

SEQUENCE OF OPERATION:

1. SYSTEM IS ENABLED THROUGH THE BAS BASED ON AN OPERATOR DEFINED SCHEDULE. ONCE ENABLED THE AIR HANDLING UNIT SHALL OPERATE CONTINUOUSLY IN ACCORDANCE WITH THE FOLLOWING SEQUENCE OF OPERATION

DAMPER CONTROL:

1. UPON ACTIVATION OF THE SUPPLY AIR FAN, OUTDOOR AIR DAMPER (DPR-1) SHALL BE POWERED OPEN AND ONCE PROVEN OPEN THE BAS SHALL ENABLE THE SUPPLY AIR FAN TO START / OPERATE.
2. UPON ACTIVATION OF THE RETURN AIR HANDLING SYSTEM, EXHAUST AIR DAMPER (DPR-2) SHALL BE POWERED OPEN AND ONCE PROVEN OPEN THE BAS SHALL ENABLE THE EXHAUST AIR FAN TO START / OPERATE.
3. STATUS OF EACH DAMPER SHALL BE MONITORED BY THE BAS. GENERATE AN ALARM IF DAMPER STATUS DOES NOT MATCH COMMAND.

FAN CONTROL:

1. THE SUPPLY AIR FAN SHALL MODULATE TO MAINTAIN SUPPLY AIR DUCT STATIC PRESSURE. AS PRESSURE DECREASES FAN SPEEDS UP, AS PRESSURE INCREASES FAN SLOWS DOW
2. STATUS OF SUPPLY AIR FAN SHALL BE MONITORED BY THE BAS. UPON FAILURE OF SUPPLY AIR FAN, THE ASSOCIATED FAN ISOLATION DAMPER SHALL CLOSE (IF APPLICABLE) AND AN ALARM SHALL BE GENERATED.
3. THE RETURN AIR FAN SHALL BE INTERLOCKED WITH THE SUPPLY AIR FAN.
4. STATUS OF RETURN AIR FAN SHALL BE MONITORED BY THE BAS. UPON FAILURE OF RETURN AIR FAN, THE FAN ISOLATION DAMPER SHALL CLOSE (IF APPLICABLE) AND AN ALARM SHALL BE GENERATED.

HEAT RECOVERY SYSTEM CONTROL:

1. THE HEAT RECOVERY WHEEL SHALL OPERATE CONTINUOUSLY BASED ON MANUFACTURER DESIGNED SCHEDULE
2. BYPASS DAMPERS (DPR-4, DPR-5) TO MODULATE BASED ON MANUFACTURER'S DESIGNED SCHEDULE

COOLING CONTROL:

1. DX HEAT PUMP COIL SHALL MODULATE TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT DA-T (55°F) (ADJUSTABLE)
2. DX HEAT PUMP COIL STATUS/POSITION TO BE MONITORED BY THE BAS.

HEATING CONTROL:

1. DX HEAT PUMP COIL SHALL MODULATE TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT DA-T (55°F) (ADJUSTABLE).
2. DX HEAT PUMP COIL STATUS/POSITION SHALL BE MONITORED BY THE BAS.
3. THE SUPPLY AIR TEMPERATURE SHALL CONTINUOUSLY RESET BASED ON SPACE CONDITIONS.(RESET TEMPERATURE RANGE OF 55F-70F)

ECONOMIZER MODE:

1. OUTSIDE AIR, MIXED AIR & EXHAUST AIR DAMPERS TO MODULATE TO PROVIDE FREE COOLING WHEN OUTDOOR AMBIENT CONDITIONS ALLOW

HUMIDIFIER CONTROL:

