUATOR
[N]	180 DEGREE, FM-200 DISCHARGE NOZZLE
[N*]	360 DEGREE, FM-200 DISCHARGE NOZZLE

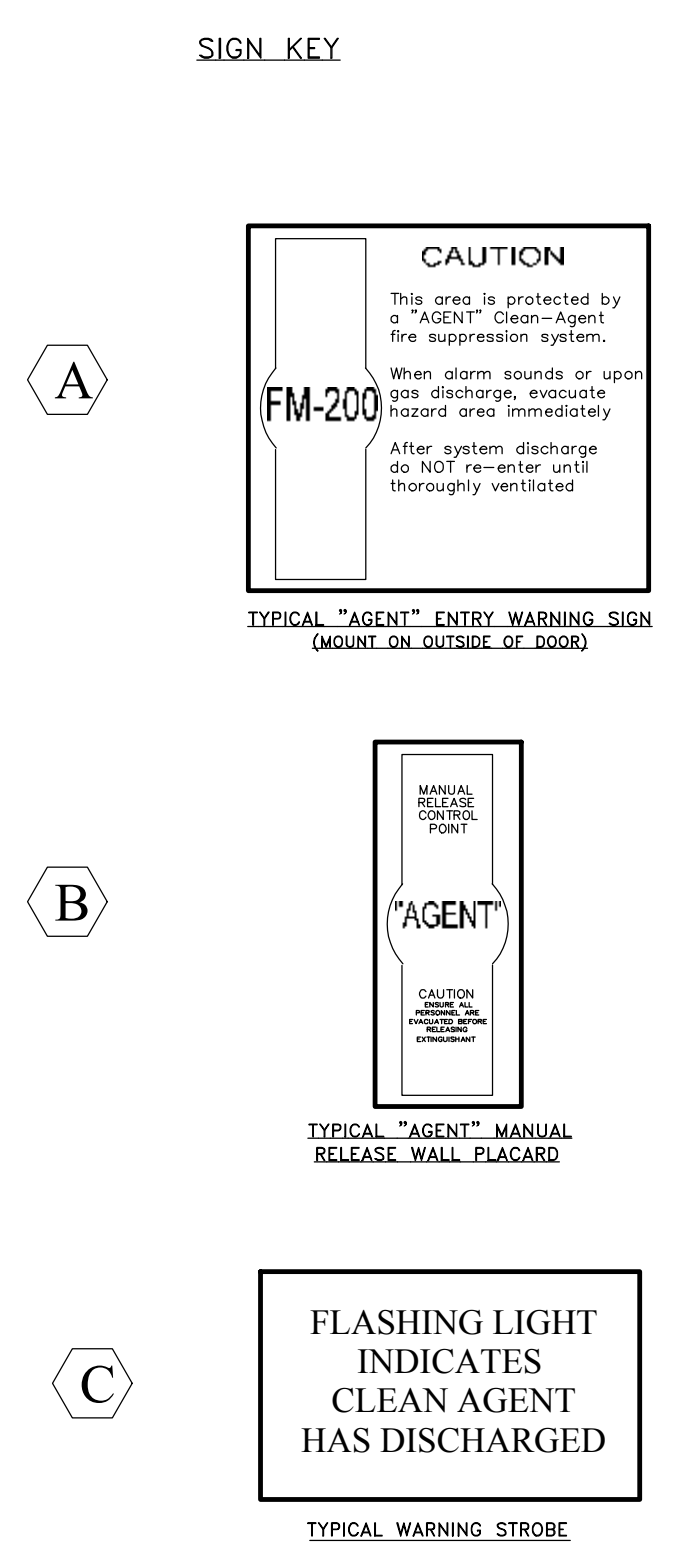
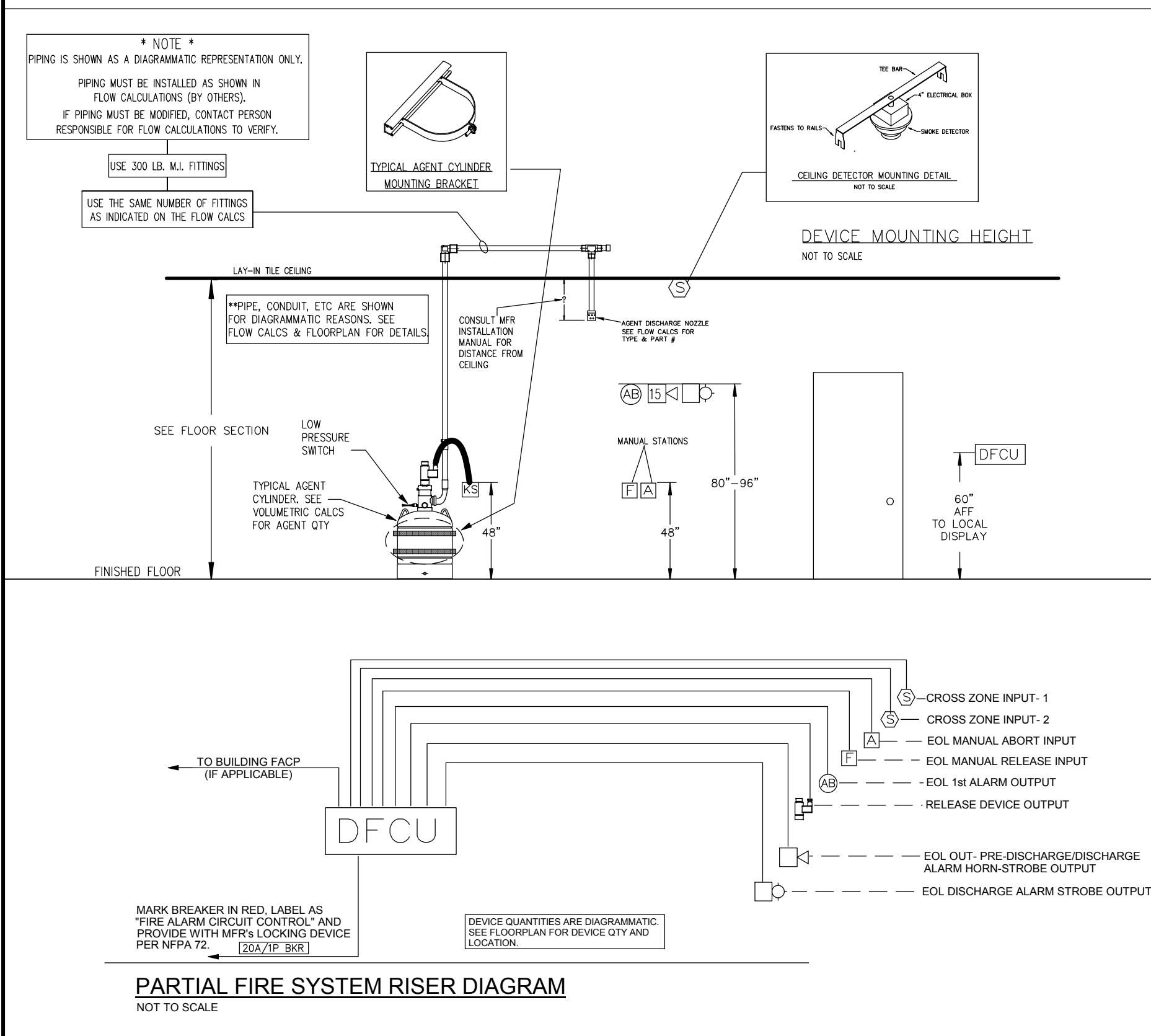
SYSTEM INPUTS

