“IOR Certification Code/Plans Questions” Part 1 Mechanical/Plumbing

Mechanical/Plumbing

Code

- Class A 10 Questions
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Sample Mechanical Question

In Fuel Gas Piping, per Pressure Testing and Inspection, The minimum test pressure and test duration for a hospital with fuel gas piping at house pressure shall be not less than:

a) 3 psi for 30 minutes
b) 5 psi for 15 minutes
c) 10 psi for 15 minutes
d) 5 psi for 30 minutes

- **How to look for the response?** 

- **Sample #3- in CMC where is Fuel Gas Piping?**

FORMAT OF THE UNIFORM MECHANICAL CODE

The format of the *Uniform Mechanical Code* (UMC) arranges each chapter in accordance with a specific subject matter. However, Chapter 3 is dedicated to general requirements that are applicable to every chapter. The subject matters are divided as follows:

CHAPTERS	SUBJECTS
1	Administration
2	Definitions
3	General Regulations
4	Ventilation Air
5	Exhaust Systems
6	Duct Systems
7	Combustion Air
8	Chimneys and Vents
9	Installation of Specific Appliances
10	Boilers and Pressure Vessels
11	Refrigeration
12	Hydronics
13	Fuel Gas Piping
14	Process Piping
15	Solar Energy Systems
16	Stationary Power Plants
17	Referenced Standards
Appendix A	Residential Plan Examiner Review Form for HVAC System Design
Appendix B	Procedures to be Followed to Place Gas Equipment in Operation
Appendix C	Installation and Testing of Oil (Liquid) Fuel-Fired Equipment
Appendix D	Fuel Supply: Manufactured/Mobile Home Parks and Recreational Vehicle Parks
Appendix E	Sustainable Practices
Appendix F	Sizing of Venting Systems and Outdoor Combustion and Ventilation Opening Design
Appendix G	Example Calculation of Outdoor Air Rate

1313.3 Test Pressure. This inspection shall include an air, CO_2, or nitrogen pressure test, at which time the gas piping shall stand a pressure of not less than 10 psi (69 kPa) gauge pressure. Test pressures shall be held for a length of time satisfactory to the Authority Having Jurisdiction but in no case less than 15 minutes with no perceptible drop in pressure. For welded piping, and for piping carrying gas at pressures in excess of 14 inches water column (3.5 kPa) pressure, the test pressure shall be not less than 60 psi (414 kPa) and shall be continued for a length of time satisfactory to the Authority Having Jurisdiction, but in no case for less than 30 minutes. For CSST carrying gas at pressures in excess of 14 inches water column (3.5 kPa) pressure, the test pressure shall be 30 psi (207 kPa) for 30 minutes. These tests shall be made using air, CO_2, or nitrogen pressure and shall be made in the presence of the Authority Having Jurisdiction. Necessary apparatus for conducting tests shall be furnished by the permit holder. Test gauges used in conducting test shall be in accordance with Section 1303.3.3.1 through Section 1303.3.3.4.

Response:

a) 3 psi for 30 minutes
b) 5 psi for 15 minutes
c) 10 psi for 15 minutes
d) 5 psi for 30 minutes

Plan

- Class A 13 Questions
- Class B 9 Questions

Mechanical/Plumbing Plan Questions

- Let’s analyze the questions with the correct responses…
- How to read/interpret the question
- How to arrive to a response (sometimes it is easy, sometimes it is not easy)
- Remember: Plans are not perfect. And this is why RFIs exist during construction

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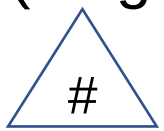
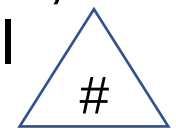
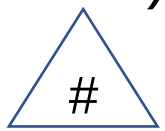
- Drawing Content (Original set, RFI, ASI, ACD)
- delta symbol RFI 

ASI 

ACD 

- Depending on the size and complexity of the project
- the information provided on the fire and life safety drawings should provide a clear description of how the project complies with the various provisions of the CBC. Some of the general information for the project may also appear on the drawing title sheet.
- Also, much of the specific information will be contained in the body of drawing details and schedules.

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C	Civil
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I	Interiors
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Sheet Types

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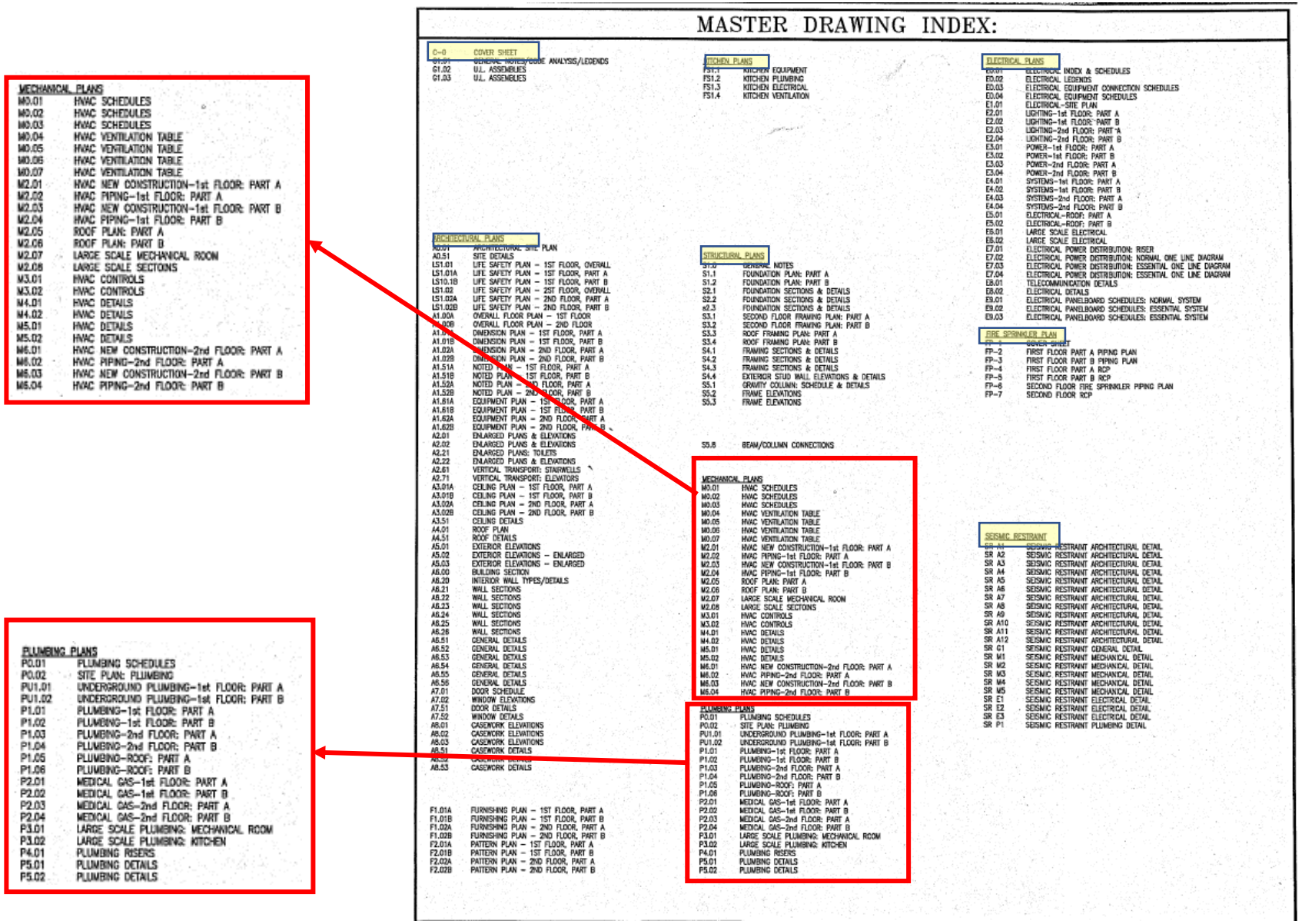
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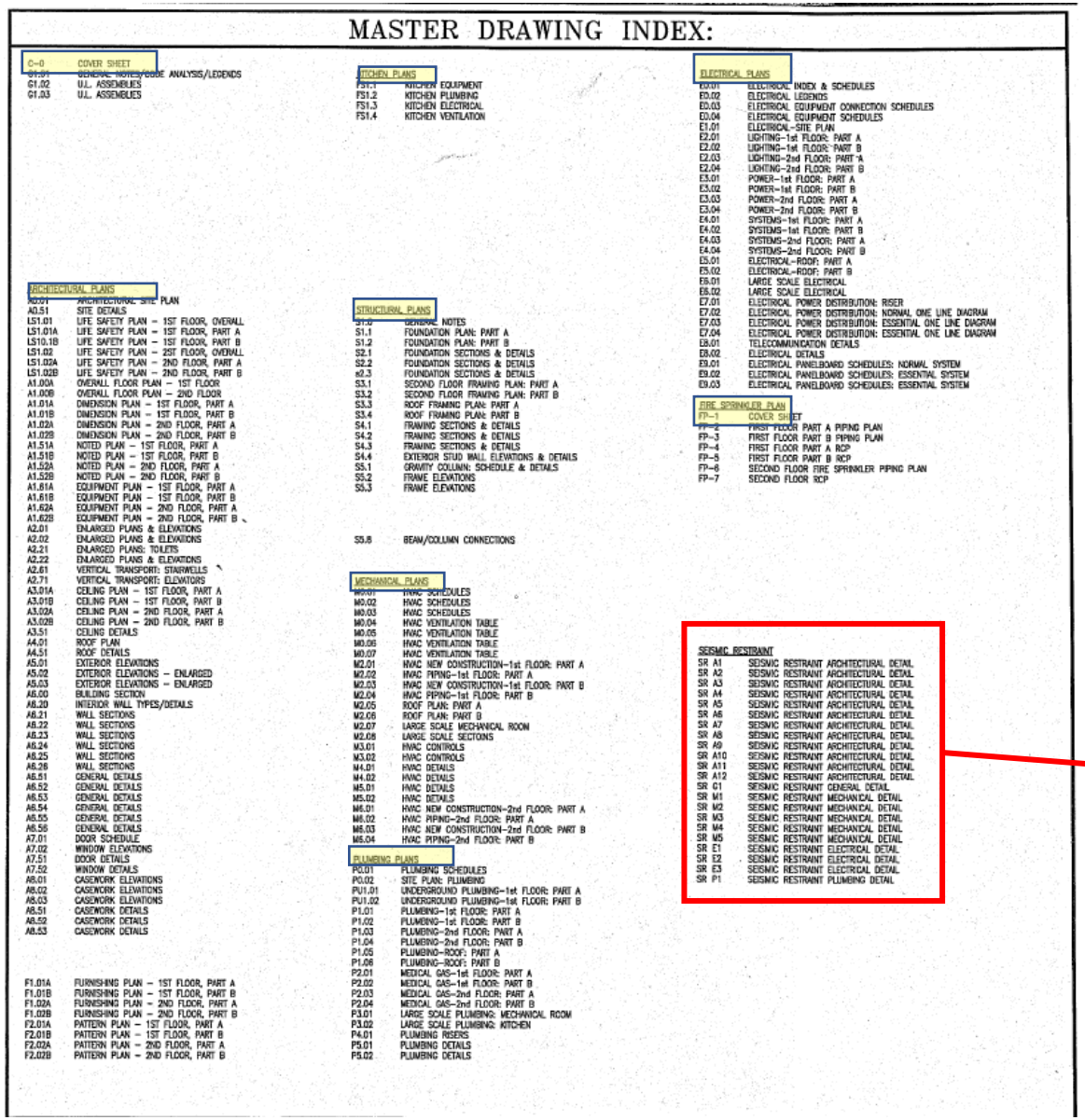

