

CONTROLS DIAGRAM LEGEND	
<div><div><div>SP</div><div>AI</div></div><div>CONTROL POINT</div><div>CONTROL TYPE</div></div>	
ABBREVIATION	DESCRIPTION
AI	ANALOG IN
AO	ANALOG OUT
BP	BYPASS BOX
CV	CONTROL VALVE
D	DAMPER
DA	DISCHARGE AIR
DI	DIGITAL IN
DO	DIGITAL OUT
EA	EXHAUST AIR
EF	EXHAUST FAN
ERV	ENERGY RECOVERY VENTILATOR
F	AIR FLOW
FC	FAIL CLOSED
FL	FAIL LAST POSITION
FO	FAIL OPEN
FS	FREEZESTAT
IA	INTAKE AIR
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTSIDE AIR
P	PRESSURE
POS	POSITION
RA	RETURN AIR
RAD	RADIATOR
RE	RELIEF EXHAUST
RF	RETURN FAN
RHC	REHEAT COIL
HRV	HEAT RECOVERY VENTILATOR
SA	SUPPLY AIR
SET	SETPPOINT
SF	SUPPLY FAN
S/S	START/STOP COMMAND
ST	STATIC
STAT	STATUS
SP	SPACE
T	TEMPERATURE
VAV	VAV TERMINAL UNIT

PLUMBING AND DRAINAGE SYMBOLS LEGEND	
SYMBOL/ABBREVIATION	DESCRIPTION
CO	CLEANOUT
CO	FLOOR CLEANOUT
HD	PLUMBING TRAP
HD	HUB DRAIN
FD	FLOOR DRAIN
RD	ROOF DRAIN
FFD	FUNNEL FLOOR DRAIN
BFP	BACK FLOW PREVENTER
BWV	BACK WATER VALVE
	PIPE BREAK
	WALL MOUNTED LAVATORY
	COUNTER MOUNTED SINK
	FLOOR MOUNTED TOILET
	WALL MOUNTED TOILET
	WALL MOUNTED URINAL

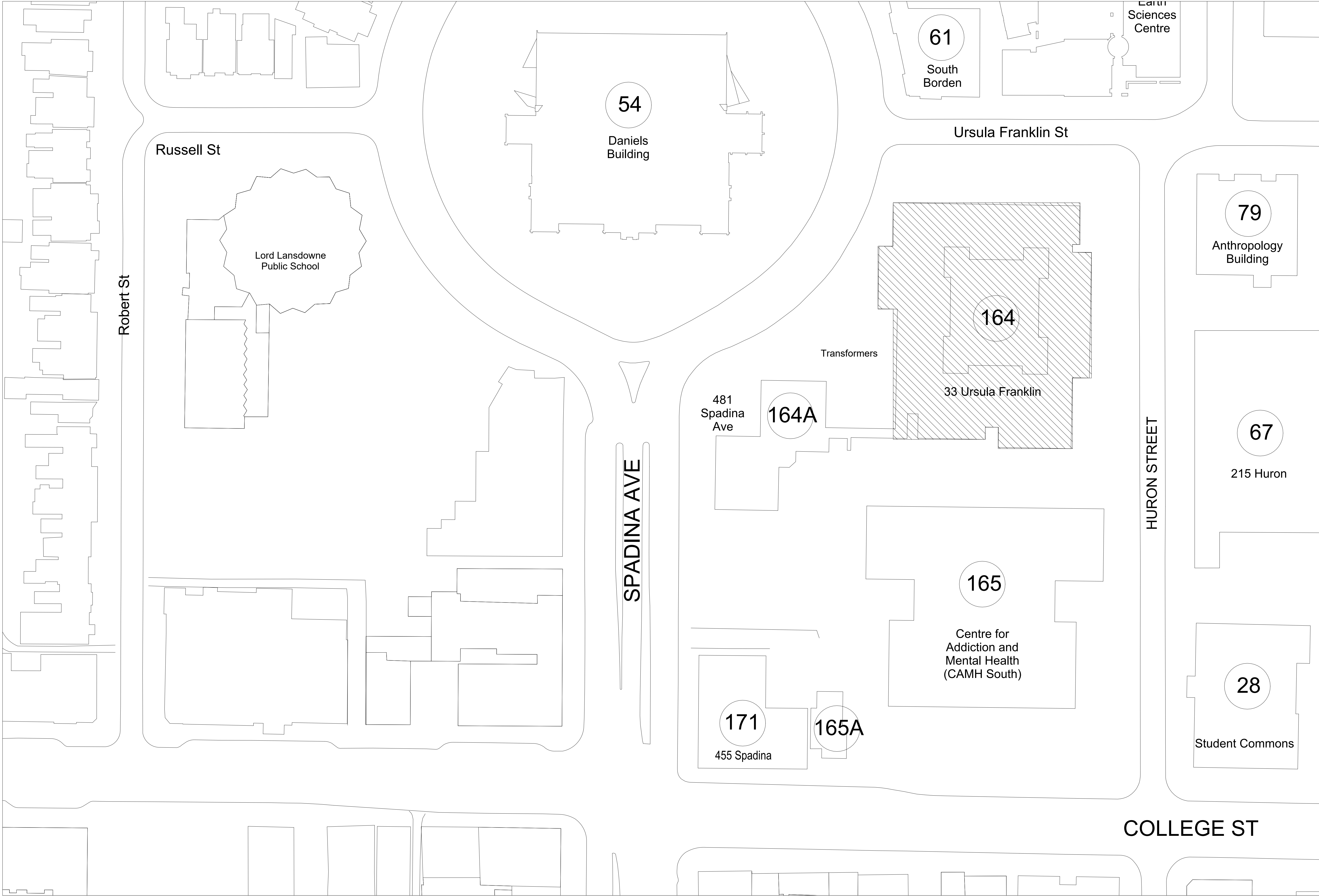
HVAC SYMBOLS LEGEND	
SYMBOL/ABBREVIATION	DESCRIPTION
	RECTANGULAR DUCTWORK
	RECTANGULAR DUCTWORK WITH ACOUSTIC LINING
	ROUND DUCTWORK
VD	VOLUME DAMPER
FD	FIRE DAMPER
MD	MOTORIZED DAMPER
CSFD	COMBINATION SMOKE FIRE DAMPER
FC	FLEXIBLE CONNECTION
AHU-1	EQUIPMENT DESIGNATION
A, B, C	A - DIFFUSER/GRILLE/LOUVER TYPE B - NECK SIZE AND/OR DIMENSIONS (MM) C - AIR FLOW (L/S)
A, B, C	A - TERMINAL UNIT SIZE B - MINIMUM AIR FLOW (L/S) C - MAXIMUM AIR FLOW (L/S)
	SILENCER
	BASEBOARD HEATER
	SQUARE DUCT ELBOW WITH TURNING VANES
	DUCT BREAK
T	ELECTRIC DUCT HEATER
T	DIGITAL / LINE VOLTAGE THERMOSTAT
H	PNEUMATIC THERMOSTAT
	HUMIDISTAT
	DUAL DUCT MIXING BOX (SINGLE OR DUAL ACTUATOR)

GENERAL LEGEND	
SYMBOL/ABBREVIATION	DESCRIPTION
	EXISTING TO REMAIN
	NEW WORK
	DEMOLISHED WORK
	BELOW GRADE/LEVEL
	CONNECT TO EXISTING
CTE	GENERAL EXHAUST
GE	KITCHEN EXHAUST
KE	SANITARY EXHAUST
SE	RELIEF EXHAUST
RE	OUTSIDE AIR
OA	RETURN AIR
RA	SUPPLY AIR

PLUMBING AND DRAINAGE PIPING LEGEND	
SYMBOL/ABBREVIATION	DESCRIPTION
	DOMESTIC COLD WATER (DCW)
	DOMESTIC HOT WATER (DHW)
	DOMESTIC HOT WATER (DHW)
T	TEMPERED WATER
TR	TEMPERED WATER RECIRCULATION
ETR	EMERGENCY FIXTURE TEMPERED WATER
ST	STORM DRAINAGE
SAN	SANITARY DRAINAGE
PSAN	PUMPED SANITARY DRAINAGE
PST	PUMPED STORM DRAINAGE
V	PLUMBING VENT
D	CONDENSATE DRAINAGE
CRD	CORROSION RESISTANT DRAIN
CRV	CORROSION RESISTANT VENT
ED	EQUIPMENT DRAIN
NP	NON POTABLE
TP	TRAP SEAL PRIMER

DIVISION OF RESPONSIBILITY - DEMOLITION			
CATEGORY	DESCRIPTION	MECHANICAL	ELECTRICAL
WIRING, BACK-BOXES, AND CONDUITS	LINE VOLTAGE WIRING AND ASSOCIATED BACK-BOXES & CONDUITS		•
	LOW VOLTAGE WIRING AND ASSOCIATED BACK-BOXES & CONDUITS	•	
EQUIPMENT AND DEVICES	DISCONNECT SWITCHES, VFD'S STARTERS & LINE VOLTAGE CONTROL DEVICES		•
	LOW VOLTAGE CONTROL DEVICES	•	
COMMUNICATIONS	HEAT TRACING, SNOWMELT SYSTEMS, ELECTRIC COILS & PACKAGED ELECTRIC SPACE HEATING EQUIPMENT	•	
	BAS DATA CABLING, PATCH CABLING & ASSOCIATED CONDUITS FROM MECHANICAL EQUIPMENT CONTROLLER TO FACILITIES & SERVICES (F&S) NETWORK SWITCH	•	
DIVISION OF RESPONSIBILITY - NEW WORK			
CATEGORY	DESCRIPTION	MECHANICAL	ELECTRICAL
WIRING, BACK-BOXES, AND CONDUITS	LINE VOLTAGE WIRING AND ASSOCIATED BACK-BOXES & CONDUITS		PROVIDE
	LOW VOLTAGE WIRING AND ASSOCIATED BACK-BOXES & CONDUITS	PROVIDE	
EQUIPMENT AND DEVICES	BACK-BOXES FOR STEP-DOWN TRANSFORMERS & RELAYS SERVING MECHANICAL EQUIPMENT		PROVIDE
	VFD'S, STARTERS, SPEED CONTROLLERS, & LINE VOLTAGE CONTROL DEVICES SERVING MECHANICAL EQUIPMENT	SUPPLY	INSTALL
COMMUNICATIONS	LOW VOLTAGE CONTROL DEVICES	PROVIDE	
	LOW VOLTAGE STEP-DOWN TRANSFORMERS & RELAYS SERVING MECHANICAL EQUIPMENT	SUPPLY	INSTALL
COMMUNICATIONS	HEAT TRACING, ELECTRIC COILS & PACKAGED ELECTRIC SPACE HEATING EQUIPMENT	PROVIDE	
	SNOWMELT SYSTEMS		PROVIDE
COMMUNICATIONS	BAS DATA CABLING, PATCH CABLING & ASSOCIATED CONDUITS FROM MECHANICAL EQUIPMENT CONTROLLER TO FACILITIES & SERVICES (F&S) NETWORK SWITCH	PROVIDE	
	NOTES: 1. LOW VOLTAGE IS DEFINED AS BELOW 30 VOLTS. 2. ALL ELECTRICAL WORK INCLUDING CONTROLS WORK SHALL BE PERFORMED BY THE CONTRACTOR ON BEHALF OF THE OWNER THAT FALLS UNDER THE PROVISIONS OF ANY COLLECTIVE AGREEMENTS BY WHICH THE OWNER IS BOUND, OR WHICH THE OWNER IS CONTRACTUALLY REQUIRED TO APPLY TO THE PROJECT. SHALL IN EACH CASE BE PERFORMED BY EMPLOYEES COVERED BY THE APPLICABLE COLLECTIVE AGREEMENT. REFER TO SPECIFICATIONS SECTION 00 21 13 - INSTRUCTIONS TO BIDDERS, AND CDDC2 SUPPLEMENTARY CONDITIONS.		

MECHANICAL DRAWING LIST		
DRAWING NUMBER	DRAWING NAME	REV
M101	MECHANICAL LEGEND, DRAWING LIST, KEY PLANS & CAMPUS MAP	7
M102	MECHANICAL SPECIFICATIONS (1 OF 4)	6
M103	MECHANICAL SPECIFICATIONS (2 OF 4)	6
M104	MECHANICAL SPECIFICATIONS (3 OF 4)	6
M105	MECHANICAL SPECIFICATIONS (4 OF 4)	6
M110	MECHANICAL SCHEDULES	7
M220	SECOND FLOOR PLAN - PLUMBING & DRAINAGE, EXISTING AND REMOVAL	9
M221	SECOND FLOOR PLAN - PLUMBING & DRAINAGE, EXISTING AND REMOVAL	9
M230	THIRD FLOOR PLAN - PLUMBING & DRAINAGE, EXISTING AND REMOVAL	9
M231	THIRD FLOOR PLAN - PLUMBING & DRAINAGE, EXISTING AND REMOVAL	9
M320	SECOND FLOOR PLAN - HVAC EXISTING AND REMOVAL	7
M321	SECOND FLOOR PLAN - HVAC NEW WORK	7
M330	THIRD FLOOR PLAN SOUTH - HVAC EXISTING AND REMOVAL	7
M331	THIRD FLOOR PLAN - HVAC NEW WORK	7
M341	ROOF PLAN - HVAC NEW WORK	6
M401	MECHANICAL DETAILS	6



2. PROVIDE NEW WORK AS SHOWN ON THE DRAWINGS.
3. PROVIDE A COMPLETE AND FUNCTIONING STANDALONE CONTROL SYSTEM. REFER TO SEQUENCE OF OPERATION FOR MORE INFO.
4. PROVIDE SHOP DRAWINGS FOR ALL CONTROL COMPONENTS FOR APPROVAL.
5. PROVIDE TESTING AND VERIFICATION OF SYSTEM FUNCTIONALITY AND SEQUENCE OF OPERATION. DEMONSTRATE SYSTEM OPERATION TO U OF T REPRESENTATIVE. NOTE MOTION DIRECTION SWITCH POSITION FOR ALL ACTUATORS.
6. PROVIDE ALL REQUIRED MATERIAL AND LABOUR REQUIRED TO EXECUTE THE COMPONENT AND SYSTEM COMMISSIONING IN ACCORDANCE WITH THE COMMISSIONING AUTHORITY REQUIREMENTS. SEE DIV. 0 AND 1 SPECIFICATIONS FOR MORE INFO.
7. EXISTING DUAL DUCT TERMINAL UNITS ARE SINGLE ACTUATOR TYPE, NEW DUAL DUCT TERMINAL UNITS ARE DUAL ACTUATOR TYPE (1 FOR HEATING AND FOR COOLING). FOR ALL NEW DUAL DUCT TERMINAL UNITS, PROVIDE CONTROLLER TO PROVIDE SIGNAL TO BOTH ACTUATORS.
8. NEW ERV AND NEW IAC'S SHALL BE SCHEDULED TO RUN BETWEEN 7:30 AM TO 6:00 PM. IAC'S SHALL BE SET TO MAINTAIN SPACE TEMPERATURE SETPOINT (USER ADJUSTABLE).

LEAKAGE: MAXIMUM 0.35 L/S/SQ M (8 CFM/SQ FT) AT 1.0 KPA (4 IN. W.G.) OF DIFFERENTIAL PRESSURE ACROSS FULLY CLOSED DAMPER WHEN TESTED TO AMCA STANDARD 511.