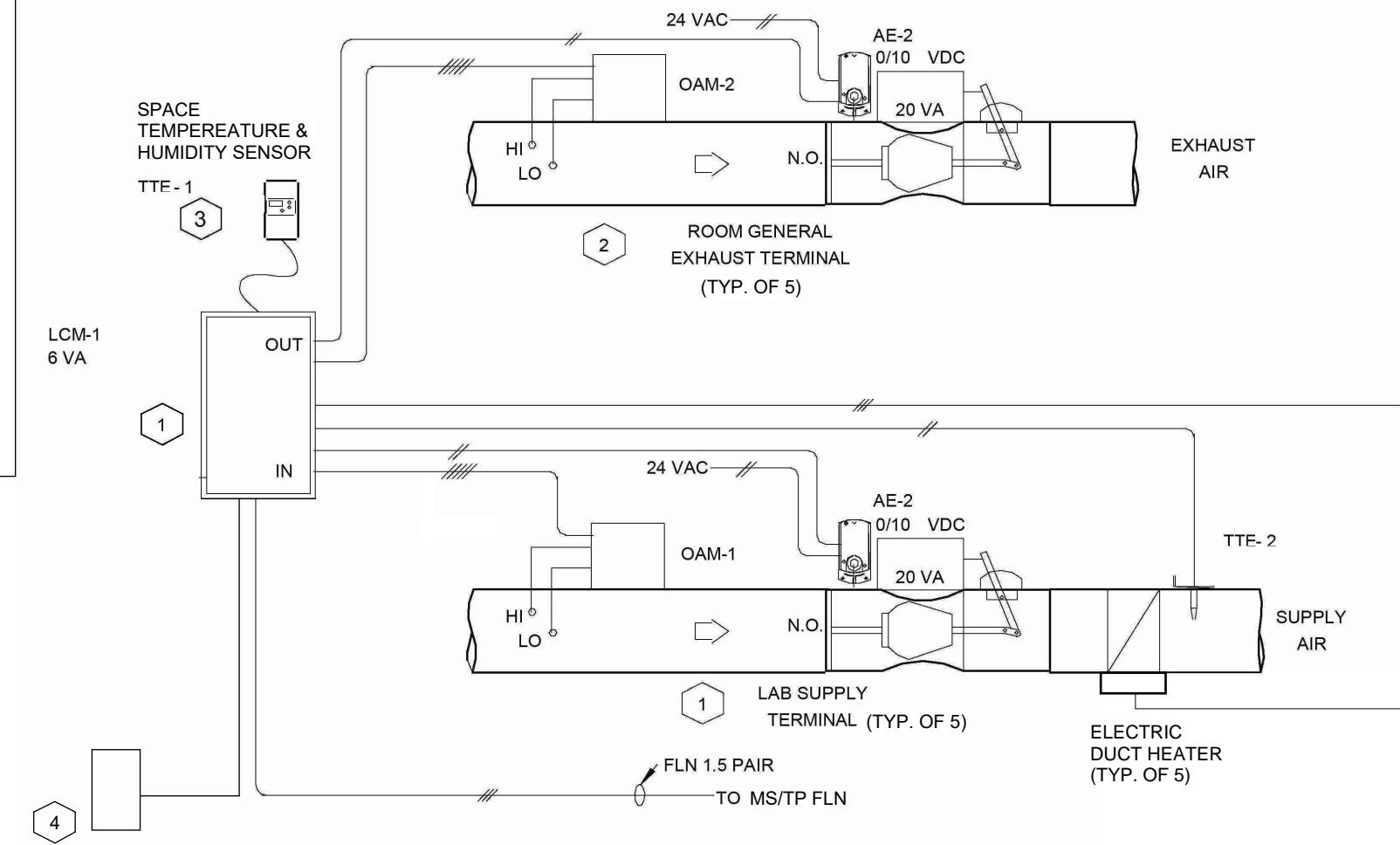
1. WATER-TO-STEAM HUMIDIFIER SHALL BE ENABLED/DISABLED WHENEVER OUTDOOR AIR TEMPERATURE (OA-T) IS SENSED TO BE BELOW 50°F (ADJUSTABLE).
2. ONCE ENABLED, WATER-TO-STEAM HUMIDIFIER SHALL MODULATE TO MAINTAIN A HUMIDITY SETPOINT OF 50% R.H. (ADJUSTABLE), AS SENSED BY GENERAL RETURN AIR HUMIDITY SENSOR RA-H AND REPORTED BY THE BAS.
3. WATER-TO-STEAM HUMIDIFICATION STATUS SHALL BE MONITORED BY THE BAS.
4. WATER-TO-STEAM HUMIDIFIER SHALL BE INTERLOCKED WITH SUPPLY AIR FAN OPERATION. WHENEVER THE SUPPLY AIR FAN(S) ARE ENABLED, THE HUMIDIFICATION SYSTEM SHALL BE ALLOWED TO OPERATE. WHENEVER THE SUPPLY AIR FAN(S) ARE DISABLED THE HUMIDIFICATION SYSTEM SHALL NOT BE ALLOWED TO OPERATE.