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FP–4	FIRST FLOOR PART A RCP
FP–5	FIRST FLOOR PART B RCP
FP–6	SECOND FLOOR FIRE SPRINKLER PIPING PLAN
FP–7	SECOND FLOOR RCP

SEISMIC RESTRAINT

SR A1	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR A2	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR A3	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR A4	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR A5	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR A6	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR A7	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR A8	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR A9	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR A10	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR A11	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR A12	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR C1	SEISMIC RESTRAINT GENERAL DETAIL
SR M1	SEISMIC RESTRAINT MECHANICAL DETAIL
SR M2	SEISMIC RESTRAINT MECHANICAL DETAIL
SR M3	SEISMIC RESTRAINT MECHANICAL DETAIL
SR M4	SEISMIC RESTRAINT MECHANICAL DETAIL
SR M5	SEISMIC RESTRAINT MECHANICAL DETAIL
SR E1	SEISMIC RESTRAINT ELECTRICAL DETAIL
SR E2	SEISMIC RESTRAINT ELECTRICAL DETAIL
SR E3	SEISMIC RESTRAINT ELECTRICAL DETAIL
SR P1	SEISMIC RESTRAINT PLUMBING DETAIL

SEISMIC RESTRAINT

SR A1	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR A2	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR A3	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
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SR A10	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR A11	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR A12	SEISMIC RESTRAINT ARCHITECTURAL DETAIL
SR C1	SEISMIC RESTRAINT GENERAL DETAIL
SR M1	SEISMIC RESTRAINT MECHANICAL DETAIL
SR M2	SEISMIC RESTRAINT MECHANICAL DETAIL
SR M3	SEISMIC RESTRAINT MECHANICAL DETAIL
SR M4	SEISMIC RESTRAINT MECHANICAL DETAIL
SR M5	SEISMIC RESTRAINT MECHANICAL DETAIL
SR E1	SEISMIC RESTRAINT ELECTRICAL DETAIL
SR E2	SEISMIC RESTRAINT ELECTRICAL DETAIL
SR E3	SEISMIC RESTRAINT ELECTRICAL DETAIL
SR P1	SEISMIC RESTRAINT PLUMBING DETAIL

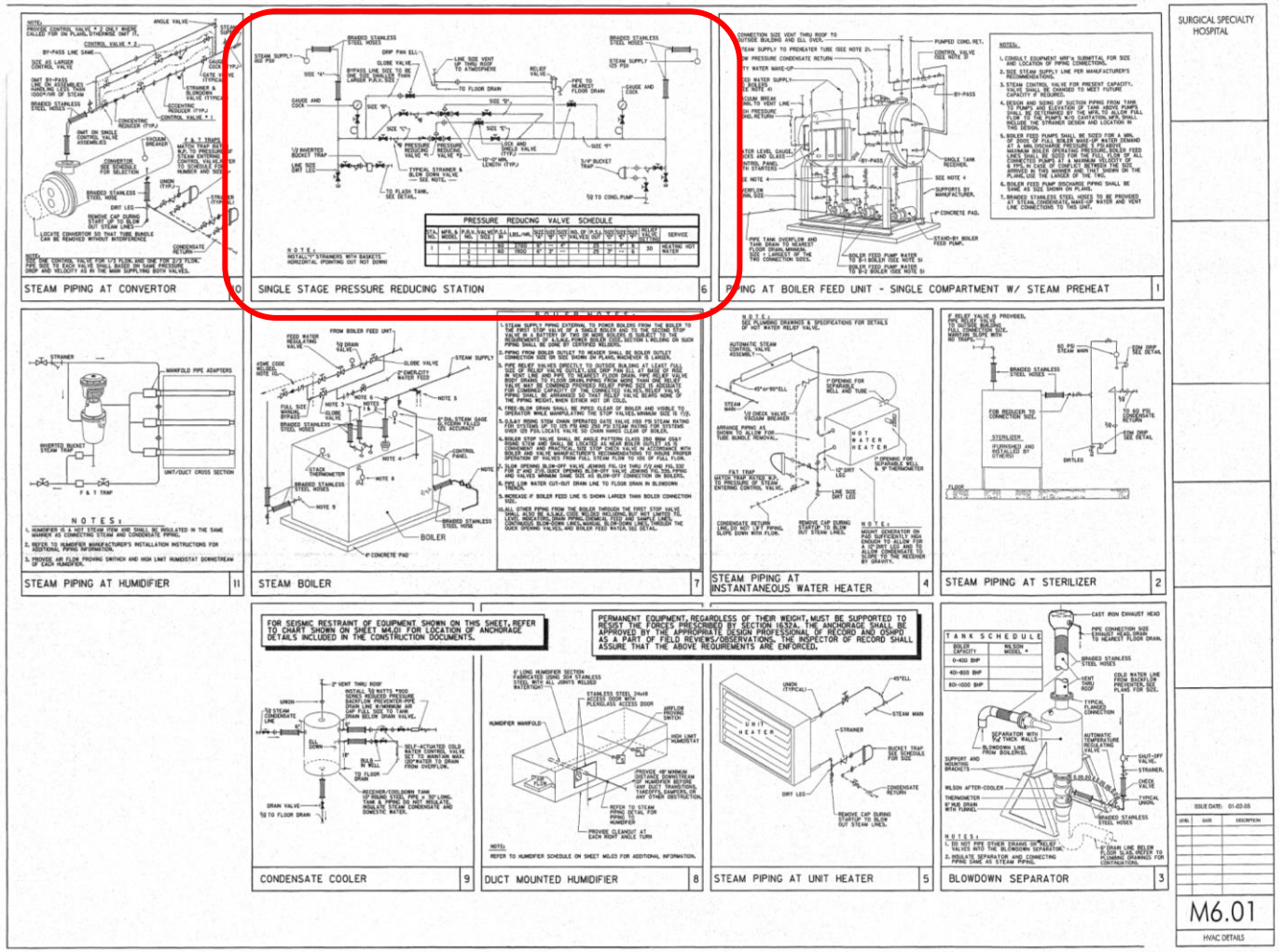
What to remember

- Notes
- Key Words
- Typical Details
- General Notes
- Look into all the disciplines

Example #1

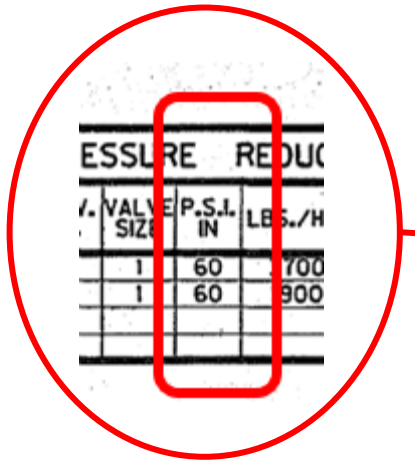
What is the inlet pressure to the single stage pressure reducing station?