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THERMAL INSULATION SCHEDULE						
SERVICE	LOCATION	DIAMETER/SIZE	THICKNESS	VAPOUR BARRIER	COVERING	
DOMESTIC COLD WATER, CONDENSATE DRAINAGE, SANITARY, STORM DRAINAGE	EXPOSED	<=32MM	15MM	YES	PVC JACKET	
	CONCEALED	<=32MM	15MM	YES	WHITE KRAFT (ASJ)	
	EXPOSED	40-150MM	25MM	YES	PVC JACKET	
	CONCEALED	40-150MM	25MM	YES	WHITE KRAFT (ASJ)	
DOMESTIC HOT WATER (60-93 °C) [141-200 °F]	EXPOSED	<=32MM	40MM	NO	SEE NOTE 8	
	EXPOSED	<=32MM	40MM	NO	PVC JACKET	
	CONCEALED	<=32MM	40MM	NO	WHITE KRAFT (ASJ)	
	EXTERIOR/UNCONDITIONED	40-150MM	50MM	NO	PVC JACKET	
OUTSIDE/SUPPLY AIR	CONCEALED	40-150MM	50MM	NO	WHITE KRAFT (ASJ)	
	EXPOSED	ALL	75MM	YES	SEE NOTE 5	
	EXPOSED	ALL	25MM	YES	CANVAS	
	CONCEALED	ALL	25MM	YES	POIL (FSK)	
PRECONDITIONED OUTSIDE AIR (15-27 °C) [60-80 °F]	EXPOSED	ALL	75MM	YES	SEE NOTE 5	
	CONCEALED	ALL	0MM	NO	NONE	
	EXPOSED	ALL	0MM	NO	NONE	
	CONCEALED	ALL	0MM	NO	NONE	
SANITARY/RELIEF/GENERAL EXHAUST	EXTERIOR/UNCONDITIONED [NOTE 4]	ALL	75MM	YES	SEE NOTE 5	
	CONCEALED [NOTE 4]	ALL	25MM	YES	CANVAS	
	EXPOSED	ALL	25MM	YES	POIL (FSK)	
	EXTERIOR/UNCONDITIONED	<25MM	12MM	YES	REFER TO SPEC.	
REFRIGERANT	EXPOSED	<25MM	12MM	YES	PVC JACKET	
	CONCEALED	<25MM	12MM	YES	NONE	
	EXTERIOR/UNCONDITIONED	>=25MM	25MM	YES	REFER TO SPEC.	
	EXPOSED	>=25MM	25MM	YES	PVC JACKET	
	CONCEALED	>=25MM	25MM	YES	NONE	
	CONCEALED	>=25MM	25MM	YES	NONE	
	CONCEALED	>=25MM	25MM	YES	NONE	
	CONCEALED	>=25MM	25MM	YES	NONE	

1. SEE MECHANICAL SPECIFICATIONS DRAWING FOR ADDITIONAL INFORMATION ON THERMAL INSULATION.
2. INSULATION THICKNESSES TO BE AS PER LATEST ASHRAE 90.1-2016 STANDARD.
3. PROVIDE REMOVABLE INSULATION SECTIONS AT CONTROL VALVES.
4. FOR INTERIOR EXHAUST AIR SERVICE, REFER TO SPECIFICATIONS FOR INSULATION LOCATIONS.
5. PROVIDE 3M VENTURECUT #1570500V INSULATION COVERING SYSTEM, FLAT ALUMINUM FINISH, PUNCTURE FORCE OF 300 N.
SERVICE TEMPERATURE OF -70 °C TO 120 °C. OVERLAP ROOF CURB COUNTER FLASHING WITH COVERING.
6. PROVIDE INSULATION INSIDE OR OVER SUPPORTS TO MAINTAIN INSULATION THICKNESS AS SPECIFIED ABOVE.
7. FOR STORM DRAINAGE SERVICE, REFER TO SPECIFICATIONS FOR INSULATION LOCATIONS.
8. FOR SANITARY DRAINAGE SERVICE, PROVIDE INSULATION ONLY WHERE SHOWN ON DRAWINGS.
9. FOR EXTERIOR WATER PIPING, PROVIDE 3-MM ALUMINUM ROLL JACKET WITH EMBOSSED SURFACE. SECURE COVER WITH 1/2" WIDE ALUMINUM BANDS. OVERLAP ALL COVER JOINTS BY AT LEAST 75MM AND SEAL WITH VAPOUR BARRIER SEALANT.
10. ALL DUCT INSULATION SHALL BE EXTERNAL OF DUCT.

DUAL DUCT BOX SCHEDULE									
TAG	MAKE	MODEL	AREA SERVED	LOCATION	INLET SIZE (MM)	MIN AIRFLOW	MAX AIRFLOW		REMARKS
NEW BOX	EH PRICE	DDS	317, 331, 333	GRADUATE OFFICE 333	225	382 L/s	382 L/s		
NEW BOX	EH PRICE	DDS	3024K, 3043, 3045	GRADUATE OFFICE 3043	287 L/s	287 L/s	287 L/s		
NEW BOX	EH PRICE	DDS	3RD FLOOR EAST PERIMETER	SHARED LOUNGE 2021	300	566 L/s	566 L/s		
NEW BOX	EH PRICE	DDS	GRADUATE OFFICE 3047	GRADUATE OFFICE 3047	175	200 L/s	200 L/s		
NEW BOX	EH PRICE	DDS	GRADUATE OFFICE 3090	GRADUATE OFFICE 3090	200	268 L/s	268 L/s		
NEW BOX	EH PRICE	DDS	3RD FLOOR EAST PERIMETER	UNDERGRAD RESOURCES 2002	300	764 L/s	764 L/s		
NEW BOX	EH PRICE	DDS	3014, 3016	FACULTY OFFICE 3018	225	342 L/s	342 L/s		
NEW BOX	EH PRICE	DDS	3900	KITCHENETTE 3014	200	254 L/s	254 L/s		
NEW BOX	EH PRICE	DDS	3093, 3095, 3007A	FACULTY OFFICE 3093	250	407 L/s	407 L/s		
NEW BOX	EH PRICE	DDS	3091, 3092, 3093, 3094, 3095, 3096	POST DOC 3094	225	425 L/s	425 L/s		
HIGH MIXING TYPE, C/W HANGER BRACKETS, FIBERGLASS LINER, QUARTER TURN LATCHES FOR ACCESS DOOR, AND PNEUMATIC CONTROLS THAT ALLOW COLD SIDE DAMPER TO BE INVERSELY CONTROLLED WITH RESPECT TO HOT SIDE DAMPER.									

INDOOR AIR CONDITIONING UNIT SCHEDULE														
TAG	LOCATION	AREA SERVED	MAKE	MODEL	AIRFLOW	SENSIBLE COOLING CAPACITY	TOTAL COOLING CAPACITY	HEATING CAPACITY	VOLTAGE/PH/ HZ	MCA	MOCP	WEIGHT 50.0 kg	DIMENSIONS (LxWxH MM)	REMARKS
IA-CR-INT	GRAD STUDENT RESOURCES 2015	GRAD STUDENT RESOURCES 2015	DAIKIN	FXM030TBVJU	517 L/s	20233 Btu/h	25916 Btu/h	34000 Btu/h	208/1/60	3.0 A	15 A			
IA-CR-PER	GRAD STUDENT RESOURCES 2015	GRAD STUDENT RESOURCES 2015	DAIKIN	FXM049TBVJU	650 L/s	31072 Btu/h	41461 Btu/h	54000 Btu/h	208/1/60	3.6 A	15 A	50.0 kg	1400x800x250	
IA-SL-INT	SHARED LOUNGE 2021	SHARED LOUNGE 2021	DAIKIN	FXM016TBVJU	300 L/s	12361 Btu/h	15418 Btu/h	20000 Btu/h	208/1/60	1.9 A	15 A	40.0 kg	1000x800x250	
IA-SL-PER	SHARED LOUNGE 2021	SHARED LOUNGE 2021	DAIKIN	FXM036TBVJU	533 L/s	23124 Btu/h	31046 Btu/h	40000 Btu/h	208/1/60	3.1 A	15 A	50.0 kg	1400x800x250	
IA-UG-INT	UNDERGRAD RESOURCES 2902	UNDERGRAD RESOURCES 2902	DAIKIN	FXM054TBVJU	717 L/s	37384 Btu/h	49315 Btu/h	63000 Btu/h	208/1/60	3.6 A	15 A	55.0 kg	1550x800x250	
IA-UG-PER	UNDERGRAD RESOURCES 2902	UNDERGRAD RESOURCES 2902	DAIKIN	FXM096TAVJU	1200 L/s	62655 Btu/h	80847 Btu/h	107996 Btu/h	208/1/60	6.8 A	15 A	120.0 kg	1492x1100x470	
ENTERING AIR TEMPERATURE: COOLING 75 DBF/62.5 WBF, HEATING 70 DBF, REFRIGERANT R410A														

OUTDOOR AIR CONDITIONING UNIT SCHEDULE									
TAG	LOCATION	AREA SERVED	MAKE	MODEL	VOLTAGE/PH/ HZ	MCA	MOCP	WEIGHT	DIMENSIONS (LxWxH MM)
OAC-2F-E-A	ROOF	2ND FLOOR EAST	DAIKIN	RXYQ284TJUB	208/3/60	36.5 A	40 A	400 kg	2500x765x2400
OAC-2F-E-B	ROOF	2ND FLOOR EAST	N/A	N/A	208/3/60	47.8 A	50 A	430 kg	2500x765x1660
REFRIGERANT R410A, C/W LOW AMBIENT CONTROLS AND WIND BAFFLES FOR COOLING OPERATION DOWN TO -4 °F.									

ENERGY RECOVERY VENTILATOR SCHEDULE											
MaK	AREA SERVED	LOCATION	MAKE	MODEL	SUPPLY/RETURN AIRFLOW	SUPPLY/RETURN ESP	SUMMER SENSIBLE EFFECTIVENESS	WINTER TOTAL EFFECTIVENESS	VOLTAGE/PH/ HZ	MCA	MOCP
ERV-2F-E	2ND FLOOR EAST	STUDENT LOUNGE 2021	OXYGEN8	H20IN-ERV1 (1050-180 0 CFM)	740 L/s	0.75 in-wg	68.2	67.2	208/3/60	13.5 A	30.0 A
SUMMER: EAT - 90.0' DBF/75' WBF, LAT - 79.8' DBF/67.3' WBF WINTER: EAT - 2.0' DBF/0.1' WBF, LAT - 49' DBF/40.3' WBF											

ELECTRIC DUCT HEATER									
TAG	AREA SERVED	LOCATION	MAKE	MODEL	AIRFLOW	HEATING CAPACITY	VOLTAGE/PH/ HZ	DIMENSIONS (LxWxH MM)	REMARKS
EDH-ERV-1	2ND FLOOR EAST	SHARED LOUNGE 2021	THERMOLEC	DFC100HB	740 L/s	17061 Btu/h	208/3/60	500X300	ERV PRE-HEATER, OPEN COIL, LAT = 10F
EDH-ERV-2	2ND FLOOR EAST	SHARED LOUNGE 2021	THERMOLEC	DFC100HB	740 L/s	35827 Btu/h	208/3/60	500X300	ERV POST-HEATER, OPEN COIL, LAT = 70F

GRILLES, REGISTERS, & DIFFUSERS SCHEDULE					
TAG	MFG	MODEL	FINISH	DESCRIPTION	MOUNTING AND ACCESSORIES
B { }	E.H. PRICE	S20D	WHITE	LOUVERED FACE SUPPLY REGISTER, DOUBLE DEFLECTION, STEEL CONSTRUCTION, 3/4" LOUVER SPACING, FRONT BLADES PARALLEL TO LONG DIMENSION, STANDARD FLAT BORDER FOR SURFACE MOUNTED GRILLES, WITH FASTENING SCREW HOLES.	C/W STEEL INLET DAMPER.
C1 { }	E.H. PRICE	SCD	WHITE	SQUARE CONE DIFFUSER, STEEL CONSTRUCTION, 3 CONES, 6000x6000	C/W STEEL INLET DAMPER.
C2 { }	E.H. PRICE	SCD	WHITE	SQUARE CONE DIFFUSER, STEEL CONSTRUCTION, 3 CONES, 300X300.	C/W STEEL INLET DAMPER.
E { }	E.H. PRICE	80	WHITE	EGG GRATE GRILLE, 15X15X15MM CORE ONLY, ALUMINUM CONSTRUCTION.	C/W STEEL DAMPER.
R { }	E.H. PRICE	RSD	WHITE	RADIAL SLOT DIFFUSER, CIRCULAR ARRAY, STEEL CONSTRUCTION, 600MMX600MM, HIGH INDUCTION	C/W STEEL PLASTER FRAME
EX	--	--	--	EXISTING DIFFUSER/GRILLE	
O	--	--	--	OPEN ENDED DUCT	
1. SEE PLANS FOR DIFFUSER NECK SIZES AND GRILLE DIMENSIONS REQUIRED. 2. ADJUST PATTERN DIFFUSERS TO MATCH AIR FLOW ARROWS ON PLAN DRAWINGS 3. ALL GRILLE BORDERS SHALL BE NARROW FRAME 20MM. 4. FOR ALL DIFFUSERS AND GRILLES IN INACCESSIBLE CEILINGS, PROVIDE CABLE OPERATED VOLUME DAMPER THAT IS OPERABLE FROM FACE OF TERMINAL.					
TAG SUFFIX '1' = 1-3 = NUMBER OF SLOTS. F = INCLUDE FIRE DAMPER.					