	A	B	C	D	E	F	G	H	I	J
1. MANUAL FULL STATION										1.
2. SMOKE DETECTOR- CROSS ZONE 1 or 2										2.
3. SMOKE DETECTOR- CROSS ZONE 1 & 2										3.
4. ABORT STATION										4.
5. NOTIFICATION APPLIANCE CIRCUIT SHORT										5.
6. DFCU AC POWER FAILURE										6.
7. DFCU LOW BATTERY										7.
8. DFCU OPEN CIRCUIT										8.
9. DFCU GROUND FAULT										9.
10. DFCU NOTIFICATION APPLIANCE CIRCUIT SHORT										10.
11. AGENT CYLINDER LOW PRESSURE SWITCH										11.



CLEAN AGENT FIRE SUPPRESSION SYSTEM FLOORPLAN
SCALE- 1/4" = 1'

ROOM SECTION
NOT TO SCALE



- KEY NOTES
1. HORIZONTAL PIPING OMITTED FOR CLARITY.
 2. AGENT DISCHARGE NOZZLE- CONSULT MANUFACTURER'S INSTALLATION MANUAL TO ENSURE THAT THE NOZZLE MAXIMUM RADIUS AND COVERAGE AREA IS NOT EXCEEDED.
 3. BEAMS ARE 16" IN DEPTH, ADDITIONAL NOZZLES & DETECTION HAVE BEEN INCLUDED TO ACCOUNT FOR BEAM POCKETS.
 4. BEAM POCKET CREATED HERE IS ONLY 4" WIDE. THAT IS NOT SUFFICIENT SPACE TO MOUNT ADDITIONAL NOZZLES OR DETECTION, CONTRACTOR TO BE RESPONSIBLE FOR SEALING THE AREA BETWEEN THE BEAM AND THE WALL TO ELIMINATE THIS BEAM POCKET.
 5. MISC CONDUITS IN THE FLOOR MUST BE SEALED TO HELP ACHIEVE AN APPROPRIATE MINIMUM RETENTION TIME.
 6. SHARED VENTILATION IN COMMON WALL REQUIRES THAT BOTH ROOMS DISCHARGE SIMULTANEOUSLY.