NOTES:

1. FREEZE STAT. UPON ACTIVATION OF THE FREEZE STAT, SUPPLY AIR FAN(S) AND GENERAL RETURN AIR FAN(S) SHALL BE DE-ENRGIZED VIA A HARDWIRE INTERLOCK. DX HEAT PUMP COIL SHALL BE COMMANDED TO FULL OPEN. OUTSIDE AIR AND EXHAUST AIR DAMPERS SHALL CLOSE AND AN ALARM SHALL BE GENERATED BY THE BAS.
2. HIGH OR LOW PRESSURE SAFETY: UPON ACTIVATION OF A HIGH OR LOW (NEGATIVE) PRESSURE SAFETY SWITCH THE SUPPLY AIR FAN AND RETURN FAN SYSTEM SHALL BE DISABLED. SUPPLY AIR FAN(S) AND RETURN AIR FAN(S) SHALL BE DE-ENRGIZED VIA A HARDWIRE INTERLOCK. OUTSIDE AIR AND EXHAUST AIR DAMPERS SHALL CLOSE AND A ALARM SHALL BE GENERATED BY THE BAS
3. HIGH LIMIT HUMIDITY: HIGH LIMIT HUMIDITY SENSOR SHALL MONITOR SUPPLY AIR HUMIDITY AND SHALL OVERRIDE ALL HUMIDIFICATION CONTROLS TO MAINTAIN A MAXIMUM SUPPLY AIR HUMIDITY SETPOINT OF 80% R.H. (ADJUSTABLE).
4. SMOKE DETECTOR: UPON INDICATION OF SMOKE BY A SMOKE DETECTOR THE AIR HANDLING SYSTEM SHALL BE DISABLED AND AN ALARM SHALL BE GENERATED BY THE BAS.
5. FILTER MONITORING: DIFFERENTIAL PRESSURE SHALL BE MONITORED ACROSS EACH FILTER. A FILTER MAINTENANCE ALARM SHALL BE GENERATED BY THE BAS WHENEVER REPORTED PRESSURE DROP EXCEEDS SETPOINT.
6. FIRE ALARM: UPON ACTIVATION OF FIRE ALARM THE AIR HANDLING SYSTEM SHALL BE DISABLED AND AN ALARM SHALL BE GENERATED BY THE BAS.

INSTALLATION NOTES:

1. LAB SUPPLY VENTURI IS PROVIDED COMPLETE WITH FACTORY INSTALLED
- LAB CONTROL MODULE (LCM)
- HIGH SPEED LAB ELECTRIC ACTUATOR
- O.A.M. OFF BOARD AIR MODULE
2. LAB GENERAL EXHAUST VENTURI IS PROVIDED BY SIEMENS COMPLETE WITH FACTORY INSTALLED
- HIGH SPEED LAB ELECTRIC ACTUATOR
- O.A.M. OFF BOARD AIR MODULE
3. LOCATED AS SHOWN ON FLOOR PLANS. REFER TO ROOM SCHEDULE FOR ROOM NUMBERS.
4. ZONE HVAC DISPLAY MODULE



SEQUENCE OF OPERATION:

1. LABORATORY ZONE TEMPERATURE CONTROL MONITORING SYSTEM SHALL OPERATE UNDER ITS OWN SYSTEM OF SAFETIES AND CONTROLS IN ACCORDANCE WITH THE FOLLOWING SEQUENCE OF OPERATION.

SUPPLY AIR VALVE AND ROOM TEMPERATURE CONTROL:

1. SUPPLY AIR VALVE TRACKS GENERAL EXHAUST AIR VALVE AT AIRFLOW OFFSET INDICATED ON THE DRAWING.
2. HEATING FOR THE SPACE WILL BE PROVIDED BY DUCT-MOUNTED REHEAT COIL LOCATED DOWNSTREAM OF SUPPLY AIR VALVE. UPON A CALL FOR HEATING ELECTRIC REHEAT COIL TO ENERGIZE. ELECTRIC REHEAT COIL TO MODULATE TO MAINTAIN SPACE TEMPERATURE SET-POINT OF 72°F

GENERAL EXHAUST AIR VALVE CONTROL:

1. GENERAL EXHAUST AIR VALVE TO BE BALANCED TO MAINTAIN MAXIMUM & MINIMUM AIR FLOW VALUES INDICATED IN THE SCHEDULES & ON THE DRAWINGS.