TAG	SPECIFICATION
WC-1	WALL HUNG BARRIER FREE FLUSH VALVE TOILET AMERICAN STANDARD 3551101.020 TOILET-- "AFWALL MILLENNIUM FLOWISE" TOILET, WALL-HUNG WITH WALL OUTLET, TOILET OPERATES IN THE RANGE OF 4.2 TO 6.0 LPF (1.1 - 1.6 GPF), VITREOUS CHINA, WHITE FINISH, ANTIMICROBIAL SURFACE, ELONGATED BOWL, CONCEALED TRAPWAY DESIGN, DIRECT-FED SIPHON JET FLUSH ACTION, 38 MM (1-1/2") TOP SPUD, FLUSH VALVE BY OTHERS, 254 X 305 MM (10" X 12") WATER SURFACE AREA, FULLY-GLAZED 54 MM (2-1/8") TRAPWAY, STATIC LOAD RATING OF 454 KG (1000 LB) CENTOCO S005TSSCFE-001 SEAT - HEAVY-DUTY OPEN FRONT TOILET SEAT WITHOUT COVER, FOR ELONGATED BOWL, WHITE, POLYPROPYLENE PLASTIC, COLOR-MATCHED PLASTIC CHECK KINGS WITH ONE SOLID METAL HINGE PIN AND BOLT SLOAN SL-G2-8111-1-28 FLUSH VALVE - #G2"OPTIMA PLUS" AUTOMATIC NO-TOUCH EXPOSED WATER CLOSET FLUSHOMETER, HIGH EFFICIENCY 4.8 LPF (1.28 GPF), 38 MM (1-1/2") SPUD COUPLING FOR TOP SPUD TOILET, BATTERY POWERED, CONSTRUCTED FROM SEMI-RED BRASS, POLISHED CHROME FINISH, CHLORAMINE RESISTANT SYNTHETIC RUBBER DIAPHRAGM, INFRARED SENSOR WITH MULTIPLE-FOCUSED, LOBULAR SENSING FIELDS FOR HIGH AND LOW TARGET DETECTION, SENSOR LOCATED ON ENGINEERED METAL COVER WITH REPLACEABLE LENS WINDOW, FLUSH ELECTRICAL OVERRIDE BUTTON, FLUSH TUBE FOR 292 MM (11-1/2") ROUGH-IN, ADJUSTABLE TAILPIPE, 25 MM (1") P.S. SCREWDRIVER BAK-CHRG ANGLE CONTROL, STOP WITH FREE SPINNING VANDAL-RESISTANT STOP CAP, DUAL-FILTERED FIXED BYPASS, SWEAT SOLDER ADAPTER KIT WITH COVER TUBE, HIGH BACK PRESSURE VACUUM BREAKER, 25 MM (1") SUPPLY PIPE, CAST WALL FLANGE WITH SET SCREW, NO EXTERNAL VOLUME ADJUSTMENT, FOUR (4) AA-SIZE ALKALINE BATTERIES INCLUDED, "LOW BATTERY" FLASHING LED, 103 - 552 KPA (15 - 80 PSI) OPERATING WATER PRESSURE FRANKE COMMERCIAL CM-H610-WM BACKREST - WALL MOUNTING, BACK REST, SOLID CORE PLASTIC LAMINATE PANEL BACK, ANTIQUE WHITE, 305 MM (12") WIDE, 102 MM (4") HIGH, 137 MM (5-3/8"), 18 GAUGE STAINLESS STEEL BAR WITH 18 GLOSS WITH FLANGES AND COVERS, CONCEALED SNAP FLANGES AND MOUNTING HARDWARE INCLUDED, PROVIDE ADEQUATE BACKING IN WALL FOR SUPPORT AND COMPLY TO LOCAL CODES FOR BARRIER FREE REQUIREMENTS.
WC-2	FLOOR MOUNTED BARRIER FREE FLUSH TANK TOILET AMERICAN STANDARD 2467016.020 TOILET-- "CADET" TANK TYPE TOILET, FLOOR MOUNTED WITH FLOOR OUTLET, LOW CONSUMPTION 6.0 LPF (1.6 GPF), VITREOUS CHINA, WHITE FINISH, ANTIMICROBIAL SURFACE, ELONGATED BOWL, RIGHT HEIGHT RIM AT 419 MM (16-1/2"), MINIMUM 305 MM (12") ROUGH-IN FROM WALL TO THE CENTER OF WASTE OUTLET, SIPHON JET FLUSH ACTION, MANUAL, POLISHED CHROME LEFT-HAND TRIP LEVER (7581086-201.000A), TANK NOT LINED, WITHOUT TANK COVER LOCKING DEVICE, PRESSURE-ASSISTED FLUSH, CLOSE-COUPLED FLUSHOMETER TANK, 254 X 305 MM (10" X 12") WATER SURFACE AREA, FULLY-GLAZED 54 MM (2-1/8") TRAPWAY, SANITARY DAM ON BOWL, TOILET SEAT NOT INCLUDED, TWO (2) BOLT CAPS, 516 MM (20-5/8") WIDE, 708 MM (28-1/4") FROM FINISHED WALL, 781 MM (30-3/4") HIGH CENTOCO S005TSS-001 SEAT - HEAVY-DUTY OPEN FRONT TOILET SEAT WITH COVER, FOR ELONGATED BOWL, WHITE, POLYPROPYLENE PLASTIC, COLOR-MATCHED PLASTIC SELF-SUSTAINING CHECK KINGS WITH ONE SOLID METAL HINGE PIN AND BOLT, INCLUDES STAINLESS STEEL HARDWARE.
WC-3	WALL HUNG FLUSH VALVE TOILET AMERICAN STANDARD 3551101.020 TOILET-- "AFWALL MILLENNIUM FLOWISE" TOILET, WALL-HUNG WITH WALL OUTLET, TOILET OPERATES IN THE RANGE OF 4.2 TO 6.0 LPF (1.1 - 1.6 GPF), VITREOUS CHINA, WHITE FINISH, ANTIMICROBIAL SURFACE, ELONGATED BOWL, CONCEALED TRAPWAY DESIGN, DIRECT-FED SIPHON JET FLUSH ACTION, 38 MM (1-1/2") TOP SPUD, FLUSH VALVE BY OTHERS, 254 X 305 MM (10" X 12") WATER SURFACE AREA, FULLY-GLAZED 54 MM (2-1/8") TRAPWAY, STATIC LOAD RATING OF 454 KG (1000 LB) CENTOCO S005TSSCFE-001 SEAT - HEAVY-DUTY OPEN FRONT TOILET SEAT WITHOUT COVER, FOR ELONGATED BOWL, WHITE, POLYPROPYLENE PLASTIC, COLOR-MATCHED PLASTIC CHECK KINGS WITH ONE SOLID METAL HINGE PIN AND BOLT SLOAN SL-G2-8111-1-28 FLUSH VALVE - #G2"OPTIMA PLUS" AUTOMATIC NO-TOUCH EXPOSED WATER CLOSET FLUSHOMETER, HIGH EFFICIENCY 4.8 LPF (1.28 GPF), 38 MM (1-1/2") SPUD COUPLING FOR TOP SPUD TOILET, BATTERY POWERED, CONSTRUCTED FROM SEMI-RED BRASS, POLISHED CHROME FINISH, CHLORAMINE RESISTANT SYNTHETIC RUBBER DIAPHRAGM, INFRARED SENSOR WITH MULTIPLE-FOCUSED, LOBULAR SENSING FIELDS FOR HIGH AND LOW TARGET DETECTION, SENSOR LOCATED ON ENGINEERED METAL COVER WITH REPLACEABLE LENS WINDOW, FLUSH ELECTRICAL OVERRIDE BUTTON, FLUSH TUBE FOR 292 MM (11-1/2") ROUGH-IN, ADJUSTABLE TAILPIPE, 25 MM (1") P.S. SCREWDRIVER BAK-CHRG ANGLE CONTROL, STOP WITH FREE SPINNING VANDAL-RESISTANT STOP CAP, DUAL-FILTERED FIXED BYPASS, SWEAT SOLDER ADAPTER KIT WITH COVER TUBE, HIGH BACK PRESSURE VACUUM BREAKER, 25 MM (1") SUPPLY PIPE, CAST WALL FLANGE WITH SET SCREW, NO EXTERNAL VOLUME ADJUSTMENT, FOUR (4) AA-SIZE ALKALINE BATTERIES INCLUDED, "LOW BATTERY" FLASHING LED, 103 - 552 KPA (15 - 80 PSI) OPERATING WATER PRESSURE.
UR-1	WALL HUNG URINAL AMERICAN STANDARD 6581001.020 URINAL-- "MAYBROOK", VITREOUS CHINA, WHITE FINISH, WALL-HUNG, URINAL OPERATES IN THE RANGE OF 0.5 TO 3.8 LPF (0.125 - 1.0 GPF), WALL HUNG FLUSH ACTION, 38 MM (1-1/2") TUBING, INTEGRAL STRAINER, 19 MM (3/4") SPUD CONNECTION, TOP SPUD, COUPLING FOR TOP SPUD URINAL, BATTERY POWERED, CONSTRUCTED FROM SEMI-RED BRASS, POLISHED CHROME FINISH, CHLORAMINE RESISTANT PERMEX SYNTHETIC RUBBER DIAPHRAGM, INFRARED SENSOR WITH MULTIPLE-FOCUSED, LOBULAR SENSING FIELDS FOR HIGH AND LOW TARGET DETECTION, SENSOR LOCATED ON ENGINEERED METAL COVER WITH REPLACEABLE LENS WINDOW, COURTESY FLUSHING ELECTRICAL OVERRIDE BUTTON, FLUSH TUBE FOR 292 MM (11-1/2") ROUGH-IN, ADJUSTABLE TAILPIPE, 25 MM (1") P.S. SCREWDRIVER BAK-CHRG ANGLE CONTROL, STOP WITH SET SCREW, NO EXTERNAL VOLUME ADJUSTMENT, FOUR (4) AA-SIZE ALKALINE BATTERIES INCLUDED, "LOW BATTERY" FLASHING LED, 103 - 552 KPA (15 - 80 PSI) OPERATING WATER PRESSURE.
LV-1	COUNTER MOUNTED LAVATORY AMERICAN STANDARD 9482000.020 BASIN-- "OVALYN UNIVERSAL ACCESS" UNDERMOUNT LAVATORY, VITREOUS CHINA, WHITE FINISH, REAR OVERFLOW, MOUNTING KIT SUPPLIED (047194-0070A), OVERALL DIMENSIONS: 489 MM (19-1/4") LONG, 400 MM (15-3/4") WIDE, 140 MM (5-1/2") HIGH, BOWL DIMENSIONS: 425 MM (16-3/4") LONG, 337 MM (13-1/4") WIDE, 102 MM (4") DEEP SLOAN EBF-85-BAT-TEE CP-0.35GPM-MLM-R-FCT FAUCET - OPTIMA™, COUNTER MOUNTED, AUTOMATIC NO-TOUCH, BATTERY POWERED, LAVATORY FAUCET, POLISHED CHROME FINISH, SINGLE HOLE CENTERSET, BRASS SPOUT, 1.3 LPM (0.35 GPM) MAXIMUM FLOWRATE, MULTILAMINAR SPRAY OUTLET, FIXED SPOUT, 130 MM (5-1/8") SPOUT REACH, 146 MM (5-3/4") HIGH, INFRARED SENSOR, BELOW DECK CONTROL ACCESS, DUAL INLET FILTER ASSEMBLY WITH 9.5 MM (3/8") COMPRESSION BRASS CAP FOR TEMPERED WATER INCLUDED. LAWLER 870-86620 MIXING VALVE - POINT OF USE AND MASTER CONTROLLED FIXTURES, THERMOSTATIC MASTER WATER MIXING CONTROL VALVE, THE TEMPERATURE IS ADJUSTED WITH THE HELP OF SPINDLE.
LV-2	WALL HUNG BARRIER FREE LAVATORY AMERICAN STANDARD 0655001EC-020 0659020EC 020 BASIN-- "MURRO", WALL-HUNG LAVATORY, VITREOUS CHINA, ANTIMICROBIAL SURFACE, WHITE FINISH, SINGLE HOLE CENTERSET, REAR OVERFLOW FAUCET LEDGE WITH RECESSED SELF-DRAINING DECK, FOR CONCEALED ARM OR WALL SUPPORT, VITREOUS CHINA SHROUD/KNEE CONTACT GUARD WITH ANTIMICROBIAL SURFACE (0659020EC), SOAP DISPENSER, WHEN INSTALLED WITH A BELOW DECK ELECTRONICS FAUCET WHICH HAS THE CONTROL BOX, THE ACCESSORIES WILL NOT FIT UNDER THE SHROUD AND WILL NEED TO BE INSTALLED OUTSIDE THE SHROUD. OVERALL DIMENSIONS: 540 MM (21-1/8") LONG, 540 MM (21-1/4") WIDE, 102 MM (4") HIGH, BOWL DIMENSIONS: 343 MM (13-1/2") LONG, 344 MM (13-1/2") WIDE, 127 MM (5") DEEP. SLOAN EBF-85-BAT-TEE CP-0.35GPM-MLM-R-FCT FAUCET - OPTIMA™, COUNTER MOUNTED, AUTOMATIC NO-TOUCH, BATTERY POWERED, LAVATORY FAUCET, POLISHED CHROME FINISH, SINGLE HOLE CENTERSET, BRASS SPOUT, 1.3 LPM (0.35 GPM) MAXIMUM FLOWRATE, MULTILAMINAR SPRAY OUTLET, FIXED SPOUT, 130 MM (5-1/8") SPOUT REACH, 146 MM (5-3/4") HIGH, INFRARED SENSOR, BELOW DECK CONTROL ACCESS, DUAL INLET FILTER ASSEMBLY WITH 9.5 MM (3/8") COMPRESSION BRASS CAP FOR TEMPERED WATER INCLUDED. LAWLER 870-86620 MIXING VALVE - POINT OF USE AND MASTER CONTROLLED FIXTURES, THERMOSTATIC MASTER WATER MIXING CONTROL VALVE, THE TEMPERATURE IS ADJUSTED WITH THE HELP OF SPINDLE.
DF-1	SURFACE MOUNTED BOTTLE FILLING STATION AND WATER FOUNTAIN ELKAY IWRCDMSK, MECHANICAL BOTTLE FILLING STATION & SINGLE WATER FOUNTAIN, NON-FILTERED AND NON-REFRIGERATED.
XS-1	COUNTER MOUNTED BARRIER FREE KITCHEN SINK FRANKE COMMERCIAL ALBS7806P-1-1 SINK - SINGLE COMPARTMENT SINK, SINGLE HOLE CENTERSET, COMMERCIAL SINKS, WITH OVERALL DIMENSION, 765 MM (30-1/8") LONG, 559 MM (22") WIDE, 152 MM (6") HIGH, CONSTRUCTED FROM 18 GAUGE TYPE 304 STAINLESS STEEL, BOWL DIMENSIONS ARE 711 MM (28") LONG, 432 MM (17") WIDE, 152 MM (6") DEEP, POLISHED TO #4 SATIN FINISH, FACTORY INSTALLED EZ TORQUE™ FASTENERS, FACTORY APPLIED RIM SEAL, CENTER BACK WASTE LOCATION, 38 MM (1-1/2") (DN38) BRASS TAILPIPE, 89 MM (3-1/2") CRUMB CUP STRAINER, WASTE FITTING INCLUDED, UNDERCOATED TO REDUCE CONDENSATION AND RESONANCE GROHE 32685003 FAUCET-- "CONCETTO", COUNTER MOUNTED, MANUAL, SINGLE HANDLE, SINK FAUCET, STARLIGHT CHROME FINISH, SINGLE HOLE...
NOTES: 1. FLUSH VALVE PLUMBING FIXTURE GROUP SHALL BE PROVIDED WITH A FLUSH VALVE TRAP PRIMER COMPLETE WITH VACUUM BREAKER. PROVIDE 18 LINE FROM PRIMER AND CONNECT TO FLOOR DRAINS AS NOTED ON PLANS. 2. PROVIDE SUPPLIES FOR APPLICABLE FIXTURES WITH METAL ANGLE STOPS, ADAPTORS, ESCUTCHIONS AND FLEXIBLE METAL RISERS. PROVIDE CAST BRASS P TRAP, CLEANOUT, UNION AND ESCUTCHION. SUBMIT SHOP DRAWINGS 3. EACH PLUMBING FIXTURE SHALL BE LOW WATER CONSUMPTION IN ACCORDANCE TO ONTARIO BUILDING CODE. 4. PROVIDE ALL REQUIRED FITTINGS, TRAPS, VALVES, FAUCETS AND ESCUTCHIONS TO COMPLETE EACH FIXTURE INSTALLATION. 5. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL BEFORE ORDERING ANY FIXTURE. 6. NEW TOILET FLANGES FOR NEW FLOOR MOUNTED TOILETS SHALL BE INSTALLED ON TOP OF CONCRETE SLAB AND RECESSED IN FINISHED OF FLOOR.	