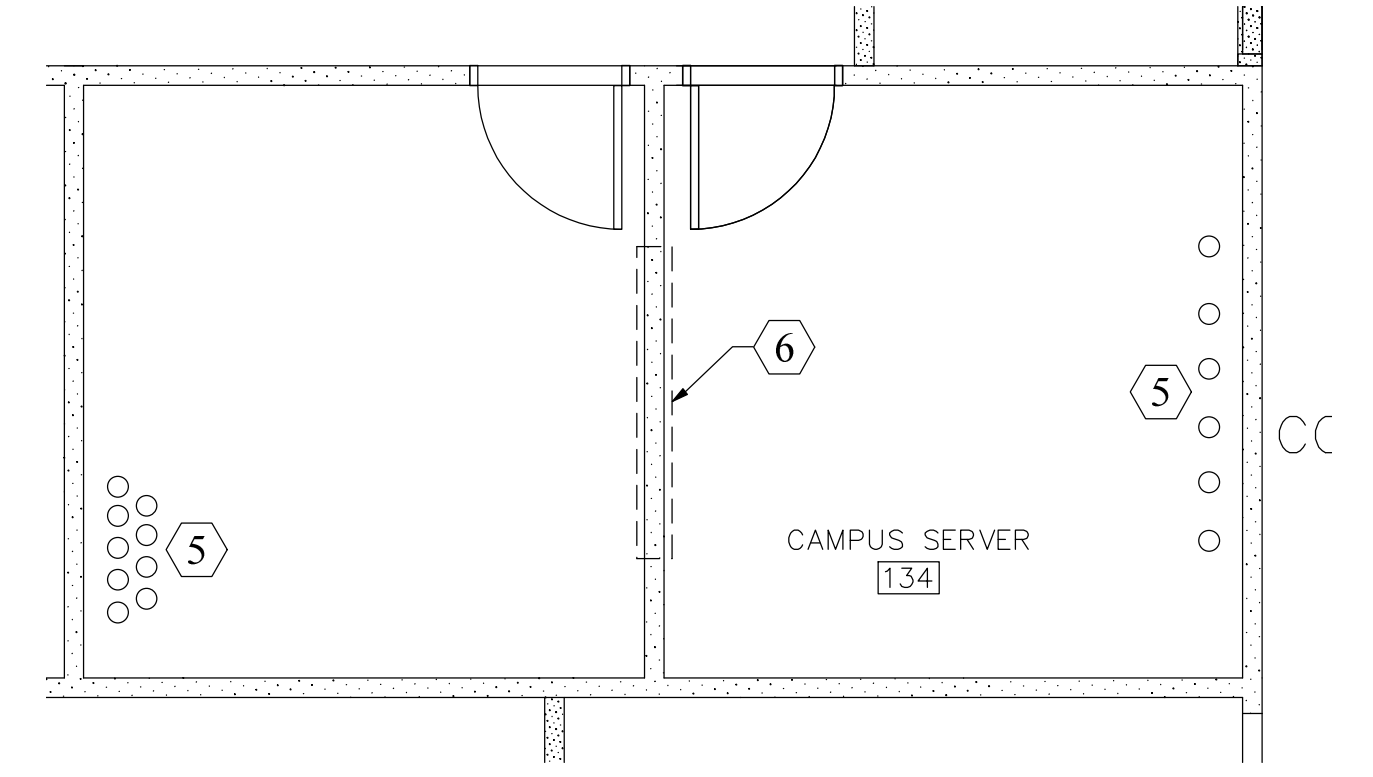
VOLUMETRIC CALCULATIONS

TELE-COMM ENTRY ROOM #133 VOLUMETRIC CALCULATIONS
- ROOM DIMENSIONS- 11'-8" x 12'-4" x 13'-8" (h)= 1,996 cu ft

CAMPUS SERVER ROOM # 134 VOLUMETRIC CALCULATIONS
- ROOM DIMENSIONS- 12'-0" x 12'-4" x 13'-8" (h)= 2,022 cu ft

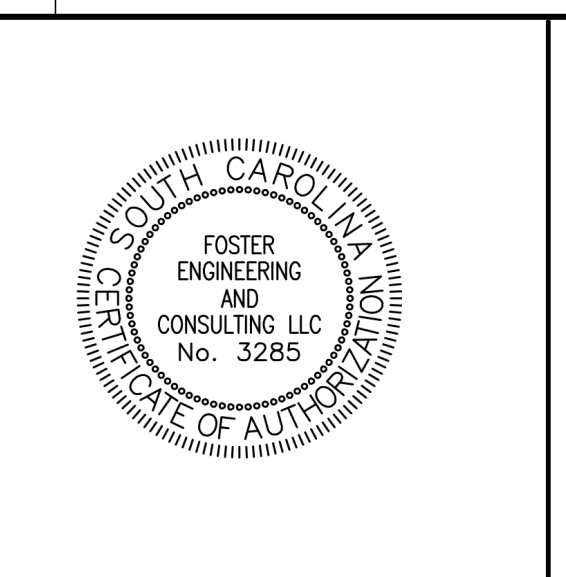
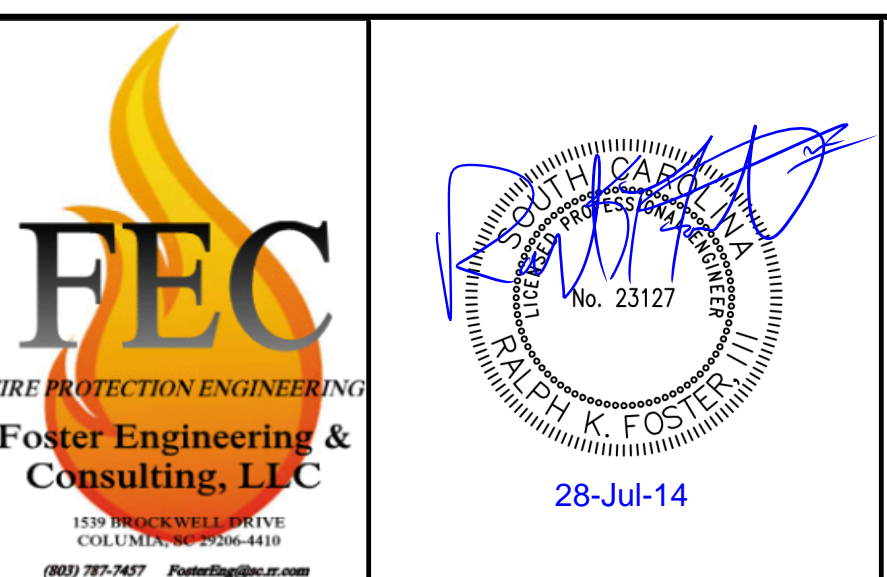
TOTAL PROTECTED VOLUME (BOTH SPACES)- 4,018 cu ft