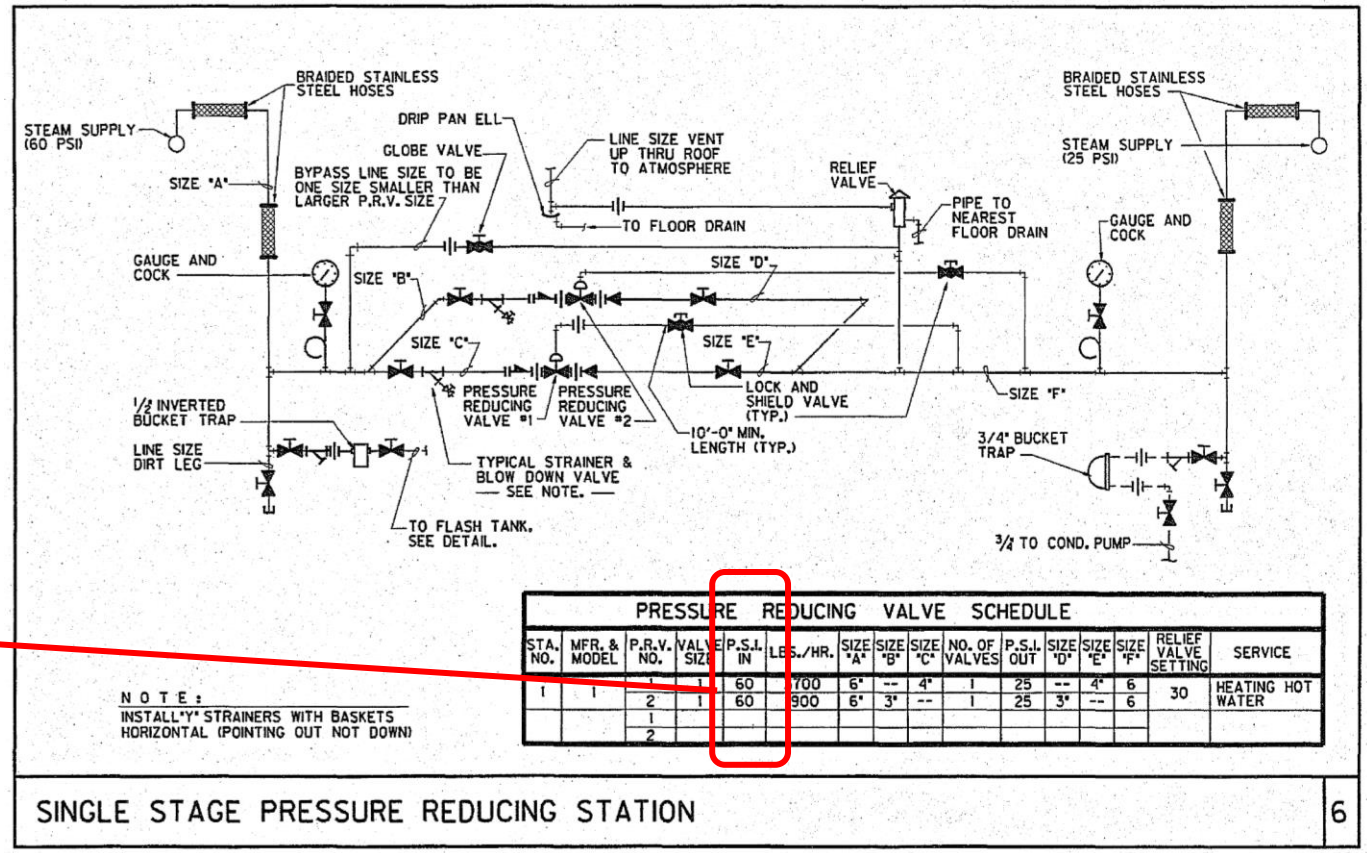
What do you have to look for?
See if there is Single Stage Pressure Reducing Station Detail….. And there is



What is the inlet pressure to the single stage pressure reducing station?

A. 25 psi
B. 40 psi
C. 45 psi
D. 60 psi





Example #2

The source valve for the nitrogen system is located in room ____.

First you need to know the symbol used for Nitrogen line

MEDICAL GAS LEGEND

SYMBOL	DESCRIPTION
A	COMPRESSED AIR
V	VACUUM
O_2	OXYGEN
N_2	NITROGEN
N_2O	NITROUS OXIDE
VE	VACUUM PUMP EXHAUST LINE
AI	AIR COMPRESSOR INTAKE LINE
EVAC	EVACUATION (OUTLET IN O.R.'s CONNECTED TO VACUUM PIPING SYSTEM)
S	MEDICAL VACUUM SLIDE BRACKET
	MEDICAL GAS OUTLET (SEE MED. GAS SCHED.)

MAIN WATER SIZING SCHEDULE

COLD WATER SYSTEM

FIXTURE TYPE	NUMBER OF FIXTURES	SUPPLY FIXTURE UNITS DEMAND	TOTAL SUPPLY FIXTURE UNITS	DEMAND IN GALLON PER MINUTE
WATER CLOSET (PRIVATE)	22	5.0	110	
WATER CLOSET (PUBLIC)	8	8.0	64	
URINAL	2	4.0	8	
SHOWER	18	2.0	36	
LAVATORY	32	1.0	32	
SERVICE SINK	3	3.0	9	
DRINKING FOUNTAIN	4	0.5	2	
CLINICAL SINK	1	8.0	8	
WALL HYDRANT	6	2.5	15	
SINK	48	2.0	96	
EMERGENCY SHOWER	2	4.0	8	
SUB-TOTAL			388	125 (PER CHART A-2)
COMMERCIAL DISHWASHER			25	
3 COMPARTMENT POT SINK	1	6	6	
SINK	2	2	4	
LAVATORY	3	1	3	
SERVICE SINK	3	3	9	
SUB-TOTAL			47	
MECHANICAL EQUIPMENT			50	
SUB-TOTAL			485	140 (PER CHART A-2)
FUTURE - FIXTURES				
WATER CLOSET (PRIVATE)	14	5.0	70	
SHOWER	14	2.0	28	
LAVATORY	14	1.0	14	
SINK	18	2.0	36	
SUB-TOTAL			148	
HOT WATER DEMAND			249.5	
TOTAL			882.5	200 (PER CHART A-2)

TOTAL BUILDING DEMAIN IN GALLONS PER MINUTE = 200

HOT WATER SYSTEM

NUMBER OF FIXTURES	FIXTURE UNIT CALCULATION	ACTUAL F.U.	GPM DEMAND
18	18 X 2 3/4	27	
32	32 X 1 3/4	24	
3	3 X 3 3/4	6.75	
1	1 X 10 3/4	5	
48	48 X 2 1/4	72	
	(PER CHART A-2)	134.75	50
		25	
1	1 X 6 3/4	4.5	
2	2 X 2 3/4	3	
3	3 X 1 3/4	2.25	
3	3 X 3 3/4	6.75	
	(PER CHART A-2)	56.5	30
14	14 X 2 3/4	21	
14	14 X 1 3/4	10.5	
18	18 X 1 3/4	27	
	(PER CHART A-2)	58.5	30
	(PER CHART A-2)	249.5	70

BUILDING SYSTEM PRESSURE

CIVIL DESIGN INFORMATION

FLOW TEST RESIDUAL @268 GPM @ 51 PSI
BUILDING DEMAND = 200 GPM @ 58PSI(ASSUMED)
TOTAL PRESSURE LOSS = 20 PSI FROM CITY MAIN TO BUILDING (INCLUDES 4" METER ASSEMBLY, 4" RPZ, AND ELEVATION)

38 PSI(BUILDING DESIGN PRESSURE)
-5 PSI(SAFETY MARGIN)
+ 35 PSI(BOOSTER PUMP RATED PRESSURE)
68 PSI(SYSTEM PRESSURE)
-25 PSI(SYSTEM MINIMUM PRESSURE)
-16 PSI(ELEVATION LOSS)
-2 PSI(PUMP CONTROL VALVE LOSS)
25 PSI (100 x 25/450 + 5.5 psi per 100')

PER CHART A-4
200 GPM @ 5.5 PSI/ 100'
MINIMUM OF 3" D.W. SUPPLY LINE FOR SYSTEM

RAINWATER & STORMWATER SIZING

HORIZONTAL PIPING

SIZE OF DRAIN, LEADER OR PIPE INCHES	FLOW GPM	MAX. ALLOWED HORIZONTAL PROJECTED ROOF AREAS (SQUARE FOOT AT 1" PER HOUR RAINFALL RATE) 1/8 SLOPE	MAX. ALLOWED HORIZONTAL PROJECTED ROOF AREAS (SQUARE FOOT AT 1" PER HOUR RAINFALL RATE) 1/4 SLOPE
3	48	1644	2320
4	110	3760	5300
6	314	10,700	15,100
8	677	23,000	32,600
10	1214	41,400	58,400
12	1953	66,600	94,000
15	3451	118,000	166,000

ROOF DRAIN & VERTICAL PIPING

SIZE OF DRAIN, LEADER OR PIPE INCHES	FLOW GPM	MAX. ALLOWED HORIZONTAL PROJECTED ROOF AREAS (SQUARE FOOT AT 2" PER HOUR RAINFALL RATE)
2	23	1088
3	67	3220
4	144	6920
6	424	20,400
8	913	44,000

WATER SOFTENER SCHEDULE

MFGR.	MODEL NO.	SERVICE PEAK FLOW RATE (GPM)	MAX. GRAINS	SOFTENER TANK SIZE	BRINE TANK SIZE	SERVICE PIPE SIZE
CULLIGAN DUPLEX	HS-152-D	75	100,000 EACH	20 X 48	24 X 48	2"

GENERAL NOTES

A. COORDINATE WITH CIVIL DRAWINGS FOR EXACT LOCATION AND ELEVATION OF SITE UTILITIES.
B. CONTRACTOR SHALL COORDINATE ALL TOP CASTING ELEVATIONS ON NEW SANITARY SEWER MANHOLES WITH FINISHED GRADE.
C. WALL HYDRANTS SHALL BE MOUNTED 18" ABOVE FINISHED GRADE.
D. CONTRACTOR WHEN MAKING FINAL CONNECTIONS TO EQUIPMENT AND PLUMBING FIXTURES SHALL FURNISH CUTOFFS, TRAPS, STOPS, FAUCETS, ELBOWS, VACUUM BREAKERS, INSULATION, ETC.
E. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES TO AVOID ANY SPACING OR ROUTING PROBLEMS.
F. ALL FIXTURES, EQUIPMENT AND PIPING SHALL BE INSTALLED IN ACCORDANCE WITH STATE AND LOCAL CODE REQUIREMENTS.
G. INSTALL SHOCK ABSORBERS ON ALL FLUSH VALVE FIXTURES AND QUICK CLOSING INLET VALVES.
H. ALL PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE SLEEVED AND/OR PATCHED AS DIRECTED BY THE SPECIFICATIONS. PATCHING SHALL MATCH FINISH (SEE ARCH. DRAWINGS).
I. ALL VENTS SHALL BE MINIMUM OF 25'-0" AWAY FROM A/C AIR INTAKES, AND PATIENT WINDOWS.
J. CONTRACTOR SHALL PROVIDE TRAP PRIMERS ON ALL FLOOR DRAINS NOT RECEIVING CONSTANT DISCHARGE FROM FIXTURES AND/OR EQUIPMENT, OR AS REQUIRED BY STATE AND LOCAL CODES.
K. ALL SANITARY OR STORMWATER PIPING BELOW GRADE WITH LESS THAN 2 FEET OF EARTH COVER SHALL BE DUCTILE IRON MATERIAL.

UNLESS SPECIFICALLY SHOWN ON THESE PLANS NO STRUCTURAL MEMBER SHALL BE CUT, NEITHER DRILLED NOR NOTCHED. WRITTEN AUTHORIZATION FROM SOR AND OSHPD DSE IS REQUIRED IN ADVANCE.