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7	ISSUED FOR TENDER	2026-04-15
8	ISSUED FOR PERMIT	2026-05-10
9	ISSUED FOR RFP C2	2026-09-09
4	ISSUED FOR CLASS B COSTING	2026-02-18
3	ISSUED FOR 100% D0	2026-01-23
2	ISSUED FOR CLASS B COSTING	2026-01-27
1	ISSUED FOR 90% D0	2025-12-01
REV.	DESCRIPTION	DATE

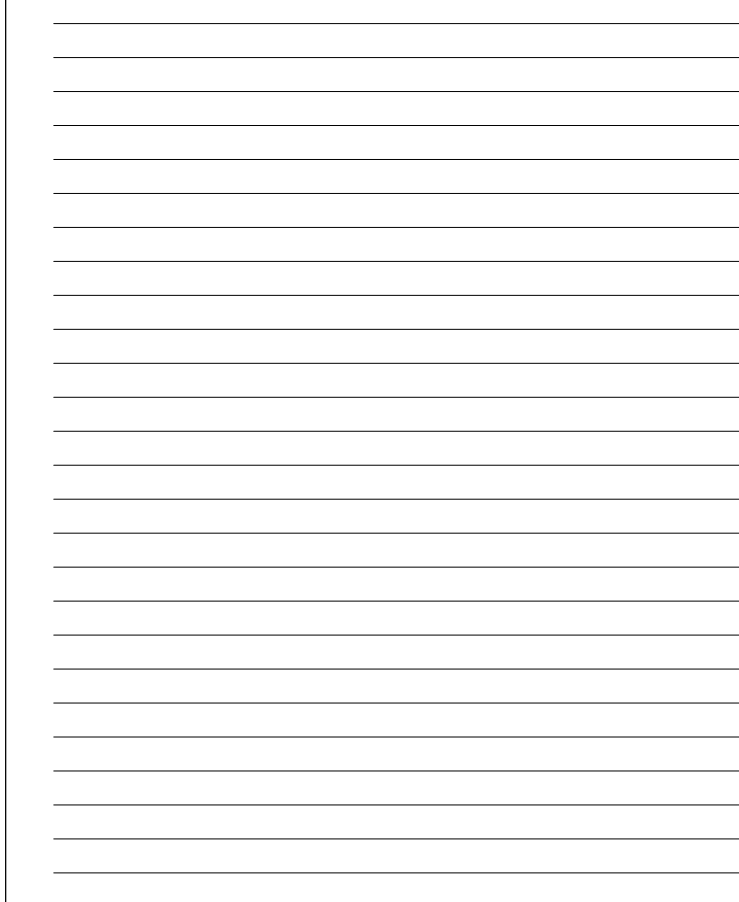
KEY PLAN (NTS) SEAL

PROJECT TITLE
UNIVERSITY OF TORONTO
33 URSULA FRANKLIN
MATH OFFICE
RENOVATION

33 URSULA FRANKLIN ST.
DRAWING SHEET TITLE
MECHANICAL
SCHEDULES

DRAWN

- A REMOVE EXISTING PLUMBING FIXTURES AS INDICATED FOR RECONNECTION TO NEW FIXTURES.
- B REMOVE EXISTING CEILING MOUNTED DOMESTIC HOT WATER TANK COMPLETE WITH HANGERS AND PAN. POWER DISCONNECTION BY ELECTRICAL CONTRACTOR.
- C REMOVE EXISTING CONDENSATE DRAIN TO EXISTING SERVRY SINK. PIPING NOT SHOWN.



KEY PLAN (NTS)	SEAL
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33 URSULA FRANKLIN ST.
DRAWING SHEET TITLE
**SECOND FLOOR PLAN -
PLUMBING & DRAINAGE,
EXISTING AND REMOVAL**

P164-24-165	
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GENERAL NOTES - PLUMBING AND DRAINAGE

1 ALL PLUMBING FIXTURE REPLACEMENTS SHALL REUSE EXISTING CARRIERS.

MECHANICAL NOTES

A PROVIDE NEW KITCHENETTE SINK AND CONNECT TO EXISTING 15MM DOMESTIC COLD WATER, 40MM SANITARY, AND 32MM VENT. PROVIDE NEW INSTANT DOMESTIC HOT WATER TANK UNDER SINK, THERMOMATE #ES250, 2.5 GALLON, 120V, 12AMP, 12.95"X11.5"X16.49".

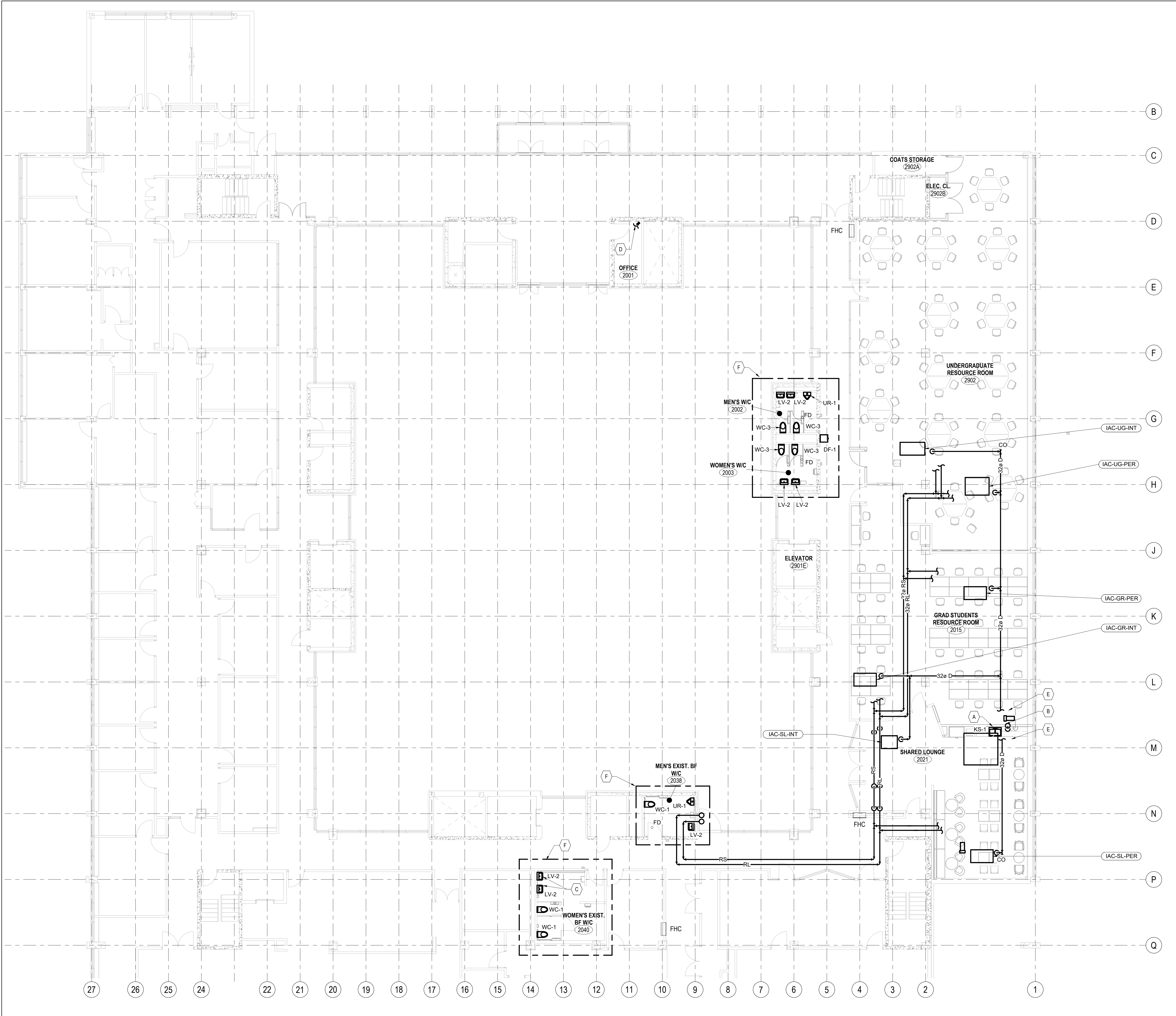
B CONNECT TO EXISTING 40MM SANITARY AND PROVIDE NEW OPEN WASTE IN CEILING FOR CONDENSATE DRAINAGE FROM NEW IAC'S

C REWORK DCW, DHW, AND SANITARY TO ENSURE BOTH LAVATORIES ARE AT THE SAME HEIGHT, MINIMUM 850MM AFT TO TOP OF SINK. REFER TO ARCHITECTURAL.

D CONNECT NEW 40MM SANITARY TO EXISTING SANITARY RISER IN FLOOR BELOW. ALLOW FOR 5 FEET OF PIPING.

E DRAIN NEW 32MM CONDENSATE DRAIN FROM IAC'S TO NEW OPEN WASTE.

F PROVIDE NEW PLUMBING FIXTURES AS INDICATED AND CONNECT TO EXISTING SERVICES. INCLUDE IN TENDER PRICE TO REWORK EXISTING SERVICES.



9	ISSUED FOR TENDER	2026-04-15
8	ISSUED FOR PERMIT	2026-03-10
7	ISSUED FOR BPA CO	2026-03-09
6	ISSUED FOR CLASS A COSTING	2026-02-18
5	ISSUED FOR 100% DD	2026-01-23
4	ISSUED FOR CLASS B COSTING	2026-01-17
3	ISSUED FOR 50% DD	2025-12-01
2	ISSUED FOR 100% SD	2025-09-18
1	ISSUED FOR CLASS C COSTING	2025-08-12
REV.	DESCRIPTION	DATE

KEY PLAN (NTS)	SEAL
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PROJECT TITLE

UNIVERSITY OF TORONTO

33 URSULA FRANKLIN

MATH OFFICE

RENOVATION

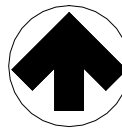
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DRAWING SHEET TITLE

SECOND FLOOR PLAN -

PLUMBING & DRAINAGE

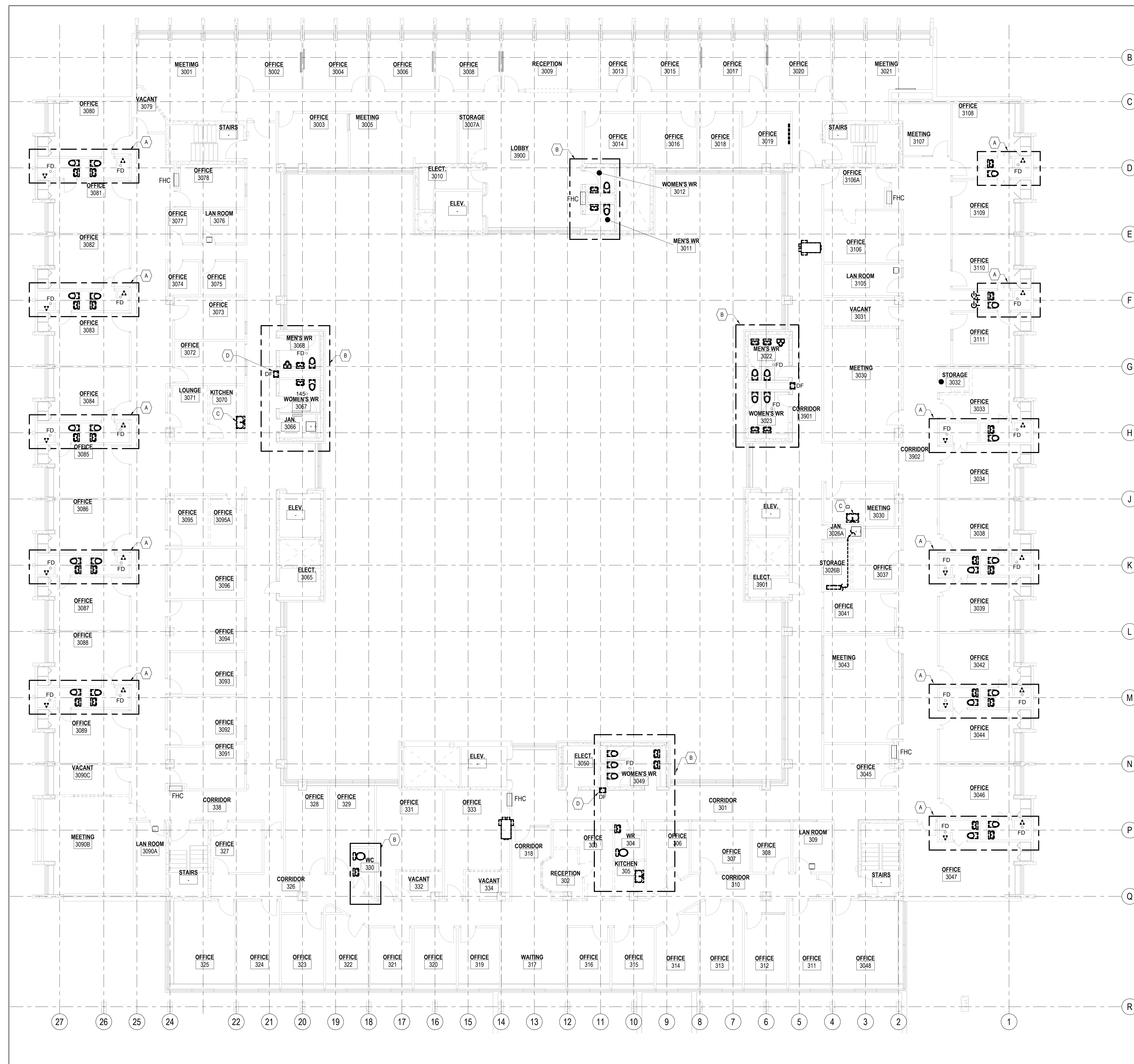
NEW WORK

DRAWN BY: AL	SCALE: 1 : 100
REVIEWED BY: AL	DATE CREATED: 2025-08-05
UNIVERSITY PROJECT NUMBER / NORTH POINT	
P164-24-165	
	
DRAWING NUMBER	REV. NUMBER
M221	9



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- A REMOVE EXISTING PLUMBING FIXTURES AS INDICATED AND CAP AT DOMESTIC COLD, DOMESTIC HOT, AND SANITARY SERVICES AT ISOLATION VALVE.
- B REMOVE EXISTING PLUMBING FIXTURES AS INDICATED FOR RECONNECTION TO NEW FIXTURES.
- C REMOVE EXISTING SINK AND ASSOCIATED DOMESTIC COLD, DOMESTIC HOT, SANITARY, AND VENT BACK TO ACTIVE BRANCH.
- D ALTERNATIVE PRICE 2. FOR DEMOLITION OF DRINKING FOUNTAIN SCOPE.




9	ISSUED FOR TENDER	2026-04-15
8	ISSUED FOR PERMIT	2026-03-10
7	ISSUED FOR 80% CO	2026-03-09
6	ISSUED FOR CLASS A COSTING	2026-02-18
5	ISSUED FOR 100% CO	2026-01-23
4	ISSUED FOR CLASS B COSTING	2026-01-17
3	ISSUED FOR 50% CO	2025-12-01
2	ISSUED FOR 100% SD	2025-09-16
1	ISSUED FOR CLASS C COSTING	2025-09-12
REV.	DESCRIPTION	DATE

KEY PLAN (NTS)	SEAL
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PROJECT TITLE:
UNIVERSITY OF TORONTO
**33 URSULA FRANKLIN
MATH OFFICE
RENOVATION**

33 URSULA FRANKLIN ST.
DRAWING SHEET TITLE
**THIRD FLOOR PLAN -
PLUMBING & DRAINAGE,
EXISTING AND REMOVAL**

DRAWN BY: AL	SCALE: 1 : 100
REVIEWED BY: AL	DATE CREATED: 2025-08-05
UNIVERSITY PROJECT NUMBER	NORTH POINT

P164-24-165	
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DRAWING NUMBER	REV. NUMBER
M230	9

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GENERAL NOTES - PLUMBING AND DRAINAGE

1 ALL PLUMBING FIXTURE REPLACEMENTS SHALL REUSE EXISTING CARRIERS.

MECHANICAL NOTES

- A PROVIDE NEW FLOOR DRAIN AND CONNECT TO EXISTING SANITARY RISER BELOW SERVING ADJACENT TOILETS. ALLOW FOR 5 FEET OF PIPING.
- B PROVIDE NEW KITCHEN SINK. PROVIDE 15MM DOW. 15MM DHW. 40MM SAN. AND 32MM VENT TO SINK FROM EXISTING SERVICES IN BASE BUILDING WASHROOMS. SANITARY SHALL BE RUN ON THIS LEVEL THROUGH NEW FURRED OUT WALL.
- C ALTERNATIVE PRICE 1. PROVIDE NEW KITCHEN SINK AND CONNECT TO EXISTING DOW, DHW, SAN. AND VENT IN THIS LOCATION.
- D PROVIDE NEW PLUMBING FIXTURES AS INDICATED AND CONNECT TO EXISTING SERVICES. INCLUDE IN TENDER PRICE TO REWORK EXISTING SERVICES.
- E PROVIDE NEW PLUMBING FIXTURES AS INDICATED AND CONNECT TO EXISTING SERVICES. INCLUDE IN TENDER PRICE TO REWORK EXISTING SERVICES. PROVIDE SEPARATE PRICE FOR PROVIDING DRINKING FOUNTAIN.
- F PROVIDE NEW 40MM SANITARY DOWN TO FLOOR BELOW.
- G PROVIDE NEW CHEMICAL DRAIN SEALER FOR ALL EXISTING FLOOR DRAINS IN DECOMMISSIONED WASHROOMS
- H ALTERNATIVE PRICE 2. FOR DRINKING FOUNTAIN SCOPE.