PURGE MODE:

1. PURGE MODE SHALL BE INITIATED MANUALLY BY THE USER THROUGH THE ZONE HVAC MONITOR DISPLAY MODULE.
2. ONCE PURGE MODE IS ENABLED THE SUPPLY AIR VALVE & GENERAL EXHAUST SHALL MODULATE TO THEIR MAXIMUM POSITIONS FOR A PRE-DETERMINED PERIOD OF TIME.
3. REHEAT COILS MAINTAIN THEIR NORMAL OPERATION.

NOTES:

1. LAB AIRFLOW AND CONTROLS SYSTEM SHALL INTERFACE WITH THE BUILDING AUTOMATION SYSTEM THROUGH BACNET TO PROVIDE REMOTE MONITORING AND CONTROL FUNCTIONS.
2. PROVIDE TRENDDING OF ZONE TEMPERATURE AND RELATIVE HUMIDITY AT THE BAS WITH DATA LOGGING AT MAXIMUM OF 1 MINUTE INTERVALS. TRENDDING DATA SHALL BE RETAINED AT THE BAS FOR REVIEW AND REPORTING PURPOSES
3. AIR FLOW ALARM - IF THE AIRFLOW FEEDBACK FROM PRIMARY VALVE IS 15% ABOVE OR BELOW SET-POINT FOR 5 MINUTES, GENERATE ALARM. IF THE AIR FLOW FEEDBACK FROM ANY VALVE IS 30% ABOVE OR BELOW SET-POINT FOR 5 MINUTES, GENERATE ALARM
4. LOW SUPPLY AIR TEMPERATURE - IF THE SUPPLY AIR TEMPERATURE IS 15°F LESS THAN SET-POINT FOR 30 MINUTES, GENERATE ALARM

TYPICAL LAB AREA TEMPERATURE CONTROL SCHEMATIC

N.T.S. M501

AIR HANDLING UNIT BAS POINTS LIST									
POINT NAME	UNITS	INPUT			OUTPUT		FEATURES		
		AI	DI	MI	AO	DO	TREND	GRAPH	ALARM
DISCHARGE AIR TEMPERATURE (DAT)	DEG C	X					X	X	X
DISCHARGE AIR HUMIDITY (DAH)	% RH	X					X	X	X
HEAT WHEEL RECOVERED AIR TEMPERATURE	DEG C	X					X	X	
HEAT WHEEL EXHAUST AIR TEMPERATURE	DEG C	X					X	X	X
RETURN AIR TEMPERATURE	DEG C	X					X	X	
RETURN AIR HUMIDITY	% RH	X					X	X	
OUTDOOR AIR TEMPERATURE	DEG C	X					X	X	
OUTDOOR AIR HUMIDITY	% RH	X					X	X	
DISCHARGE AIR PRESSURE	PA	X					X	X	
RETURN AIR PRESSURE	PA	X					X	X	
FRESH AIR FILTER STATUS	CLEAN/DIRTY		X				X	X	X
RETURN AIR FILTER STATUS	CLEAN/DIRTY		X				X	X	X
SUPPLY FAN STATUS	OFF/ON		X				X	X	X
RETURN FAN STATUS	OFF/ON		X				X	X	X
HEAT WHEEL STATUS	OFF/ON		X				X	X	X
SUPPLY FAN COMMAND	OFF/ON				X	X	X	X	
RETURN FAN COMMAND	OFF/ON				X	X	X	X	
HEAT WHEEL COMMAND	OFF/ON				X	X	X	X	
DX COOLING COMMAND	OFF/ON				X	X	X	X	# OF STAGES AS REQUIRED
CONDENSER REHEAT	DISABLE/ENABLE				X	X	X	X	
DX HEATING COMMAND	OFF/ON				X	X	X	X	# OF STAGES AS REQUIRED
AUXILIARY ELECTRIC HEATING COMMAND	DISABLE/ENABLE				X	X	X	X	
HEAT WHEEL SPEED REFERENCE	%				X	X	X	X	
SUPPLY FAN SPEED REFERENCE	%				X	X	X	X	
RETURN FAN SPEED REFERENCE	%				X	X	X	X	
SUPPLY FAN VFD FAULT	NORMAL/ALARM		X				X	X	X
RETURN FAN VFD FAULT	NORMAL/ALARM		X				X	X	X