PLUMBING ABBREVIATIONS

C.W.	COLD WATER	E.C.O.	EXTERIOR CLEANOUT
H.W.	HOT WATER	R.D.	ROOF DRAIN
H.W.R.	HOT WATER RECIRC	F.D.	FLOOR DRAIN
V.T.R.	VENT THRU ROOF	P.R.V.	PRESSURE REDUCING VALVE
F.S.	FLOOR SINK	R.P.B.P.	REDUCED PRESSURE BACKFLOW PREVENTER
W.	WASTE (INTERIOR)	A.F.F.	ABOVE FINISHED FLOOR
R.W.L.	RAIN WATER LEADER	A.F.G.	ABOVE FINISHED GRADE
S.W.	STORM WATER	A.P.	ACCESS PANEL
F.E.	FIRE EXTINGUISHER	W.C.O.	WALL CLEANOUT
I.E.	INVERT ELEVATION	S.S.	SANITARY SEWER
G.R.	GREASE WASTE	C.O.	CLEANOUT
H.W.P.	HOT WATER RECIRC PUMP	F.P.W.	FILM PROCESSING WASTE
		F.P.V.	FILM PROCESSING VENT

MEDICAL GAS SCHEDULE

SYMBOL	DESCRIPTION	EQUIPPED WITH	REMARKS
A	WALL OUTLET	1-O, 1-V, 1-S, 1-A	
B	WALL OUTLET	1-O, 1-V, 1-S, 1-A	
C	WALL OUTLET	2-O, 3-V, 2-S	
D	WALL OUTLET	2-O, 3-V, 2-S, 1-A	
E	HOSE DROP	2-O, 3-V, 1-A, 1-N2O, 1-N, 1-EVAC	
F	WALL OUTLET	1-N	
G	RECESSED VALVE BOX	WITH GAUGES	
H	LINE PRESS. ALARM	O2, A, V	
I	WALL OUTLET	1-O, 1-A	
J	LINE PRESS. ALARM	O2, V, A, N2O, N2	
K	NITROGEN CONTROL CAB.	N2	
L	MULTI-SIGNAL ALARM		

MEDICAL GAS LEGEND

SYMBOL	DESCRIPTION
A	COMPRESSED AIR
V	VACUUM
O_2	OXYGEN
N_2	NITROGEN
N_2O	NITROUS OXIDE
VE	VACUUM PUMP EXHAUST LINE
AI	AIR COMPRESSOR INTAKE LINE
EVAC	EVACUATION OUTLET IN O.R.'s CONNECTED TO VACUUM PIPING SYSTEM
S	MEDICAL VACUUM SLIDE BRACKET
	MEDICAL GAS OUTLET (SEE MED. GAS SCHED.)

MEDICAL GAS EQUIPMENT SCHEDULE

ITEM	MANUFACTURER & MODEL NO.	H.P.	V	PH	H.P. TOTAL	DESCRIP.
MEDICAL VACUUM PUMP (MVP-1)	BEACON MEDICAL PRODUCTS LPV-100-N200	55	110	480 3 60	20	200 GALLON RECEIVER

WATER HEATER SCHEDULE

DOMESTIC	TYPE	NO. REQ'D	MFGR.	MODEL NO.	EWT	LWT	STORAGE CAPACITY	FLOW RECOVERY	TANK SIZE	REMARKS
WH-1 WH-2	STEAM	2	AERCO	B-106/2,00/P	60	140	X	45 GPM		1,200 lbs STEAM/HR

RECIRC. BALANCING VALVE SCHEDULE

SYMBOL	GPM
A	.5
B	.75
C	1.0

PUMP SCHEDULE

SYSTEM	TYPE	MANUFACTURER	MODEL NO.	G.P.M.	HEAD FT.	PUMP SUCTION	PUMP DISCHARGE	H.P.	VOLTAGE	REMARKS
HOT WATER RECIRC PUMP-1	IN LINE	B & G	PL-30	7	20	X	X	1/12	120 1 60	ALL BRONZE ②
HOT WATER RECIRC PUMP-2	IN LINE	B & G	NBF-105 /LW	3	11	X	X	1/12	120 1 60	ALL BRONZE ②
DUPLEX BOOSTER PUMP (BP-1)	DOMESTIC	SYNCROFLO BOOSTART 3000 SERIES	MODEL 2DM1H	200 200	81 35 PSI	88 38 PSI	169 73 PSI	2@ 5.0 EA	460 3 60	3050 RPM 4"HEADER ① ②

① PROVIDE COPPER HEADERS, FUSED DISCONNECTS, AND LOW WATER CUTOFF SWITCH.
②

FIXTURE CONNECTION SCHEDULE

IDENTITY	FIXTURE		C.W.	H.W.	WASTE	2019 CPC 2022 TABLE 6-3, 7-3 SUPPLY FIXTURE UNITS	DRAINAGE FIXTURE UNITS
P-2A	WATER CLOSET	FLOOR MOUNTED-VALVE-PUBLIC	1"	X	4"	10	6
P-3A	WATER CLOSET	FLOOR MOUNTED-BARRIER FREE-PUBLIC	1"	X	4"	10	6
P-4A	WATER CLOSET	FLOOR MTD-BARRIER FREE-F.V.-PATIENT	1"	X	4"	6	6
P-7	URINAL	WALL HUNG-BARRIER FREE	3/4	X	2"	5	2
P-11	LAVATORY	WALL HUNG-PHOTO EYE-STAFF	1/2	1/2	1 1/4	2	1
P-12	LAVATORY	WALL HUNG-KITCHEN-FOOT OPERATED	1/2	1/2	1 1/4	2	1
P-13	LAVATORY	WALL HUNG-BARRIER FREE-PUBLIC	1/2	1/2	1 1/4	2	1
P-15	LAVATORY	DROP-IN-OVAL-BARRIER FREE-PUBLIC	1/2	1/2	1 1/4	2	1
P-16	LAVATORY	WALL HUNG-BARRIER FREE-PATIENT	1/2	1/2	1 1/4	1	1
P-17	LAVATORY	DROP-IN-OVAL-BARRIER FREE-PATIENT	1/2	1/2	1 1/4	1	1
P-18	SINK	S.S.- FILM PROCESSING SINK	1/2	1/2	1 1/2	2	2
P-19	SINK	S.S. - (STAFF)	1/2	1/2	1 1/2	2	2
P-20	SINK	S.S. - PHOTO EYE (STAFF)	1/2	1/2	1 1/2	2	2
P-22	SINK	S.S. - (STAFF)	1/2	1/2	1 1/2	2	2
P-24	LAB SINK	S.S.	1/2	1/2	1 1/2	2	2
P-25	CLINICAL SINK	WALL HUNG - (STAFF)	1"	1/2	4"	10	6
P-26	SCRUB SINK	ROUGH-IN ONLY	1/2	1/2	1 1/2	2	2
P-34	SERVICE SINK	FLOOR BASIN (24"x24")	1/2	1/2	3"	2	6
P-39	SHOWER	BARRIER-FREE - TILE	1/2	1/2	2"	2	2
P-43	EMERGENCY SHOWER/EYE AND FACE WASH		1 1/4	3/4	1 1/4	2	2
P-48	ROOF DRAIN-OVERFLOW		X	X	AS SHOWN	X	X
P-49	ROOF DRAIN - PRIMARY		X	X	AS SHOWN	X	X
P-50	FLOOR DRAIN	REGULAR	X	X	AS SHOWN	X	1
P-51	FLOOR DRAIN	EQUIPMENT ROOMS	X	X	AS SHOWN	X	1
P-53	FLOOR DRAIN	HALF GRATE	X	X	AS SHOWN	X	1
P-54	FLOOR DRAIN	FUNNEL	X	X		X	1
P-56	FLOOR DRAIN	(ACID RESISTANT)	X	X	AS SHOWN	X	1
P-58	TRAP PRIMER		X	X	AS SHOWN	X	X
P-60	DRINKING FOUNTAIN	(BARRIER FREE-WALL HUNG)	1/2	X	1 1/2	1	1
P-62	WALL HYDRANT	(COLD WATER) NON-FREEZE	3/4	X	X	3	X
P-64	COLD WATER FAUCET	MECHANICAL EQUIPMENT ROOM)	1/2	X	X	3	X
P-65	SHOCK ABSORBER		X	X	X	X	X
P-66	EMERGENCY EYE/FACE WASH (LAB)	(DECK MOUNTED)	1/2	1/2	X	2	X
P-67	EMERGENCY WATER SUPPLY CONNECTION		2 1/2	X	X	X	X
P-68	HOT WATER SUPPLY AND DRAIN BOX		X	1/2	INDIRECT	2	1
P-69	FILM PROCESSOR PIPING CONNECTION	(C.W. ONLY)	1/2	X	INDIRECT	2	1
P-71	CART WASH		1/2	1/2	4"	2	2
P-72	PHARMACY SINK	S.S.	1/2	1/2	1 1/2	2	2
P-73	DOWNSPOUT NOZZLE		X	X	AS SHOWN	X	X
P-74	ICE AND/OR COFFEE MAKER CONNECTION		1/2	X	X	X	X
P-80	RO SUPPLY AND DRAIN BOX		1/2 (RO)	X	INDIRECT	1	1
P-82	HOT AND COLD WATER SUPPLY BOX		1/2	1/2	X	2	X

PLUMBING LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
C.W.	COLD WATER		BALL VALVE
H.W.	HOT WATER		CHECK VALVE
H.W.R.	HOT WATER RECIRCULATION		UNION IN PIPE
C.W. (B.F.F.)	COLD WATER (BELOW FLOOR)		FIRE EXTINGUISHER CABINET
W	WASTE LINE (ABOVE FLR OR BELOW GROUND)	EC	EXTERIOR CLEANOUT
W (B.F.F.)	WASTE LINE (BELOW FLOOR)	P-ETC	FIXTURE INDENTIFICATION
V (V.T.R.)	VENT PIPE (ABOVE OR BELOW FLOOR)		RISER INDENTIFICATION
D	DRAIN LINE		CONNECTION TO EXISTING
G	NATURAL GAS LINE OR MAIN		FIRE EXTINGUISHER - WALL HUNG
F.P.W.	FILM PROCESSING WASTE		PRESSURE SWITCH
F.P.V.	FILM PROCESSING VENT		CAP ON LINE
G.W.	GREASE WASTE		GAS COCK
R.W.L.	RAIN WATER LEADER		PRESSURE REDUCING VALVE
S.W.	STORM WATER (UNDERGROUND)		BALANCING VALVE
CO	CLEANOUT (ABOVE CEILING)		PIPE TURNED UP
OD	OVERFLOW DRAIN		PIPE TURNED DOWN
	WASTE LINE W/ FM 1680 COUPLINGS		PIPE TURNED UP WITH TRAP