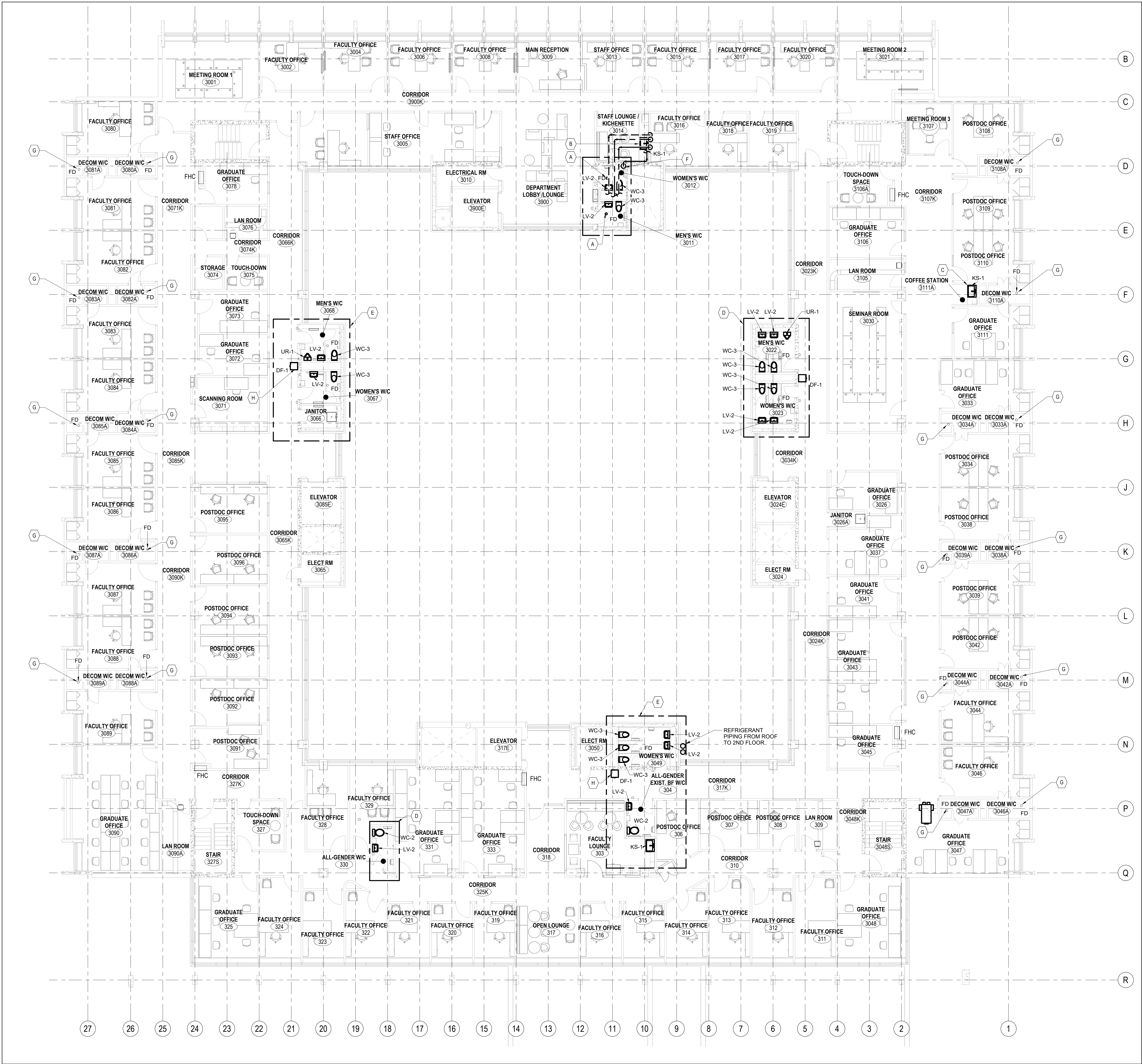


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9	ISSUED FOR TENDER	2026-04-15
8	ISSUED FOR PERMIT	2026-03-10
7	ISSUED FOR BIDDING	2026-03-09
6	ISSUED FOR CLASS A COSTING	2026-02-18
5	ISSUED FOR 100% DD	2026-01-23
4	ISSUED FOR CLASS B COSTING	2026-01-17
3	ISSUED FOR 50% DD	2025-12-01
2	ISSUED FOR 100% SD	2025-09-18
1	ISSUED FOR CLASS C COSTING	2025-08-12
REV.	DESCRIPTION	DATE

KEY PLAN (NTS) SEAL

PROJECT TITLE
UNIVERSITY OF TORONTO
**33 URSULA FRANKLIN
MATH OFFICE
RENOVATION**

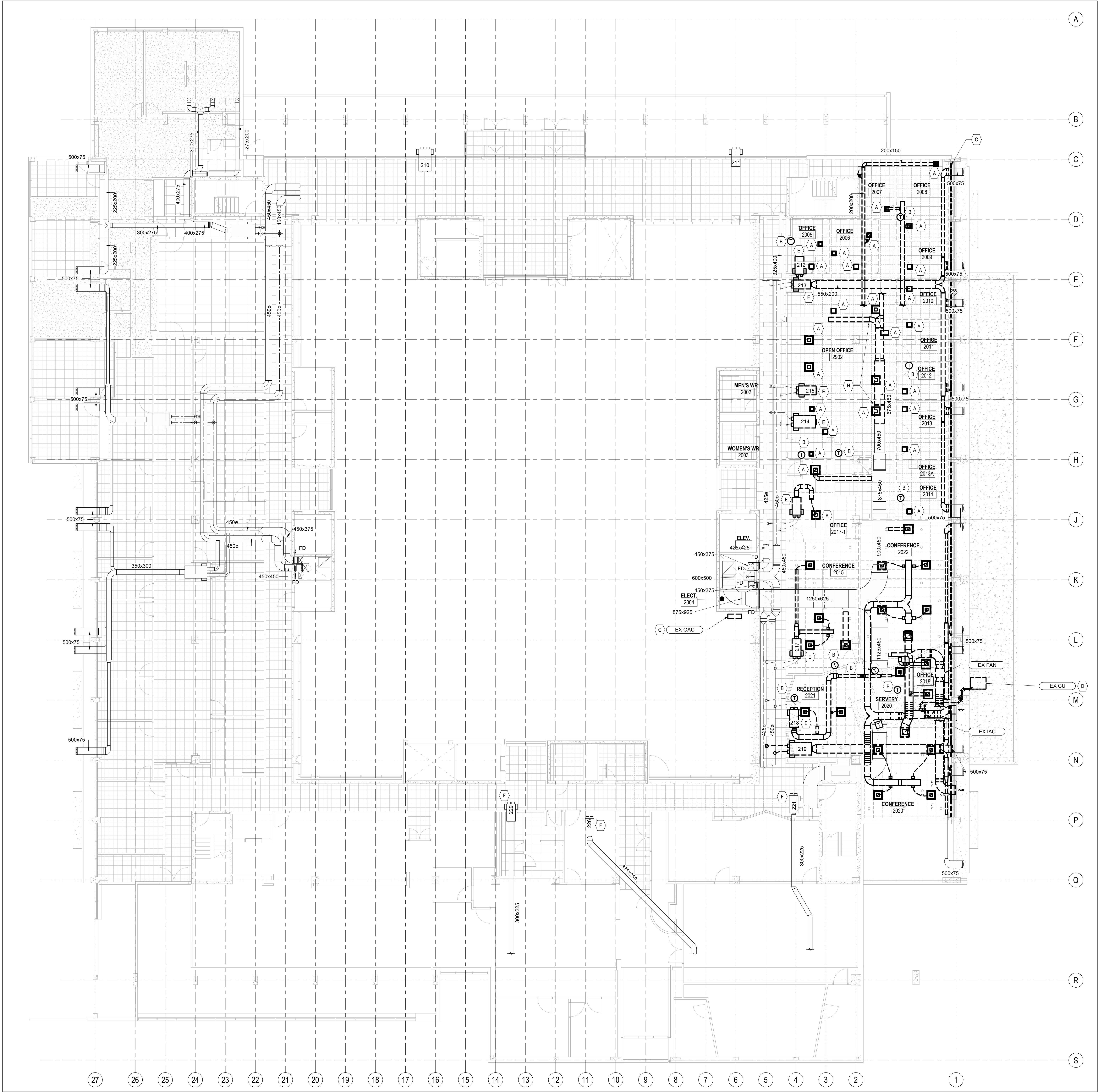
33 URSULA FRANKLIN ST.
DRAWING SHEET TITLE
**THIRD FLOOR PLAN -
PLUMBING & DRAINAGE
NEW WORK**

DRAWN BY: AL SCALE: 1 : 100
REVIEWED BY: AL DATE CREATED: 2025-08-05
UNIVERSITY PROJECT NUMBER NORTH POINT
P164-24-165

DRAWING NUMBER REV. NUMBER
M231 9

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- MECHANICAL NOTES**
- A REMOVE EXISTING DIFFUSER OR GRILLE AND DEMOLISH BRANCH DUCT BACK TO MAIN DUCT AND CAP.
- B REMOVE EXISTING PNEUMATIC THERMOSTAT. REMOVE AND CAP ASSOCIATED PNEUMATIC TUBING BACK TO MAIN CONTROL AIR LINE AND ACTUATOR.
- C REMOVE EXISTING LINEAR BAR GRILLES ON WINDOW SILL, TYPICAL FOR ALL GRILLES ADJACENT TO 2ND FLOOR EAST WINDOWS. CAP ASSOCIATED DUCTWORK.
- D REMOVE EXISTING CONDENSING UNIT AND ASSOCIATED REFRIGERANT PIPING COMPLETE WITH SUPPORTS AND CONTROLS. POWER DISCONNECTION BY ELECTRICAL CONTRACTOR. PATCHING OF BUILDING ENVELOPE BY GENERAL CONTRACTOR.
- E REMOVE EXISTING DUAL DUCT BOX COMPLETE WITH HANGERS AND CONTROLS. ALSO REMOVE ALL EXISTING DISCHARGE SUPPLY AIR DUCTWORK ASSOCIATED WITH DUAL DUCT BOX. CAP EXISTING HIGH PRESSURE FLEXIBLE DUCTWORK CONNECTED TO THIS BOX.
- F DISCONNECT INTERNAL CONSTANT VOLUME REGULATOR AND INSPECT REGULATOR AND DUAL DUCT DIVERTER DAMPER LINKAGE. LUBRICATE DAMPER LINKAGE. REVIEW CONDITION OF REGULATORS WITH MECHANICAL CONSULTANT AND RECORD DIMENSIONS OF REGULATOR. REINSTALL REGULATOR AFTER REVIEW.
- G REMOVE EXISTING SPLIT AC UNIT COMPLETE WITH INDOOR UNIT, REFRIGERANT PIPING, AND CONTROLS. CONFIRM IF THIS UNIT IS A MULTI SPLIT UNIT PRIOR TO DEMOLITION. POWER DISCONNECTION BY ELECTRICAL CONTRACTOR. PATCHING OF BUILDING ENVELOPE BY GENERAL CONTRACTOR.
- H RELOCATE THIS A PIECE OF EXISTING DUCT FOR INSTALLATION OF NEW DUCT / DIFFUSERS, REFER TO M321 FOR MORE INFORMATION.



7	ISSUED FOR TENDER	2026-04-15
6	ISSUED FOR PERMIT	2026-03-10
5	ISSUED FOR RFP CQ	2026-03-09
4	ISSUED FOR CLASS A COSTING	2026-02-18
3	ISSUED FOR 100% DD	2026-01-23
2	ISSUED FOR CLASS B COSTING	2026-01-17
1	ISSUED FOR RFP DD	2025-12-01
REV.	DESCRIPTION	DATE

KEY PLAN (NTS)	SEAL
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PROJECT TITLE
UNIVERSITY OF TORONTO
**33 URSULA FRANKLIN
MATH OFFICE
RENOVATION**

33 URSULA FRANKLIN ST.
DRAWING SHEET TITLE
**SECOND FLOOR PLAN -
HVAC EXISTING AND
REMOVAL**

DRAWN BY: BL / AL
REVIEWED BY: AL
UNIVERSITY PROJECT NUMBER / NORTH POINT
P164-24-165

DRAWING NUMBER
M320
REV. NUMBER
7

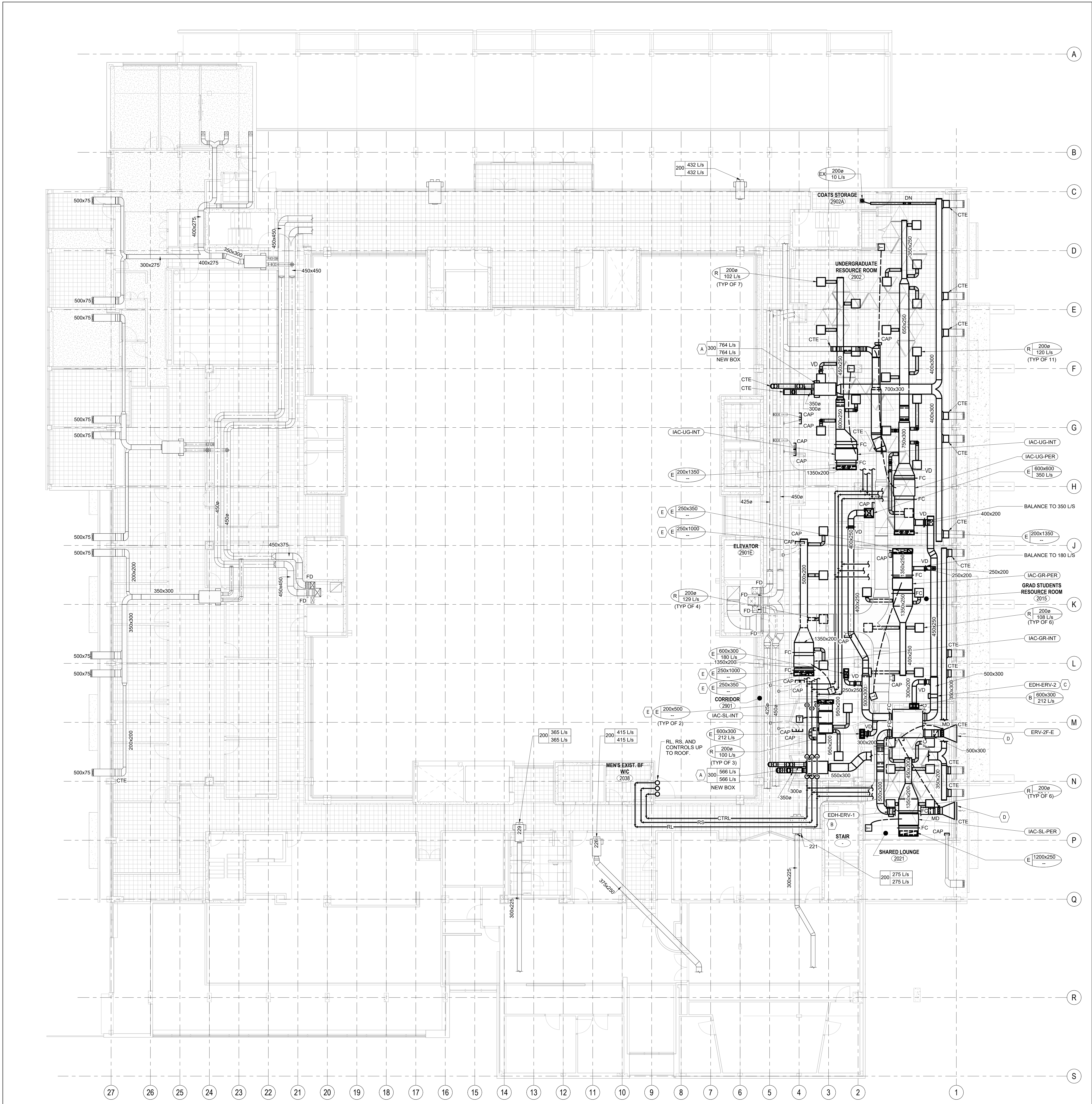
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GENERAL NOTES - 2ND FLOOR HVAC

1 REBALANCE EXISTING DUAL DUCT TERMINAL UNITS BY REFERENCING THE ANEMOSTAT RIVE OPERATING MANUAL TO ADJUST THREADED ROD LENGTH. FOR EASE OF BALANCING AND FINETUNING OF THREADED ROD, BLOCK OF DISCHARGE OF BOX BEFORE INTERNAL BAFFLES AND MEASURE AIRFLOW OF BOX FROM AIR BLOWING THROUGH BOX ACCESS DOOR.