VOLUMETRIC CALC. NOTES:
-THE MINIMUM CLEAN AGENT CONCENTRATIONS NOTED (GENERAL NOTE "F3") ARE BASED ON VOLUME. SEE THE CONTRACTOR'S HYDRAULIC CALCULATION RESULTS FOR ACTUAL AGENT AMOUNT REQUIRED.

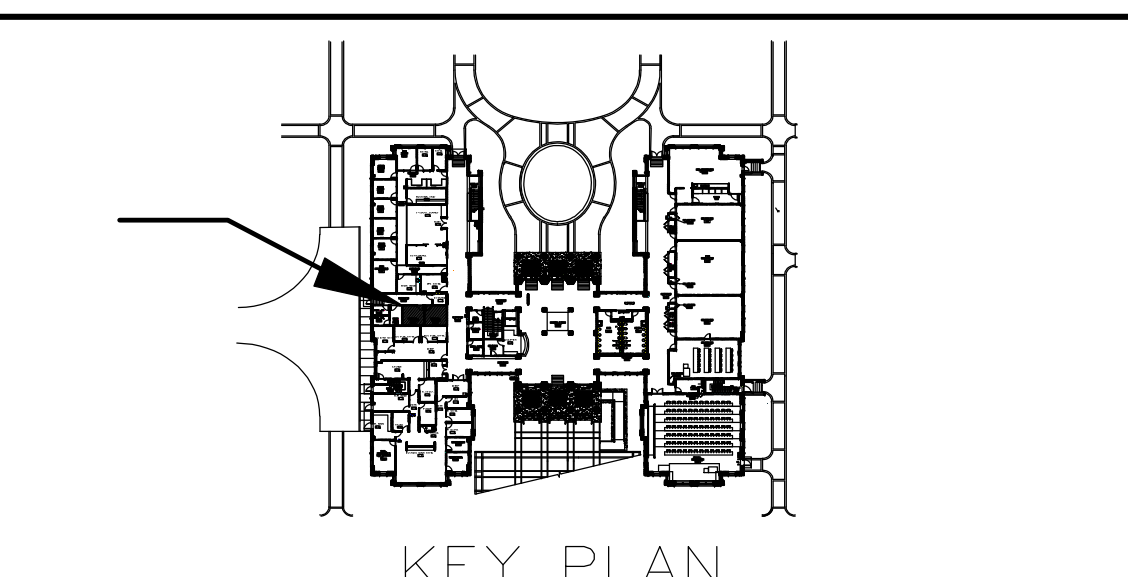


ENCLOSURE INTEGRITY NOTES
SCALE- NTS

NO.	REVISION	DATE
1	TYPOGRAPHICAL ERRORS & NOTE CLARIFICATIONS	7/28/2014



UNIVERSITY OF SOUTH CAROLINA
HILTON HEAD GATEWAY CAMPUS- HARGRAY BLDG
ONE UNIVERSITY BLVD
BLUFFTON, SC
CLEAN AGENT FIRE SUPPRESSION SYSTEM



DATE
JUNE 24, 2014

SHEET SIZE- 30 x 42

FP1
DRAWING
1 of 1