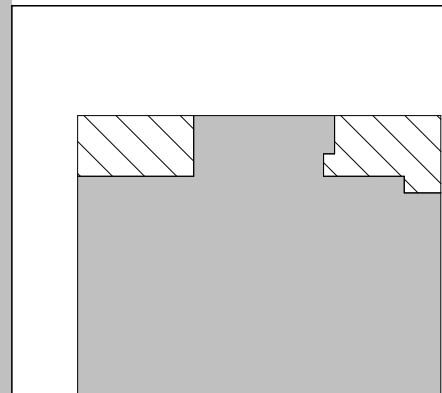
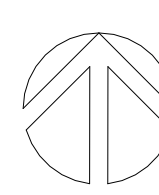
QIS LAB AIR HANDLING UNIT AHU-01 CONTROL SCHEMATIC

N.T.S.

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M501

PROJECT LOGO



KEY PLAN

Issued for 100% Design Development 25/09/19

No.	DESCRIPTION	DATE
5	ISSUED FOR ADDENDUM 1	2025-01-29
4	ISSUED FOR TENDER	2025-11-27
3	ISSUED FOR 100%	2025-11-21
2	ISSUED FOR 90%	2025-10-17
1	ISSUED FOR PERMIT	2025-10-03

REVISIONS

DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE ARCHITECT / ENGINEER BEFORE PROCEEDING.

ONLY FIGURED DIMENSIONS MUST BE USED.

THE CONTRACTOR MUST CHECK THE DIMENSIONS ON SITE.

THE DRAWING IS PROTECTED BY COPYRIGHT.

ALL DIMENSIONS ARE SHOWN IN MILLIMETERS.

DO NOT SCALE THE DRAWINGS.

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SEAL

CONSULTANTS:

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DRAWING TITLE:
**MECHANICAL CONTROL
DIAGRAMS**

DRAWN BY: AR DATE: 25/07/04
CHECKED BY: DR SCALE: N.T.S.

PROJECT NO: **24119**

DRAWINGS NO: **M501**

AIR HANDLING UNIT SCHEDULE (OWNER PROVIDED EQUIPMENT)																																																	
TAG	MFG	MODEL	AREA SERVED	REFRIG.	COOLING										HEATING										SUPPLY FAN								RETURN FAN								ELECTRICAL						OPER. WT.		NOTES
					TOT. CAP.		SENS. CAP. (kW)	EAT DB (°C)	EAT WB (°C)	LAT DB (°C)	LAT WB (°C)	EER (MBH/KW)	CAPACITY @ 8°C AMBIENT	TEMP RISE @ 8°C AMBIENT	COP @ 8°C	CAPACITY @ -8°C AMBIENT	TEMP RISE @ -8°C AMBIENT	COP @ -8°C	AIR FLOW		ESP (Pa)	RPM	MOTOR POWER		AIR FLOW		ESP (Pa)	RPM	MOTOR POWER		VOLT.	PH.	HZ	MCA (A)	MOCp (A)	kg	lbs												
					kW	Tons													L/s	CFM			kW	HP	L/s	CFM			kW	HP																			
AHU-01	ENGINEERED AIR	FWEH243KJ0HRW/CR/MV	QIS LAB	R454B	67	19	47	24.3	17.2	7.9	7.9	9.9	49 kW	-1 °C	3.36	30 kW	-7 °C	2.32	2,360	5,000	497	2999	4.6	6.2	1,888	4,000	497	1971	3.7	5	575	3	60	103	110	5987	13,199												
AHU-02	ENGINEERED AIR	FWEH113KJ0HRW600/CR/MV		R-410A	0	0	0	-273.2	-273.2	-273.2	-273.2	0.0	0 kW	-273 °C		0 kW	-273 °C		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0												