MECHANICAL NOTES

- A PROVIDE NEW DUAL DUCT TERMINAL UNIT COMPLETE WITH HANGERS AND PNEUMATIC CONTROLS. INLET DUCTS SHALL BE RIGID, FLEXIBLE DUCTS IS NOT ACCEPTABLE. MODIFY PNEUMATIC CONTROLS TO CONVERT SINGLE ACTUATOR SIGNAL TO DUAL ACTUATOR SIGNAL (1 FOR HEAT AND 1 FOR COOL).
- B PROVIDE NEW DUCT HEATER FOR OUTDOOR AIR PREHEAT COMPLETE WITH HANGERS AND CONTROLS. POWER CONNECTION BY ELECTRICAL CONTRACTOR.
- C PROVIDE NEW DUCT HEATER FOR SUPPLY AIR TEMPERING COMPLETE WITH HANGERS AND CONTROLS. POWER CONNECTION BY ELECTRICAL CONTRACTOR.
- D CONNECT TO EXISTING LOUVER APPROXIMATELY 1200x350. SITE CONFIRM SIZE PRIOR TO FABRICATING DUCT CONNECTION.
- E PROVIDE TWO GRILLES SPLIT BETWEEN T-BAR. LENGTH OF GRILLE CAN BE ADJUSTED BASED ON SITE CONDITIONS PRIOR TO ORDERING TO HAVE THE SAME TOTAL LENGTH.



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7	ISSUED FOR TENDER	2026-04-15
6	ISSUED FOR PERMIT	2026-03-10
5	ISSUED FOR 80% CD	2026-03-09
4	ISSUED FOR CLASS A COSTING	2026-02-18
3	ISSUED FOR 100% DD	2026-01-23
2	ISSUED FOR CLASS B COSTING	2026-01-17
1	ISSUED FOR 90% DD	2025-12-01
REV.	DESCRIPTION	DATE

KEY PLAN (NTS) SEAL

PROJECT TITLE
UNIVERSITY OF TORONTO
**33 URSULA FRANKLIN
MATH OFFICE
RENOVATION**

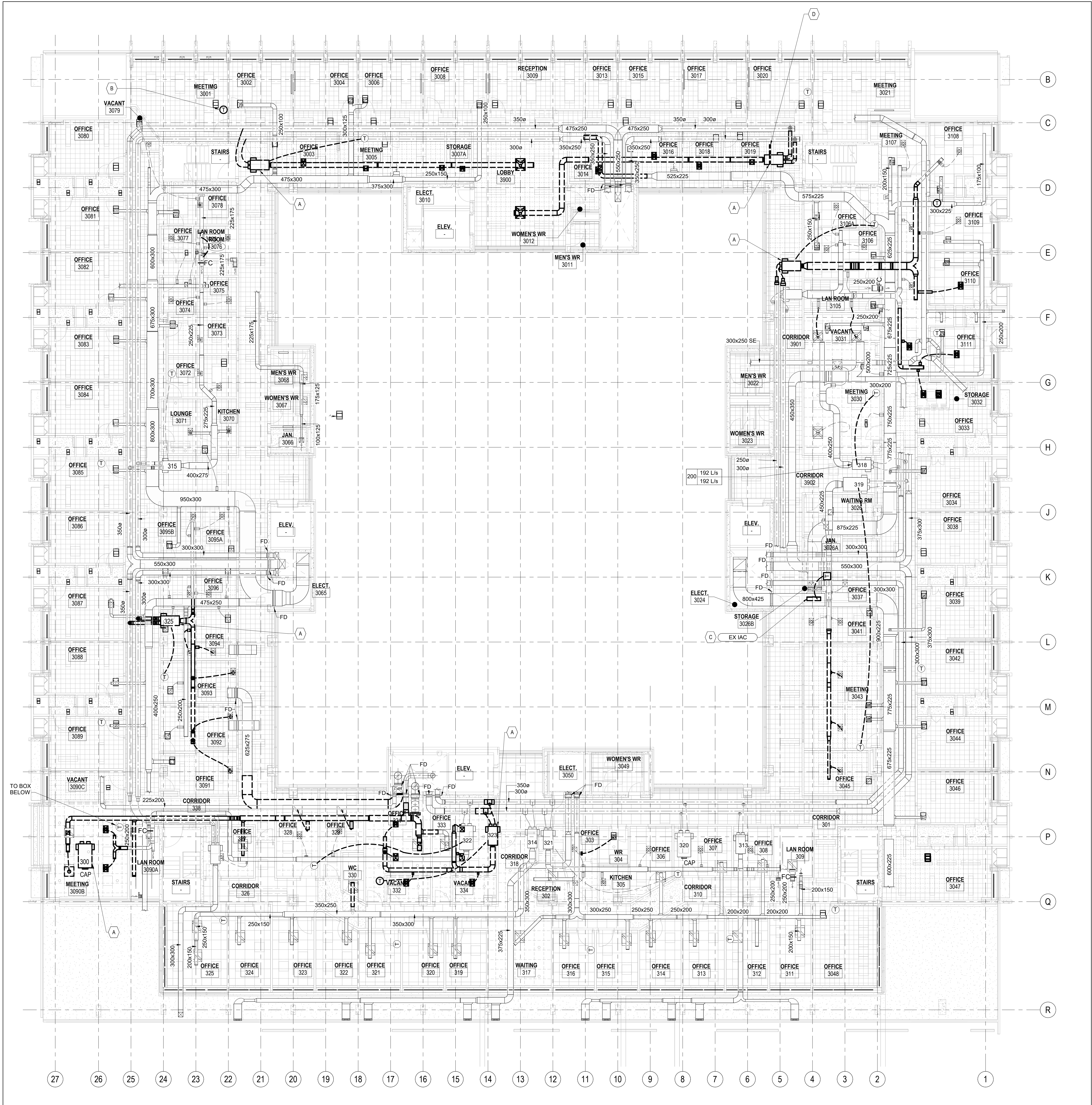
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DRAWING SHEET TITLE
**SECOND FLOOR PLAN -
HVAC NEW WORK**

DRAWN BY: BL / AL SCALE: 1 : 100
REVIEWED BY: AL DATE CREATED: 2025-08-05
UNIVERSITY PROJECT NUMBER NORTH POINT
P164-24-165

DRAWING NUMBER REV. NUMBER
M321 7

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- MECHANICAL NOTES**
- A REMOVE EXISTING DUAL DUCT BOX COMPLETE WITH HANGERS AND CONTROLS TO EXISTING PNEUMATIC THERMOSTAT
- B RELOCATE EXISTING THERMOSTAT TO OTHER SIDE OF WALL. SEE DRAWING M331 FOR NEW LOCATION
- C REMOVE EXISTING SPLIT AC UNIT COMPLETE WITH OUTDOOR UNIT, REFRIGERANT PIPING, CONTROLS, AND CONDENSATE. CONFIRM IF THIS UNIT IS A MULTI SPLIT UNIT PRIOR TO DEMOLITION. POWER DISCONNECTION BY ELECTRICAL CONTRACTOR. PATCHING OF BUILDING ENVELOPE BY GENERAL CONTRACTOR
- D REMOVE EXISTING BASEBOARD HEATER COMPLETE WITH CONTROLS. POWER DISCONNECTION BY ELECTRICAL CONTRACTOR



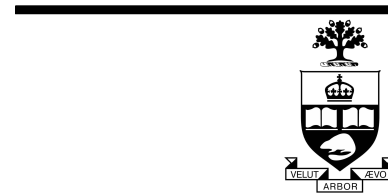
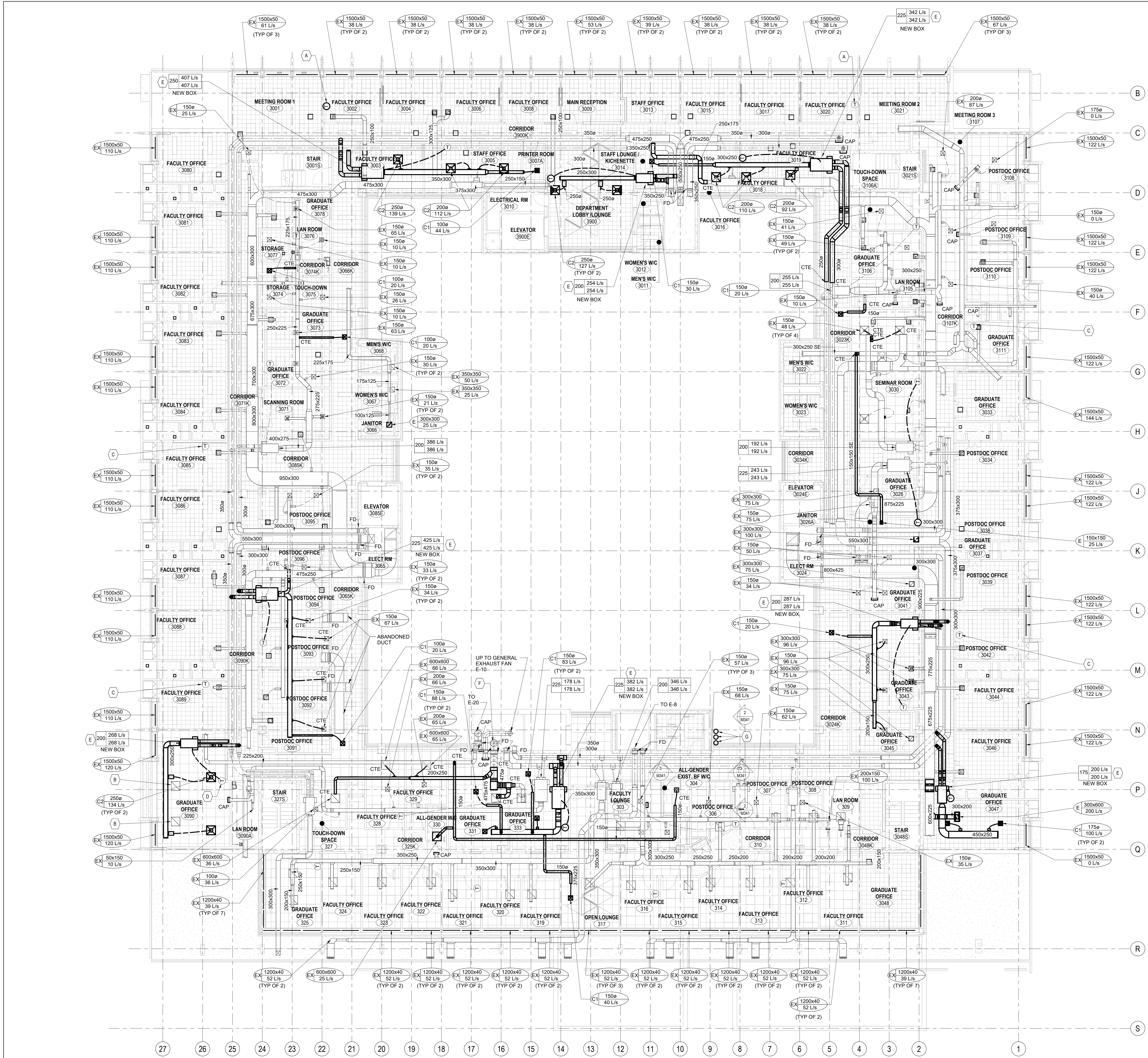
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GENERAL NOTES - 3RD FLOOR HVAC

- REBALANCE ALL RETURN/EXHAUST AIR GRILLES SO THAT TOTAL RETURN/EXHAUST AIR FOR EACH ROOM EQUALS TOTAL SUPPLY AIR TO EACH SPACE. FOR SPACES ADJACENT TO DECOMMISSIONED WASHROOMS, TOTAL RETURN AIR FROM ROOM SHALL BE THE SAME AIRFLOW AS THE SUPPLY AIR FLOW MINUS THE ADJACENT WASHROOM EXHAUST.
- REBALANCE EXISTING DUAL DUCT TERMINAL UNITS BY REFERENCING THE ANEMOSTAT #IVE OPERATING MANUAL TO ADJUST THREADED ROD LENGTH. FOR EASE OF BALANCING AND FINETUNING OF THREADED ROD, BLOCK OF DISCHARGE OF BOX BEFORE INTERNAL Baffles AND MEASURE AIRFLOW OF BOX FROM AIR BLOWING THROUGH BOX ACCESS DOOR.

MECHANICAL NOTES

- RELOCATE THERMOSTAT TO THIS LOCATION. CONNECT THERMOSTAT TO NEW DUAL DUCT TERMINAL UNIT IN LEVEL BELOW SERVING SPACE THAT THERMOSTAT IS LOCATED IN.
- REWORK RETURN DUCTWORK ASSOCIATED WITH THIS GRILLE TO ALLOW FOR INSTALLATION OF NEW SUPPLY AIR DUCTWORK TO SPACE.
- CONNECT EXISTING THERMOSTAT TO NEW DUAL DUCT TERMINAL UNIT IN LEVEL BELOW SERVING SPACE THAT THERMOSTAT IS LOCATED IN.
- DISCONNECT PNEUMATIC CONTROL TUBING TO DUAL DUCT TERMINAL UNIT IN FLOOR BELOW.
- PROVIDE NEW DUAL DUCT TERMINAL UNIT COMPLETE WITH HANGERS AND PNEUMATIC CONTROLS. INLET DUCTS SHALL BE RIGID, FLEXIBLE DUCTS IS NOT ACCEPTABLE. MODIFY PNEUMATIC CONTROLS TO CONVERT SINGLE ACTUATOR SIGNAL TO DUAL ACTUATOR SIGNAL (1 FOR HEAT AND 1 FOR COOL).
- PROVIDE NEW 415MM ROUND DUCT ON FLOOR ABOVE TO CONNECT EXISTING BRANCH DUCT TO EXISTING FAN E-11. SHAFT AND FAN IS ACCESSIBLE FROM 4TH FLOOR WITH CAT WALK. ALLOW FOR 10 FEET OF DUCTWORK COMPLETE WITH HANGERS AND SUPPORTS.
- REFRIGERANT LIQUID, SUCTION AND CONTROLS FROM ROOF TO FLOOR BELOW.