PLUMBING INDEX

SHEET NO.	SHEET TITLE
P0.01	PLUMBING - SCHEDULES
P0.02	SITE PLAN - PLUMBING
PU1.01	UNDERGROUND - FLOOR PLAN - PART A
PU1.02	UNDERGROUND - FLOOR PLAN - PART B
P1.01	PLUMBING - 1ST FLOOR PLAN - PART A
P1.02	PLUMBING - 1ST FLOOR PLAN - PART B
P1.03	PLUMBING - 2ND FLOOR PLAN - PART A
P1.04	PLUMBING - 2ND FLOOR PLAN - PART B
P1.05	PLUMBING - ROOF PLAN - PART A
P1.06	PLUMBING - ROOF PLAN - PART B
P2.01	MEDICAL GAS - 1ST FLOOR PLAN - PART A
P2.02	MEDICAL GAS - 1ST FLOOR PLAN - PART B
P2.03	MEDICAL GAS - 2ND FLOOR PLAN - PART A
P2.04	MEDICAL GAS - 2ND FLOOR PLAN - PART B
P3.01	PLUMBING - LARGE SCALE MECH. ROOM
P3.02	PLUMBING - LARGE SCALE KITCHEN
P4.01	PLUMBING - RISERS
P5.01	PLUMBING - DETAILS
P5.02	PLUMBING - DETAILS

SURGICAL SPECIALTY HOSPITAL

ISSUE DATE: 01-02-05

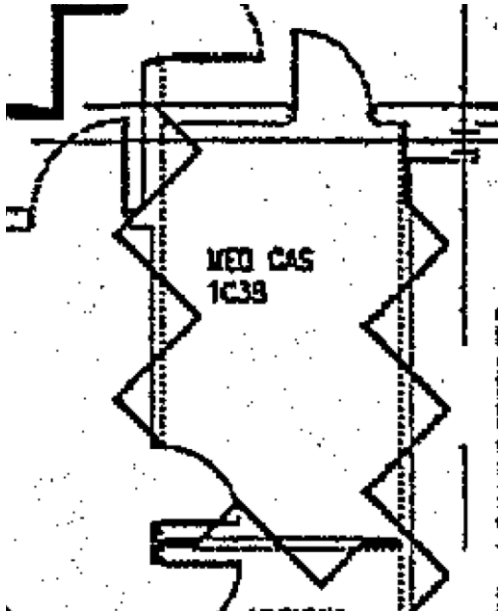
LEVEL	DATE	DESCRIPTION

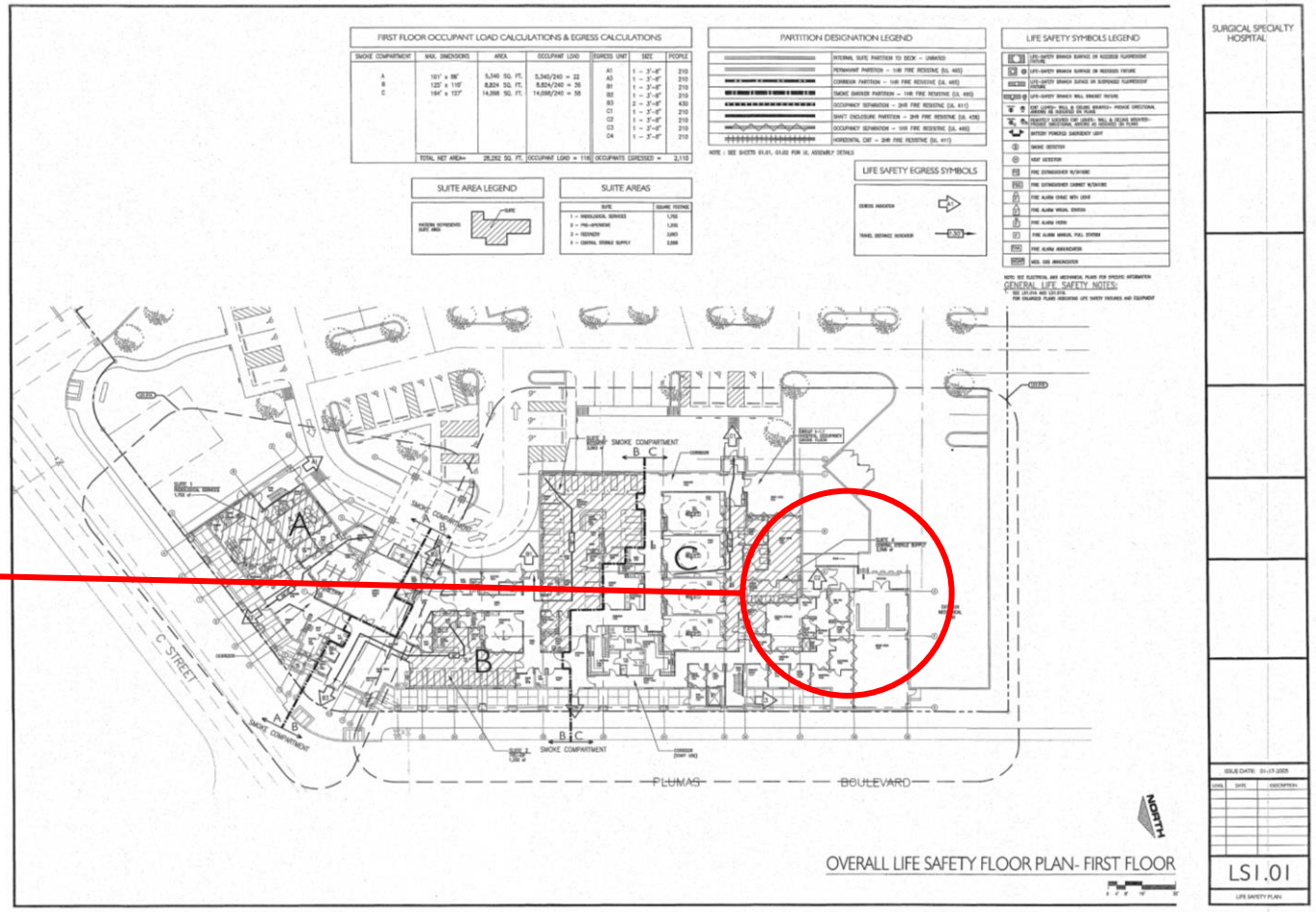
P0.01

PLUMBING - SCHEDULES

The source valve for the nitrogen system is located in room _____.

Then you need to think where the location would be. Typically, it is in the MedGas Room

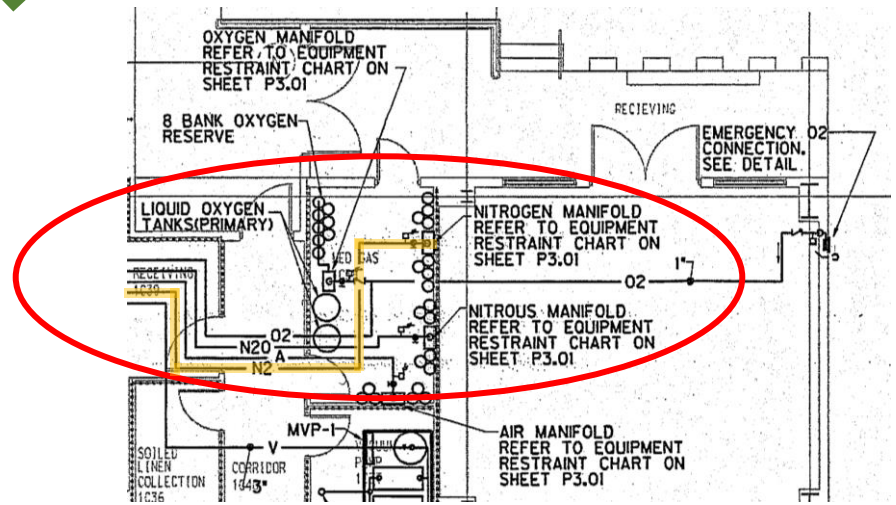


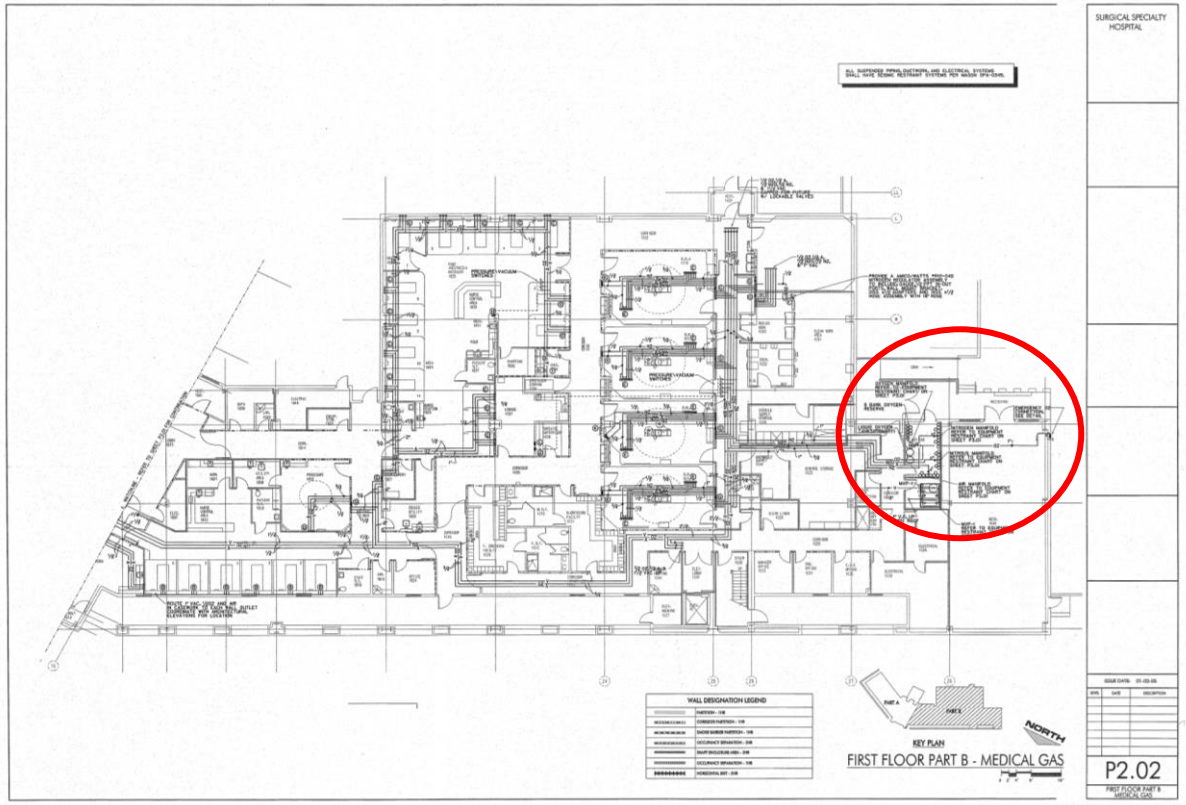


The source valve for the nitrogen system is located in room _____.