GRILLES, REGISTERS, & DIFFUSERS SCHEDULE			
Mark	MFG	MODEL	NOTES
R-1	PRICE INDUSTRIES	80	EGGCRATE RETURN AIR GRILLE, MOUNTED IN T-BAR CEILING. REFER TO DRAWINGS FOR GRILLE SIZE.
R-2	PRICE INDUSTRIES	80	EGGCRATE RETURN AIR GRILLE, DUCT-MOUNTED. REFER TO DRAWINGS FOR GRILLE SIZE.
S-1	PRICE INDUSTRIES	SPD	STEEL SQUARE PLAQUE SUPPLY DIFFUSER, 600x600 mm FACE. REFER TO PLANS FOR NECK SIZE
S-2	PRICE INDUSTRIES	SPD	STEEL SQUARE PLAQUE SUPPLY DIFFUSER, 600x600 mm FACE. REFER TO PLANS FOR NECK SIZE
S-3	PRICE INDUSTRIES	SPD	STEEL SQUARE PLAQUE SUPPLY DIFFUSER, 600x600 mm FACE. REFER TO PLANS FOR NECK SIZE
S-4	PRICE INDUSTRIES	SPD	STEEL SQUARE PLAQUE SUPPLY DIFFUSER, 600x600 mm FACE. REFER TO PLANS FOR NECK SIZE
S-5	PRICE INDUSTRIES	520	LOUVERED SUPPLY GRILLE, DUCT-MOUNTED, DOUBLE DEFLECTION, C/W OPPOSED BLADE DAMPER FOR BALANCING. REFER TO DRAWINGS FOR GRILLE SIZE.
S-6	PRICE INDUSTRIES	LBP/15A	SILL MOUNTED LINEAR BAR GRILLE. 100MM WIDE X 900MM LONG. FLANGE FRAME. COLOUR TO MATCH FIELD WALL & SILL COLOUR

SILENCER SCHEDULE														
1. ALL DUCT UPSTREAM OF THE SILENCERS SHALL BE INSULATED OUTSIDE TO PREVENT BREAK OUT NOISE. 2. PROVIDE SILENCER SHOP DRAWINGS PREPARED UNDER MFG'S ENGINEER REVIEW WITH P.ENG STAMP. INSTALL PER MFG. RECOMMENDATIONS. 3. CONTRACTOR IS FINANCIALLY RESPONSIBLE TO ENSURE NOISE CONTROL SOLUTION IS DELIVERED AS PER NC LEVELS SPECIFIED DURING DESIGN IN SPACES OR DBA AT SPECIFIED DISTANCE														
TAG	MFG	SILENCER MODEL	WIDTH (MM)	HEIGHT (MM)	LENGTH (MM)	DYNAMIC INSERTION LOSS								VOLUMETRIC FLOW RATE (CFM)
						63	125	250	500	1000	2000	4000	8000	
SL-01	E.H. PRICE	PRICE RL36/ZE	650	600	914	8	12	14	18	15	13	12	9	16
SL-02	E.H. PRICE	PRICE RL36/6G	600	550	914	0	12	23	19	21	20	14	9	9
SL-03	E.H. PRICE	PRICE RL36/6D	1200	350	914	5	9	16	25	22	17	14	11	5

ELECTRIC DUCT HEATER SCHEDULE									
TAG	MFG.	DUCT SIZE (MM)	AIR FLOW		ELECTRICAL				NOTES
			L/s	CFM	kW	V	PH	Hz	
DH-001	THERMOLEC	550 x 350	897	1901	12	208	1	60	
DH-002	THERMOLEC	400 x 250	378	801	5	208	1	60	
DH-003	THERMOLEC	250 x 200	142	301	2	208	1	60	
DH-004	THERMOLEC	450 x 250	472	1000	6	208	1	60	
DH-005	THERMOLEC	450 x 250	472	1000	6	208	1	60	

GENERAL EXHAUST AIR VALVE (GEX) SCHEDULE									
NOTES: 1. TYPICALLY LOW PRESSURE STYLE VALVE BODY; MINIMUM 0.3" WC (150 Pa) PRESSURE 2. STAINLESS STEEL BODY SS304 3. AIR VALVES TO BE PROVIDED WITH CSCP PLATFORM CONTROLS									
TAG	NO. OF VALVES	MFG	MODEL	SIZE	DESIGN AIR FLOW				NOTES
					MIN		MAX		
GEX-001	2	PHOENIX	PVEA212L-AMBHY-BMT	300	CFM	L/s	CFM	L/s	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES
GEX-002	1	PHOENIX	PVEA112L-AMBHY-BMT	300	801	378	801	378	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES
GEX-003	1	PHOENIX	PVEA108L-AMBHY-BMT	200	301	142	269	127	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES
GEX-004	1	PHOENIX	PVEA114L-AMBHY-BMT	300	1000	472	1000	472	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES
GEX-005	1	PHOENIX	PVEA114L-AMBHY-BMT	300	1000	472	1000	472	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES