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7	ISSUED FOR TENDER	2026-04-15
6	ISSUED FOR PERMIT	2026-03-10
5	ISSUED FOR RFP C3	2026-03-09
4	ISSUED FOR CLASS A COSTING	2026-02-18
3	ISSUED FOR 100% DD	2026-01-23
2	ISSUED FOR CLASS B COSTING	2026-01-17
1	ISSUED FOR RFP D3	2025-12-01
REV.	DESCRIPTION	DATE

KEY PLAN (NTS) SEAL

PROJECT TITLE
UNIVERSITY OF TORONTO
**33 URSULA FRANKLIN
MATH OFFICE
RENOVATION**

33 URSULA FRANKLIN ST.
DRAWING SHEET TITLE
**THIRD FLOOR PLAN -
HVAC NEW WORK**

DRAWN BY: BL / AL SCALE: 1 : 100
REVIEWED BY: AL DATE CREATED: 2025-08-05
UNIVERSITY PROJECT NUMBER: NORTH POINT

P164-24-165

DRAWING NUMBER REV. NUMBER

M331 7



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A PROVIDE NEW ROOF MOUNTED OUTDOOR UNIT COMPLETE WITH SUPPORTS AND CONTROLS. POWER CONNECTION BY ELECTRICAL CONTRACTOR.

B AREA MUST BE CLEAR FOR SWING STAGE DURING WINDOW CLEANING.