A. 1C38
B. 1C37
C. 1C03
D. 1C25

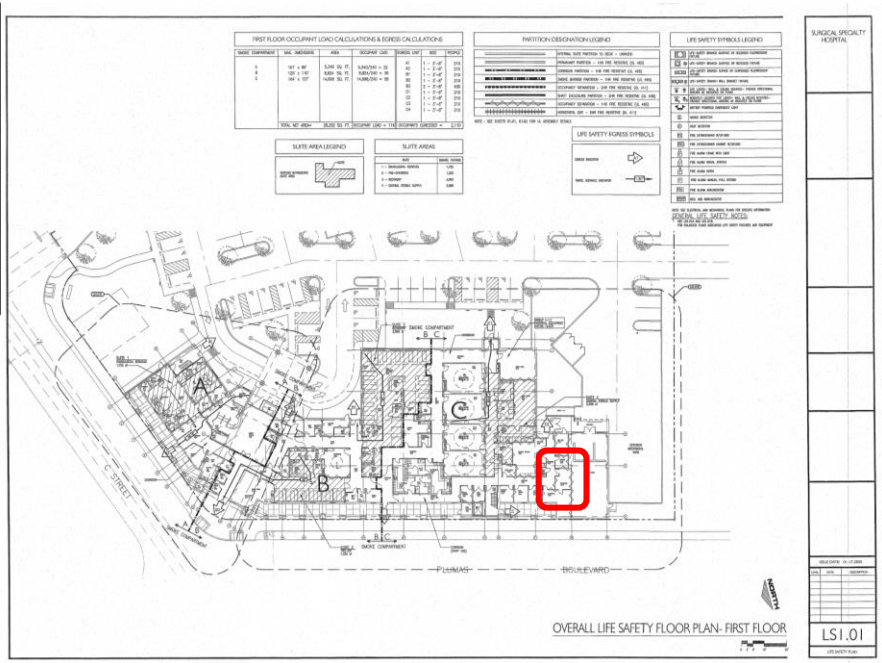
Now, go to the MedGas Plan for that location



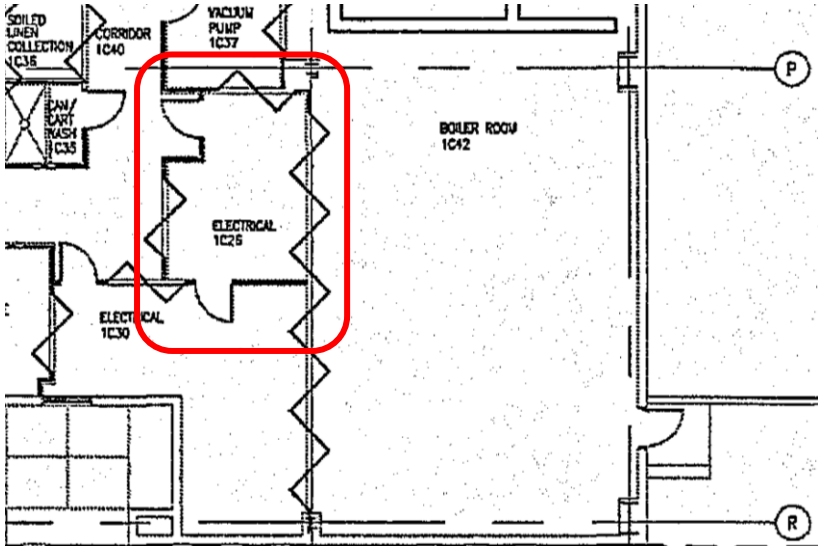


Example #3

Combination fire and smoke dampers are installed in the supply and return air duct penetrations through the wall of Electrical Room 1C26.

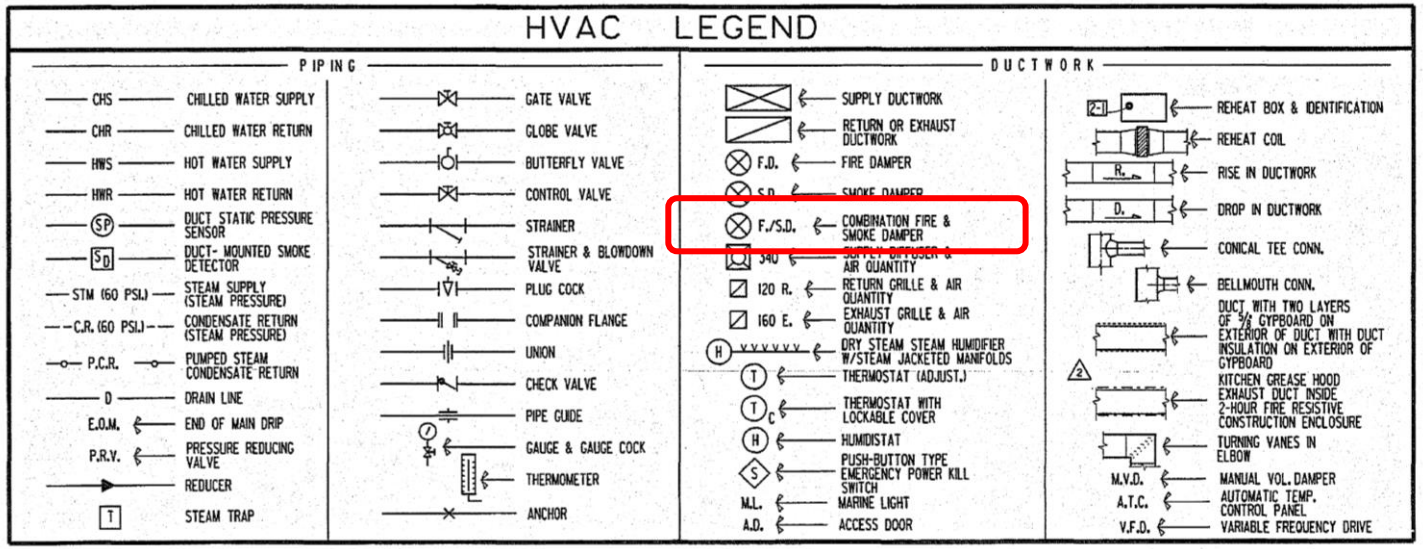


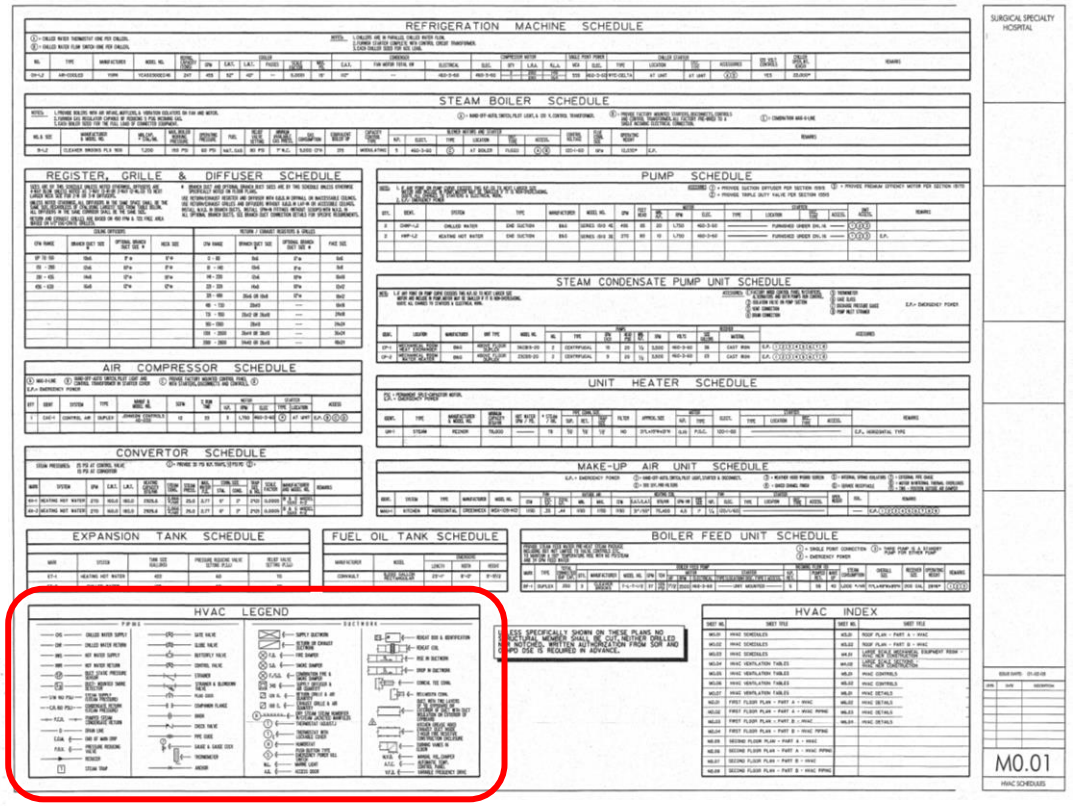
What do you have to look for?
Look for 1C26.
If you cannot find in the HVAC sheets, because the drawings are too busy…. Look in a different place, like LS1.01



Combination fire and smoke dampers are installed in the supply and return air duct penetrations through the wall of Electrical Room 1C26.