SUPPLY AIR VALVE (SAV) SCHEDULE

NOTES:
1. TYPICALLY LOW PRESSURE STYLE VALVE BODY; MINIMUM 0.3" WC (150 Pa) PRESSURE
2. STAINLESS STEEL BODY SS304
3. AIR VALVES TO BE PROVIDED WITH CSCP PLATFORM CONTROLS

TAG	NO. OF VALVE	MFG	MODEL	SIZE	DESIGN AIR FLOW				NOTES
					MIN.		MAX.		
					CFM	L/s	CFM	L/s	
SAV-001	2	PHOENIX	PVSA212L-AMDHY-500	300	1901	897	1901	897	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES
SAV-002	1	PHOENIX	PVSA112L-AMDHY-500	300	801	378	801	378	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES
SAV-003	1	PHOENIX	PVSA108L-AMDHY-500	200	301	142	301	142	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES
SAV-004	1	PHOENIX	PVSA114L-AMDHY-500	300	1000	472	1000	472	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES
SAV-005	1	PHOENIX	PVSA114L-AMDHY-500	300	1000	472	1000	472	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES


PLUMBING FIXTURE SCHEDULE				
NOTES: -REFER TO PLUMBING ROUGH-IN SCHEDULE FOR REQUIRED SERVICE CONNECTIONS AND SIZES				
TAG	MFG	MODEL	DESCRIPTION	ACCESSORIES & NOTES
EW-1	GUARDIAN	EYE WASH GBF1849LH-R	EYE WASH - DECK MOUNTED, SWING DOWN	LAWLER MODEL # 911E/F EMERGENCY THERMOSTATIC MIXING VALVE. PROVIDE SHUT-OFFS AT EMERGENCY MIXING VALVE PROVIDE P-TRAP
S-1	FRANKE	AWHBS2419-7	SINGLE BOWL UNDER COUNTER SINK - GRADE 18-10 18 GA. Nominal Dimensions: 483 mm (19") wide x 429 mm (16-7/8") long x 230 mm (9-1/16") high	PROVIDE: - 7074 010.002 COLONY PRO SINGLE HANDLE FAUCET - 570-86820 POINT OF USE THERMOSTATIC WATER MIXING VALVE - PROVIDE TEE, ADAPTORS AND FLEX. COPPER TUBING TO SUIT INSTALLATION. - PROVIDE TEMPERED WATER TO HOT SIDE OF FAUCET. - LFBV170 FAUCET SUPPLIES - 8912CB P-TRAP
S-2	FRANKE	KBX110-18	SINGLE BOWL UNDER COUNTER SINK - GRADE 18-10 18 GA. Nominal Dimensions: 483 mm (19") wide x 429 mm (16-7/8") long x 230 mm (9-1/16") high	PROVIDE: - 7074 010.002 COLONY PRO SINGLE HANDLE FAUCET - 570-86820 POINT OF USE THERMOSTATIC WATER MIXING VALVE - PROVIDE TEE, ADAPTORS AND FLEX. COPPER TUBING TO SUIT INSTALLATION. - PROVIDE TEMPERED WATER TO HOT SIDE OF FAUCET. - LFBV170 FAUCET SUPPLIES - 8912CB P-TRAP

CONVECTOR RADIATOR SCHEDULE							
NOTES: - HEATING SIZED BASED ON 180°F EWT AND 160°F LWT. FLUID: WATER. - COOLING SIZED BASED ON 45°F EWT AND 50°F LWT. FLUID: WATER.							
TAG	MFG.	MODEL	CAPACITY(MBH)		FLOW(GPM)		NOTES
			HEATING	COOLING	HEATING	COOLING	
FCU-1	JAGA	BZBW.038072/2	12	3	1.5	1.5	POWER - 18.8W, 10V FAN SPEED, 24VDC. BUILT-IN WALL STYLE C/W FULL ACCESS FRONT PANEL

AIR COOLED CHILLER SCHEDULE (OWNER PROVIDED EQUIPMENT)																	
TAG	MFG.	MODEL	REFRIGERANT	COOLING		EER	TYPE	EVAPORATOR FLUID			ELECTRICAL				OPERATING WEIGHT		NOTES
				TOTAL COOLING CAPACITY				FLOW (GPM)	VOLUME (USGAL)	V	PH	Hz	MCA	MOCp	kg	lbs	
CH-1	HASKRIS	OPC24-9BG3Q32	R454B	56	Tons	16	CHILLER	40	25	575	3	60	54	70	998	2200	

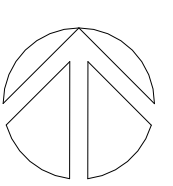

AIR TERMINAL UNIT (VAV) & REHEAT COIL SCHEDULE											
NOTES -UNITS SELECTED TO MEET NC 20 FOR DISCHARGE AND RADIATED NOISE PER AHRI 885-2008 -UNITS TO INCLUDE INTEGRAL 3 FOOT ATTENUATOR WITH PROTECTIVE SHROUD -REHEAT COILS SIZED FOR EAT 55°F, LAT 75°F...											
TAG	AREA SERVED	MFG	MODEL	SIZE	REHEAT COIL CAPACITY		DESIGN AIR FLOW				NOTES
					HEATING	OUTPUT	MIN.		MAX.		
VAV-01	HUB		SDV10	250	MBH	KW	CFM	L/s	CFM	L/s	
VAV-02	MEETING ROOM	PRICE INDUSTRIES	SDV6	150	3.8	1.1	325	153	350	165	C/W ELECTRIC HEATING COIL AND 3FT. SOUND ATTENUATOR
VAV-03	ADMIN OFFICE	PRICE INDUSTRIES	SDV6	150	2.0	0.6	90	42	180	85	C/W ELECTRIC HEATING COIL AND 3FT. SOUND ATTENUATOR
VAV-04	DIRECTOR'S OFFICE	PRICE INDUSTRIES	SDV6	150	3.3	1.0	151	71	301	142	C/W ELECTRIC HEATING COIL AND 3FT. SOUND ATTENUATOR
VAV-05	VISITOR'S OFFICE	PRICE INDUSTRIES	SDV6	150	1.7	0.5	81	38	161	76	C/W ELECTRIC HEATING COIL AND 3FT. SOUND ATTENUATOR
VAV-06	STUDENT/ POST DOCTORATE OFFCE	PRICE INDUSTRIES	SDV6	150	2.7	0.8	125	59	250	118	C/W ELECTRIC HEATING COIL AND 3FT. SOUND ATTENUATOR

PLUMBING ROUGH-IN SCHEDULE						
NOTE: THIS IS A GENERIC SCHEDULE. SOME FIXTURE TYPES SHOWN HERE MAY NOT BE INCLUDED IN THIS WORK. REFER TO PLUMBING SCHEDULE FOR FIXTURES SPECIFIC TO THIS PROJECT.						
ABBRV.	STYLE	DHW	DCW	SAN	VENT	NOTES
EW	EYE WASH	15mm (1/2")	15mm (1/2")	32mm (1 1/4")	32mm (1 1/4")	
KS	KITCHEN SINK	15mm (1/2")	15mm (1/2")	40mm (1 1/2")	32mm (1 1/4")	

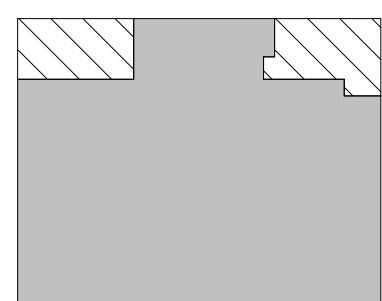


UNIVERSITY OF
TORONTO

PROJECT LOGO



TRUE NORTH
CONSTRUCTION NORTH



KEY PLAN

Issued for 100% Design Development

25/09/19

5	ISSUED FOR ADDENDUM 1	2025-01-29
4	ISSUED FOR TENDER	2025-11-27
3	ISSUED FOR 100%	2025-11-21
2	ISSUED FOR 90%	2025-10-17
1	ISSUED FOR PERMIT	2025-10-03
No.	DESCRIPTION	DATE

REVISIONS:

DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE ARCHITECT / ENGINEER BEFORE PROCEEDING.
ONLY FIGURED DIMENSIONS MUST BE USED.
THE CONTRACTOR MUST CHECK THE DIMENSIONS ON SITE.
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DO NOT SCALE THE DRAWINGS.

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DRAWING TITLE:

SCHEDULES

DRAWN BY:

AR

DATE:

2025/07/04

CHECKED BY:

DR

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PROJECT NO:

24119

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