Then, you need to look the symbol about Fire and Smoke Dampers

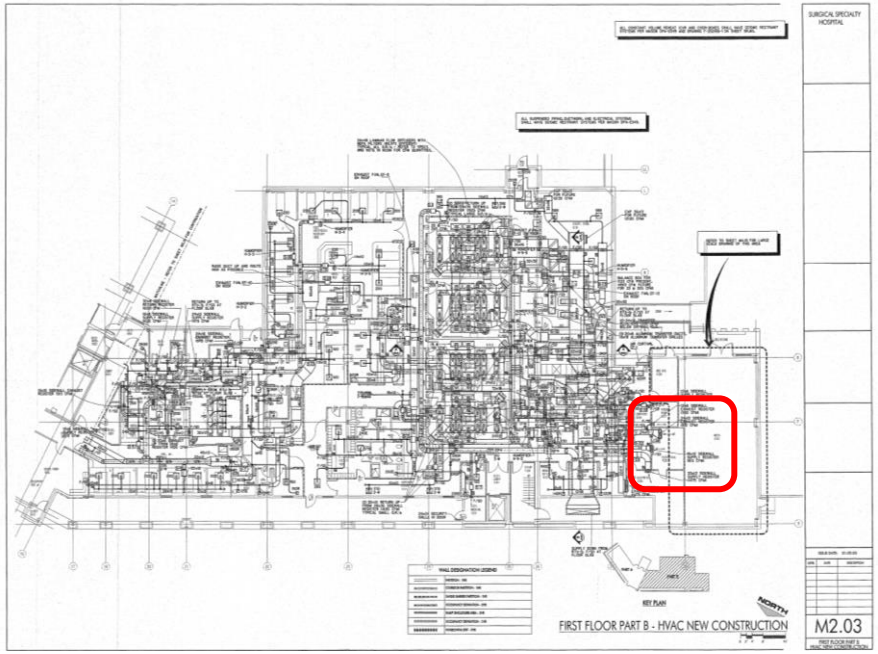


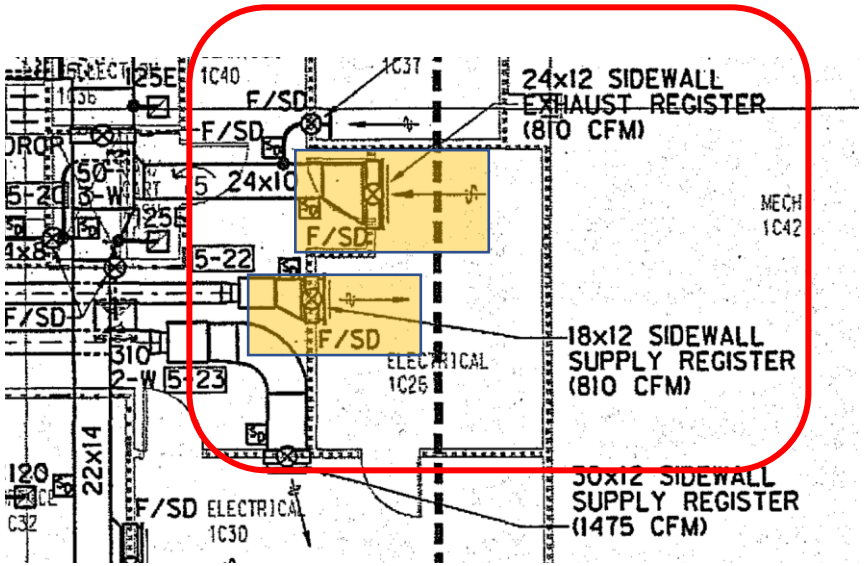


Combination fire and smoke dampers are installed in the supply and return air duct penetrations through the wall of Electrical Room 1C26.

A. True
B. False

And now, go to the HVAC plan



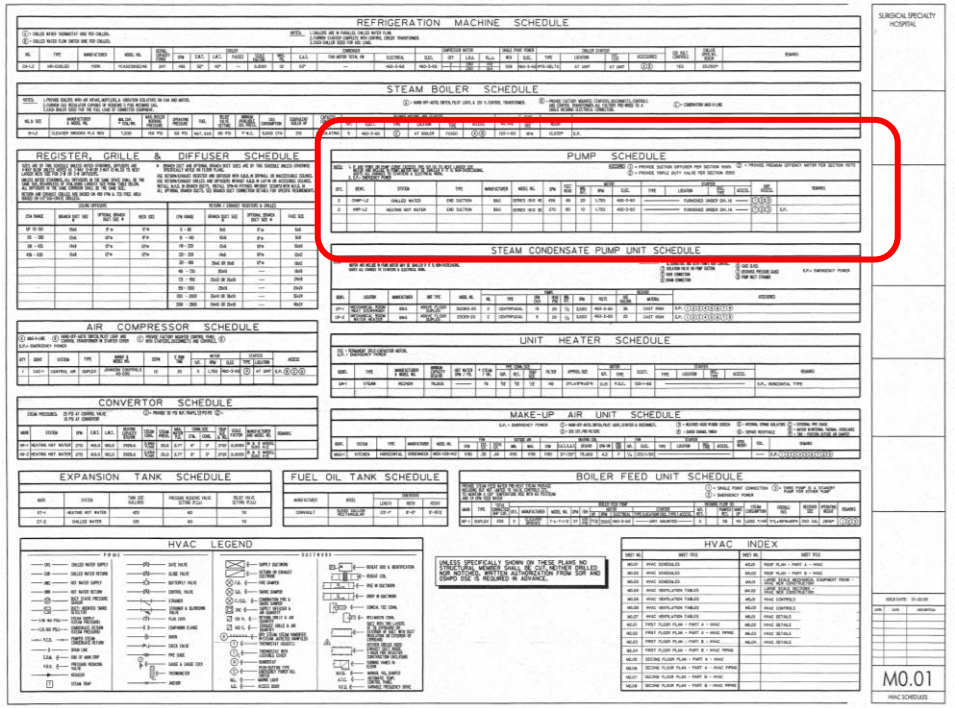


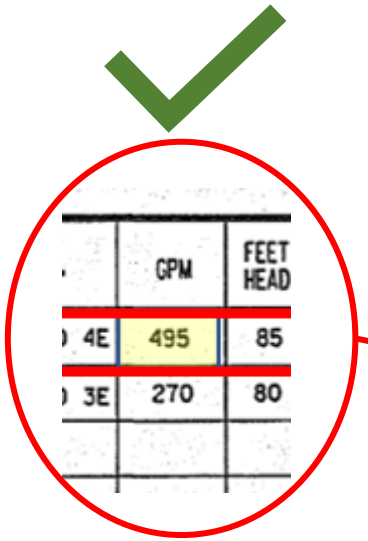
Example #4

What is the specified flow at CHWP-1?

A. 270 GPM
B. 400 GPM
C. 495 GPM
D. 1750 GPM

To find the flow for the chilled water, CHWP-1, look into the pump schedule





PUMP SCHEDULE

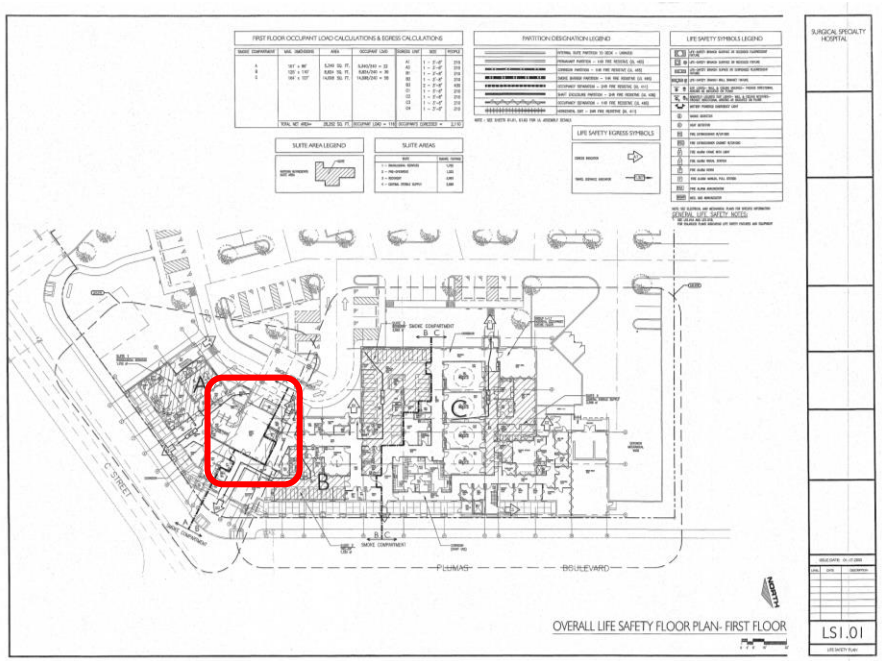
NOTE: 1. IF ANY POINT ON PUMP CURVE EXCEEDS THIS H.P. GO TO NEXT LARGER SIZE MOTOR AND INCLUDE ALL CHANGES TO STARTERS & ELECTRICAL WORK. PUMP MOTOR MAY BE SMALLER IF IT IS NON-OVERLOADING.
2. E.P.= EMERGENCY POWER

ACCESSORIES (1) = PROVIDE SUCTION DIFFUSER PER SECTION 15515 (3) = PROVIDE PREMIUM EFFIENCY MOTOR PER SECTION 15170
(2) = PROVIDE TRIPLE DUTY VALVE PER SECTION 15515

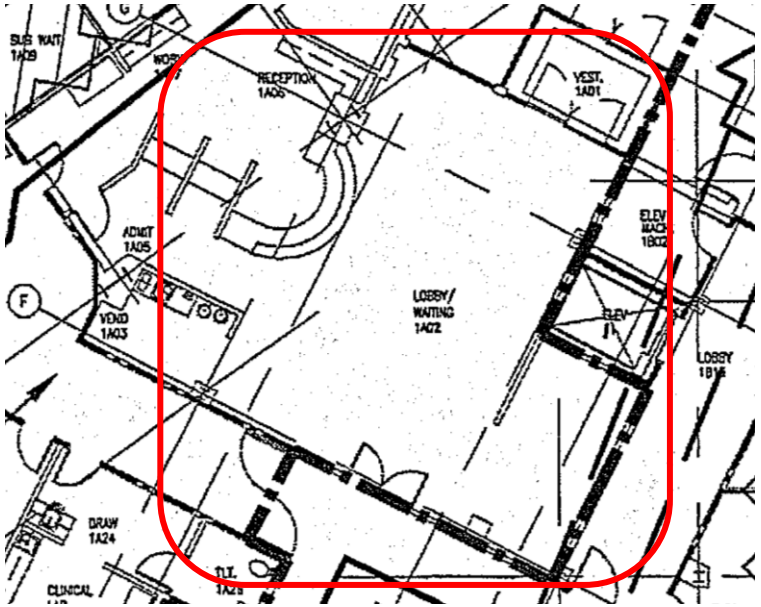
QTY.	IDENT.	SYSTEM	TYPE	MANUFACTURER	MODEL NO.	GPM	FEET HEAD	MOTOR MIN. H.P.	MOTOR RPM	MOTOR ELEC.	STARTER TYPE	STARTER LOCATION	STARTER DISC. TYPE	STARTER ACCESS.	UNIT ACCESS.	REMARKS
2	CHWP-1,2	CHILLED WATER	END SUCTION	B&G	SERIES 1510 [illegible]	495	85	20	1,750	460-3-60	FURNISHED UNDER DIV. 16				(1)(2)(3)	
2	[illegible]	HEATING HOT WATER	END SUCTION	B&G	SERIES 1510 3[illegible]	270	80	10	1,750	460-3-60	FURNISHED UNDER DIV. 16				(1)(2)(3)	E.P.

Example #5

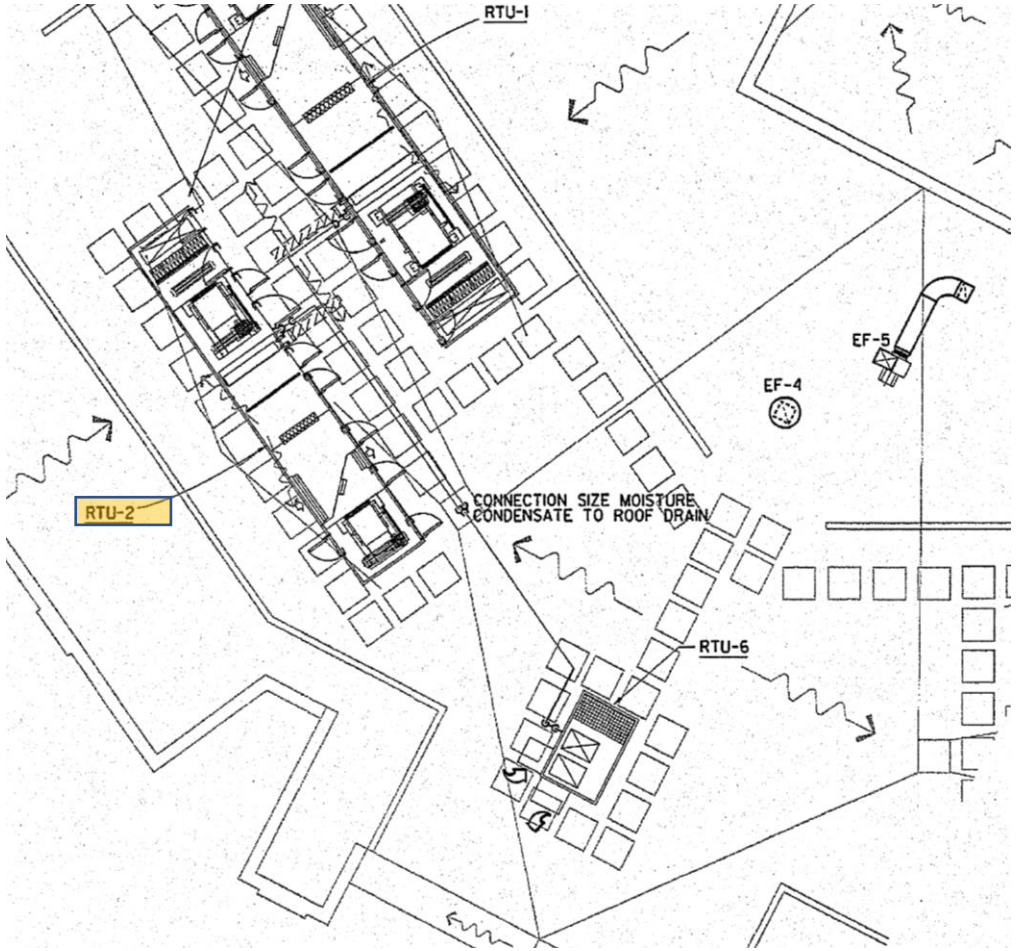
Supply air in lobby / waiting room 1A02 is _____ CFM.

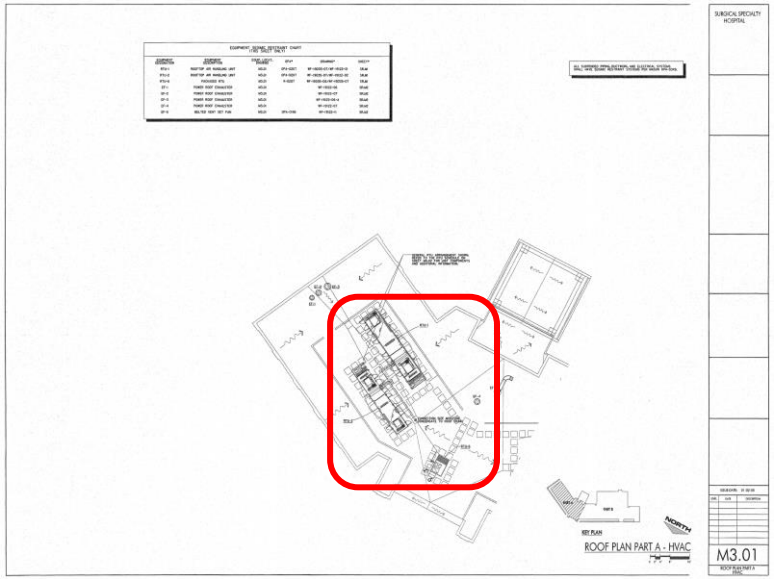


What do you have to look for?
Look for 1A02.
If you cannot find in the Mechanical sheets, because the drawings are too busy…. Look in a different place, like LS1.01



Supply air in lobby / waiting room 1A02 is _____ CFM.



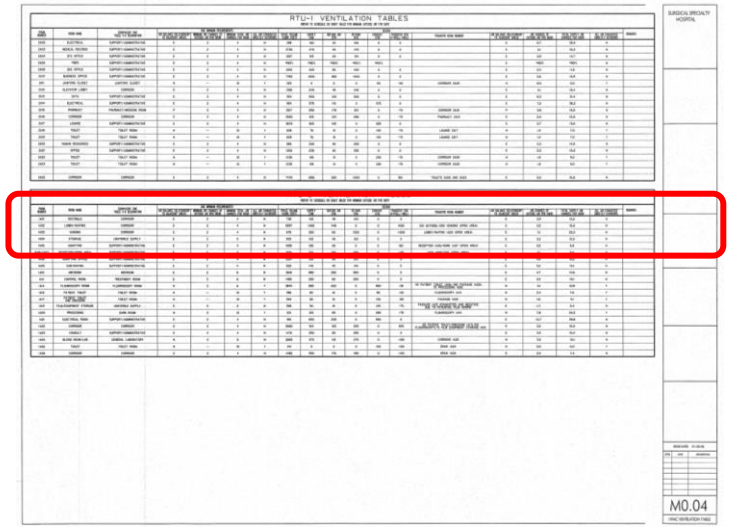


Now that you know where the room is, go to the HVAC Roof Plan.

Supply air in lobby / waiting room 1A02 is _____ CFM.

A. 0
B. 448
C. 1,400
D. 8,397

Knowing it is RTU-2 the unit for 1A02, go to the RTU-2 schedule, and find the Supply Air CFM information for 1A02



RTU-2 VENTILATION TABLES

(REFER TO SCHEDULE ON SHEET M0.02 FOR MINIMUM OUTSIDE AIR FOR UNIT)

ROOM NUMBER	ROOM NAME	EQUIVALENT CMC TABLE 4-A DESIGNATION	CMC MINIMUM REQUIREMENTS				DESIGN											REMARKS
			AIR BALANCE RELATIONSHIP TO ADJACENT AREAS	MINIMUM AIR CHANGES OF OUTSIDE AIR PER HOUR	MINIMUM TOTAL AIR CHANGES PER HOUR	ALL AIR EXHAUSTED DIRECTLY OUTDOORS	SPACE VOLUME (CUBIC FEET)	SUPPLY CFM	OUTSIDE AIR CFM	RETURN CFM	EXHAUST CFM	TRANSFER CFM (+=POS.; -=NEG.)	TRANSFER ROOM NUMBER	AIR BALANCE RELATIONSHIP TO ADJACENT AREAS	AIR CHANGES OF OUTSIDE AIR PER HOUR	TOTAL SUPPLY AIR CHANGES PER HOUR	ALL AIR EXHAUSTED DIRECTLY OUTDOORS	
1A02	LOBBY/WAITING	CORRIDOR	E	2	4	N	8397	1400	448	0	0	1400	100 OUTSIDE; 1300 VENDING (OPEN AREA)	E	3.2	10.0	N	

Homework

Homework #1

Room 1A24 will transfer 100 CFM from _____.

A. Corridor 1A28
B. Draw 1A24
C. None of the above
D. Both A and B

Homework #2

What type of plumbing fixture is shown in room 1C04?

A. Lavatory wall hung
B. Lavatory drop in
C. Sink SS photo eye (staff)
D. Sink SS (staff)

See you at Part 2

Send your Homework Responses to:
OSHPD.fddisu@oshpd.ca.gov


Q&A