KEY PLAN (NTS)	SEAL
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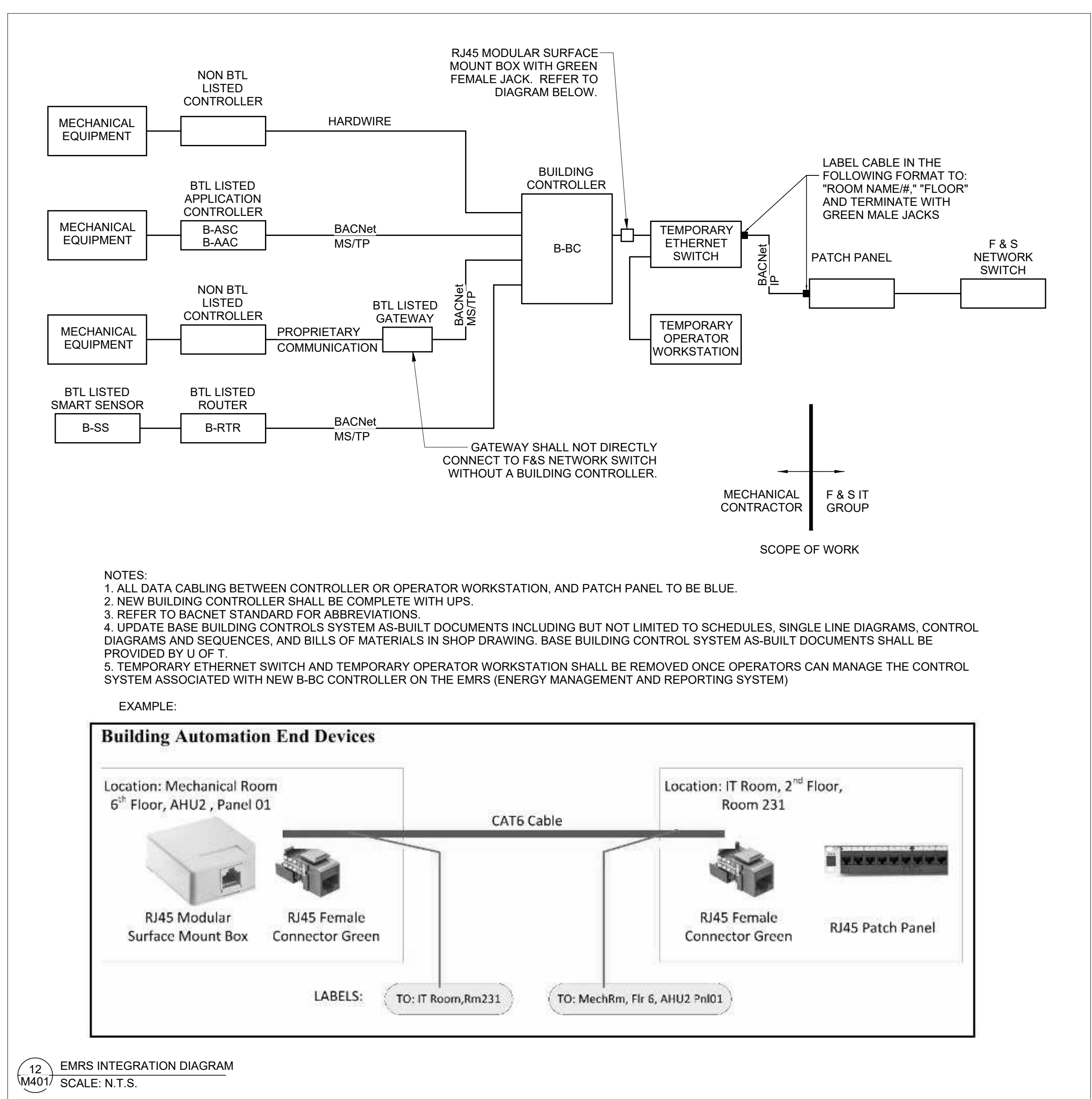
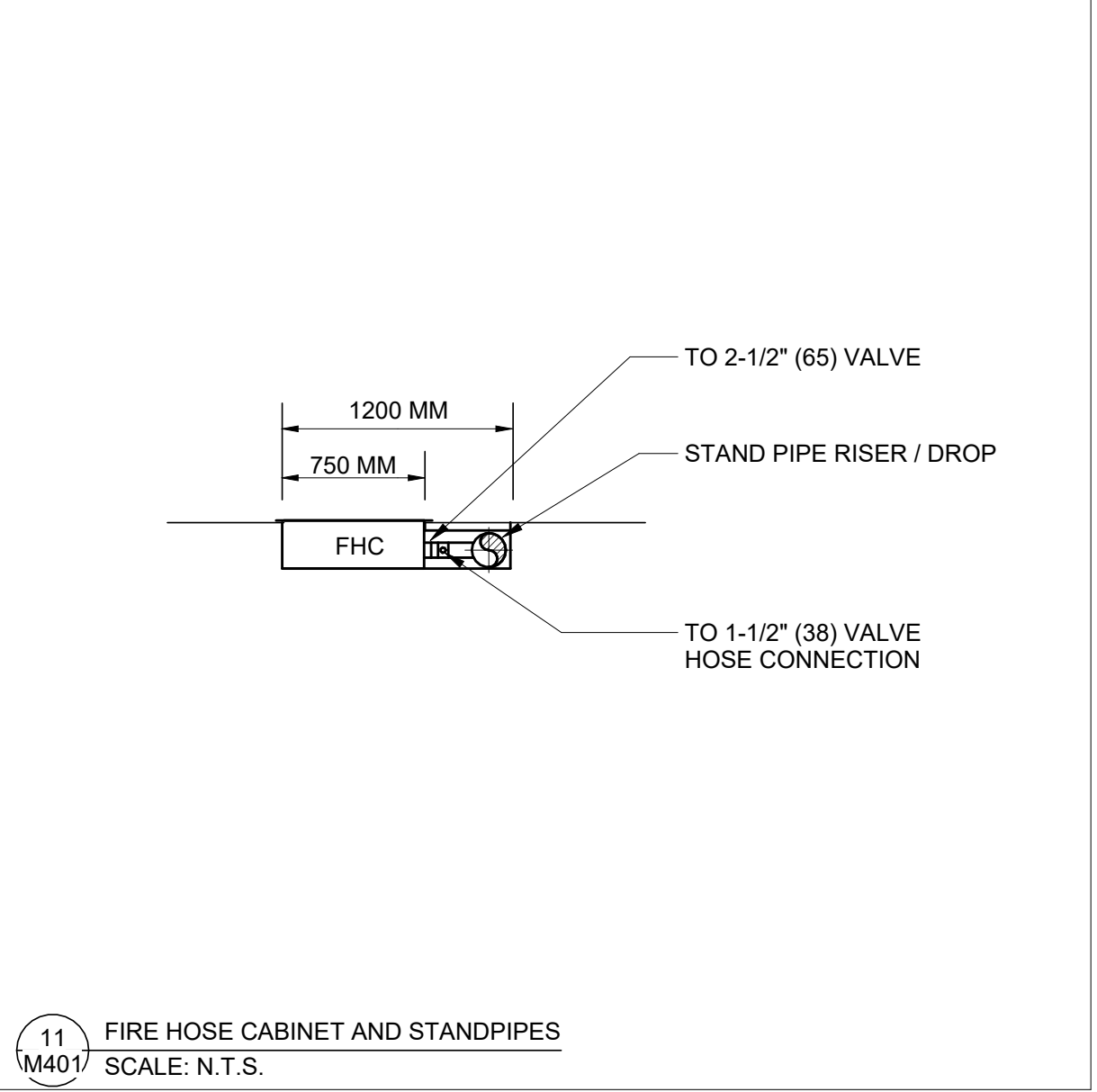
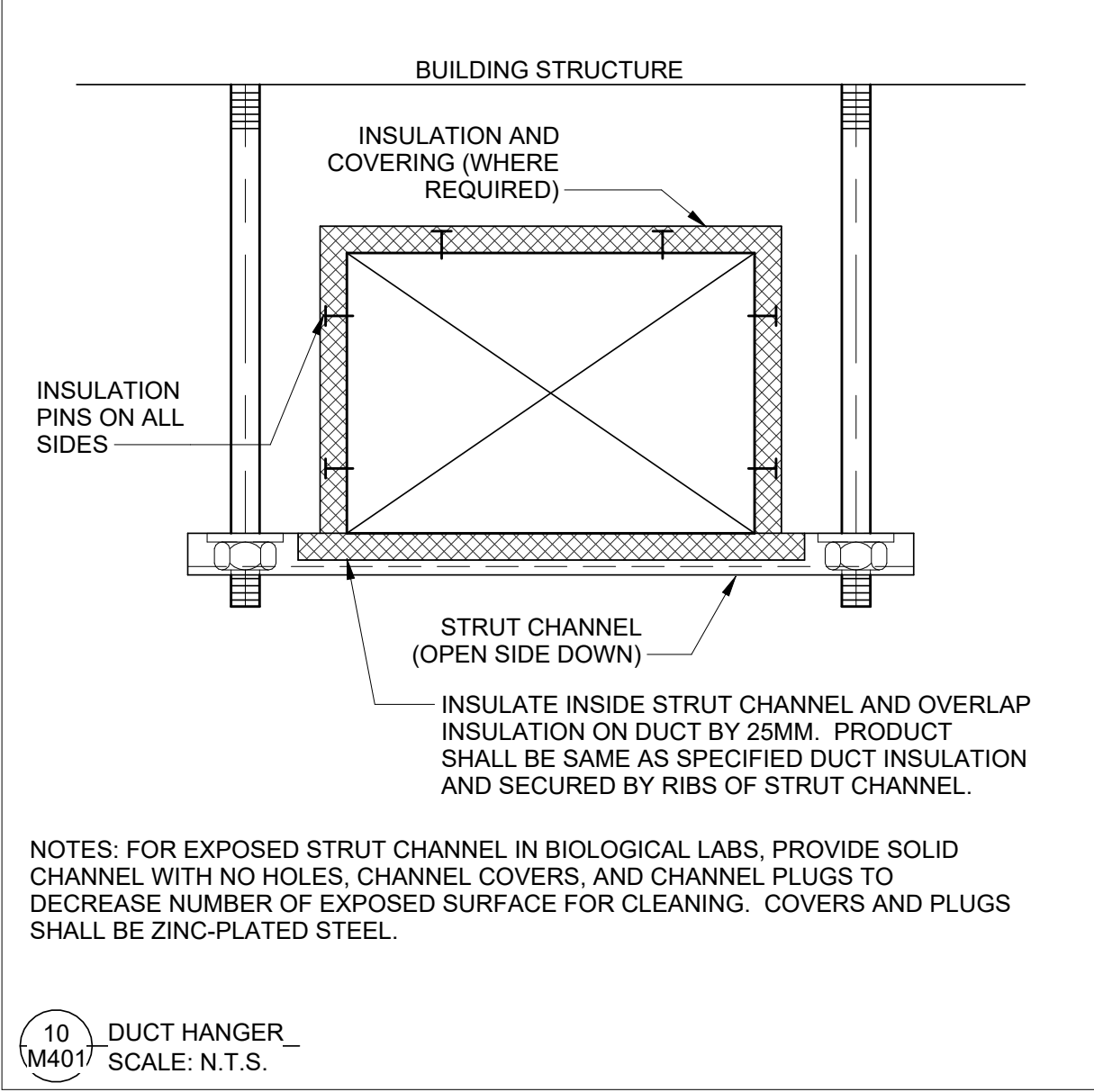
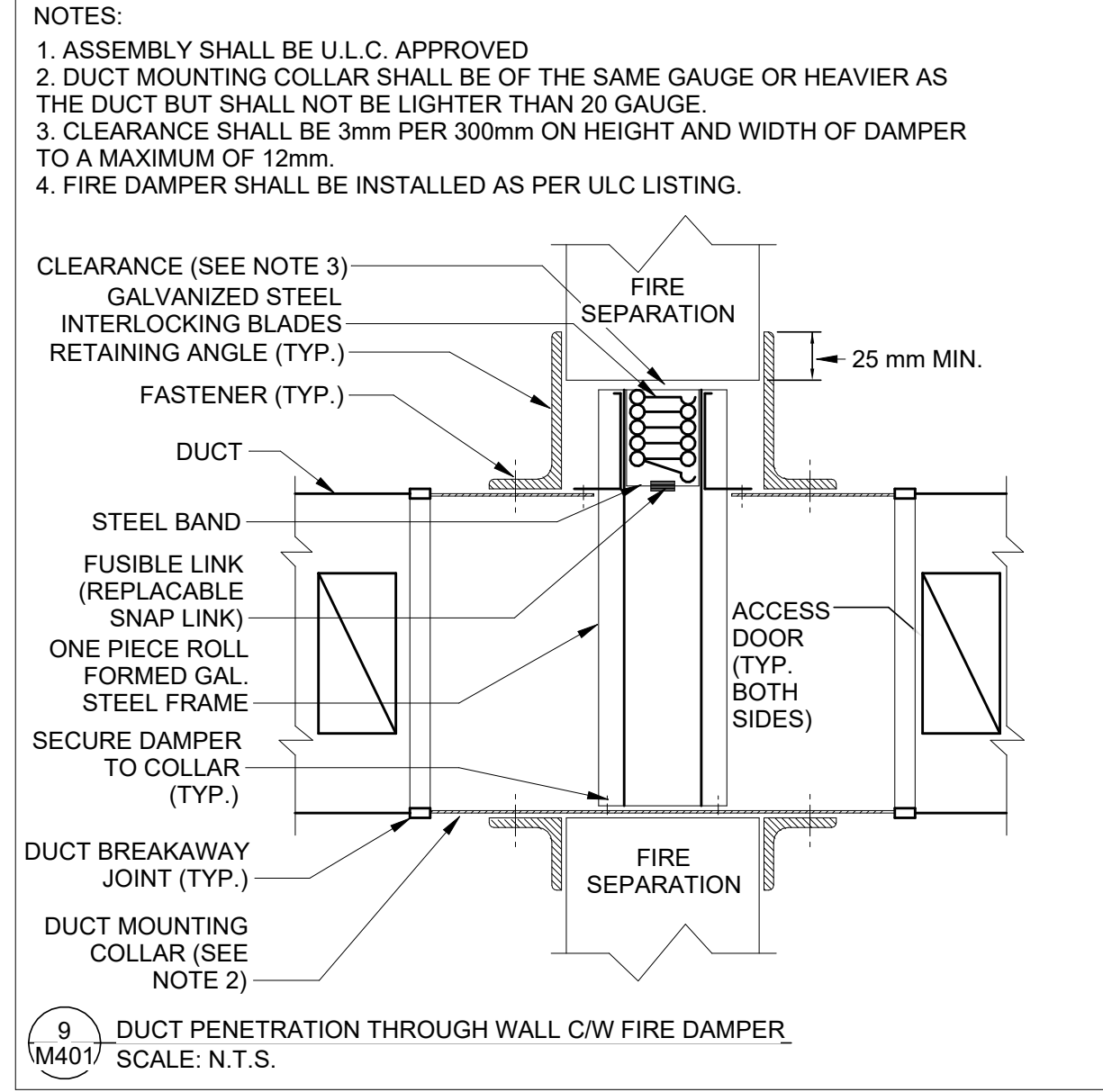
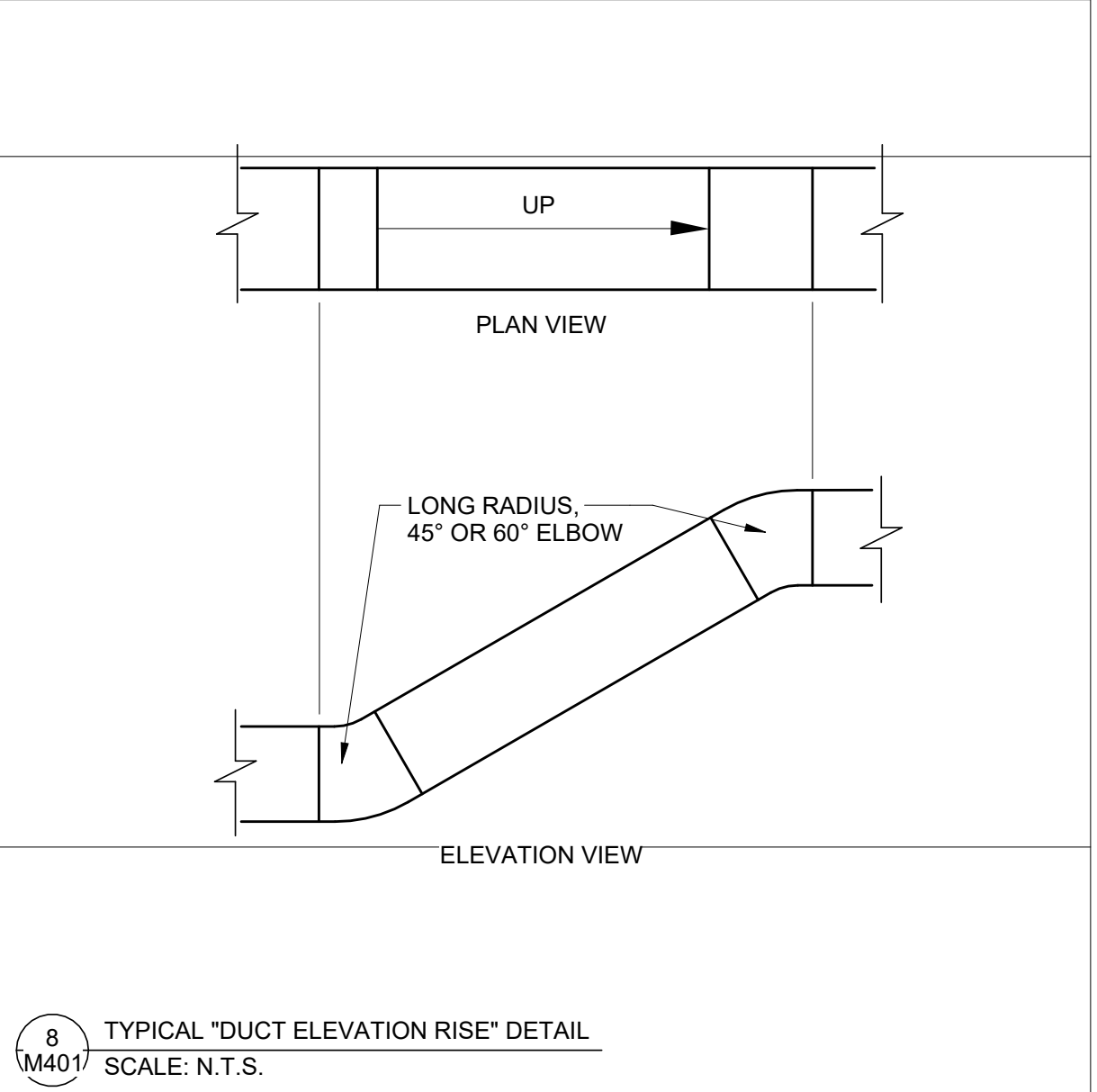
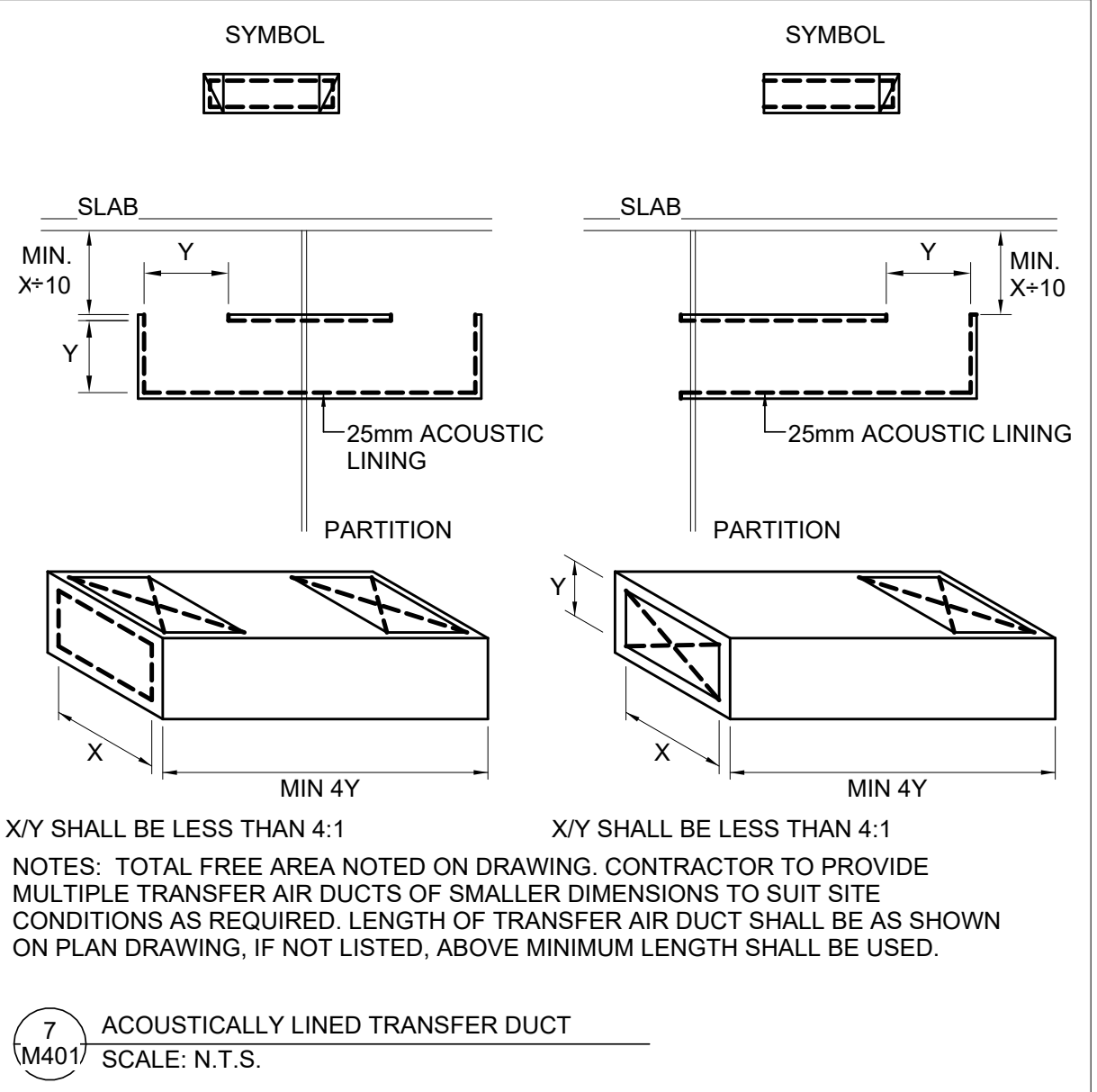
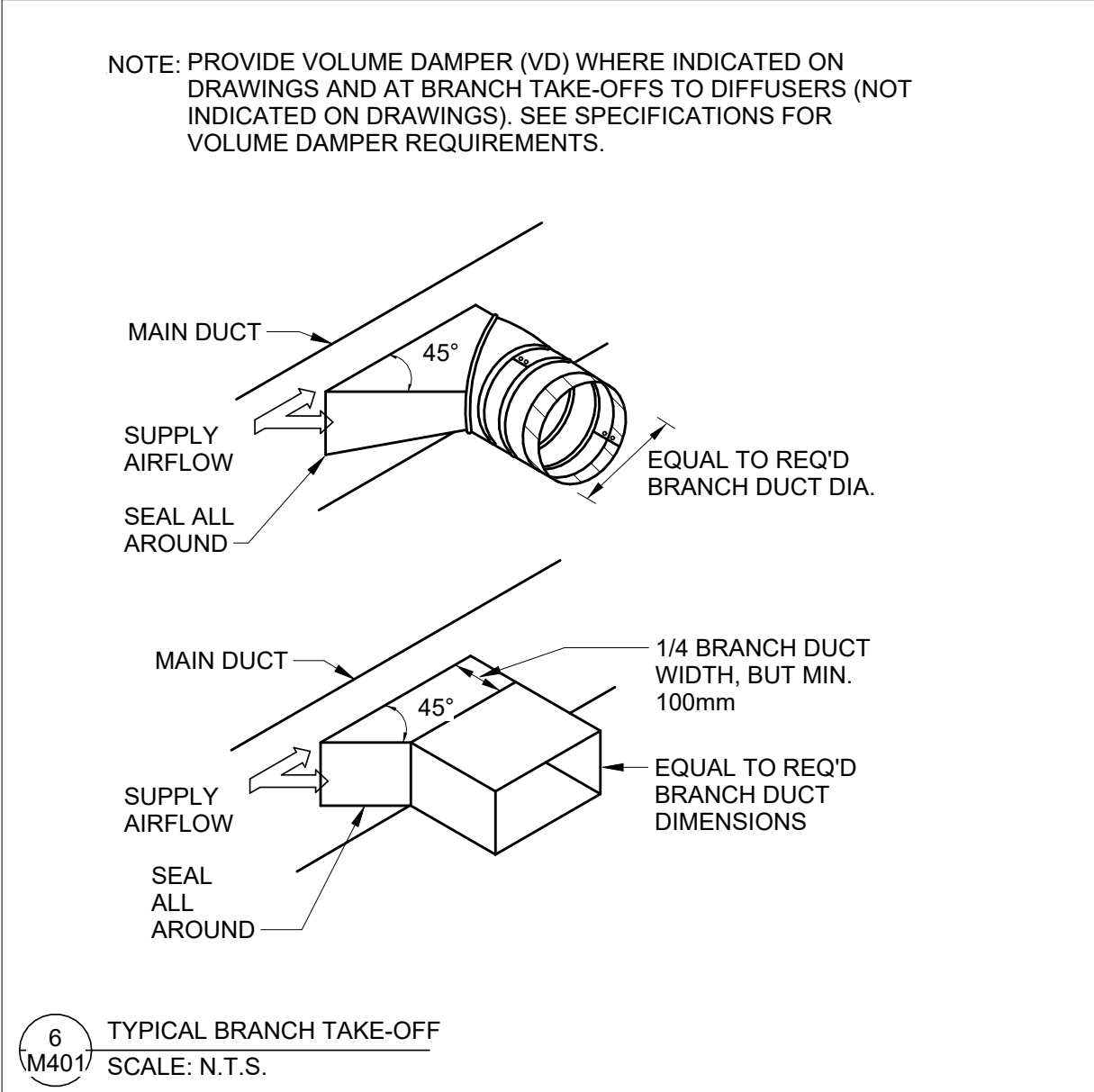
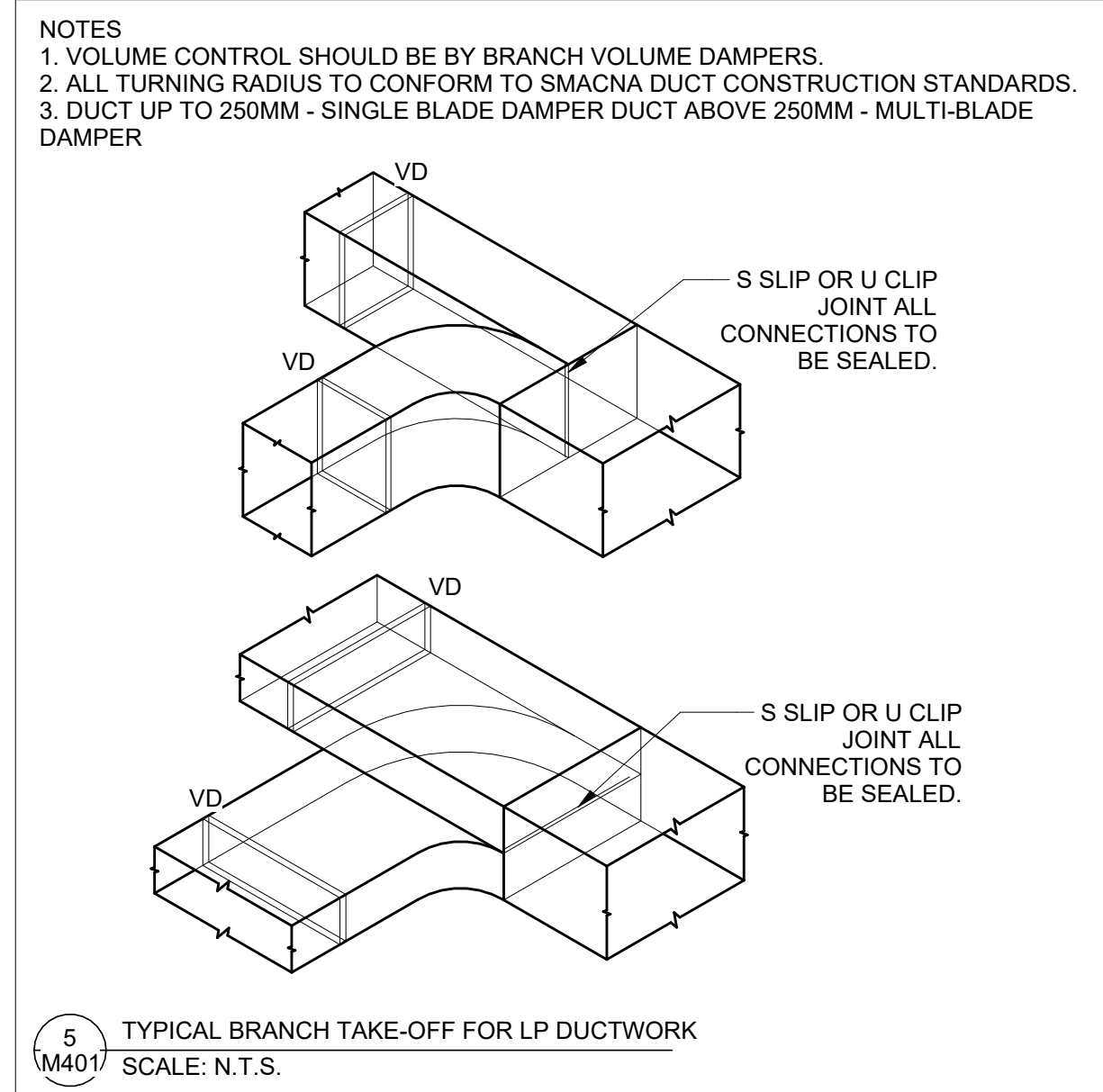
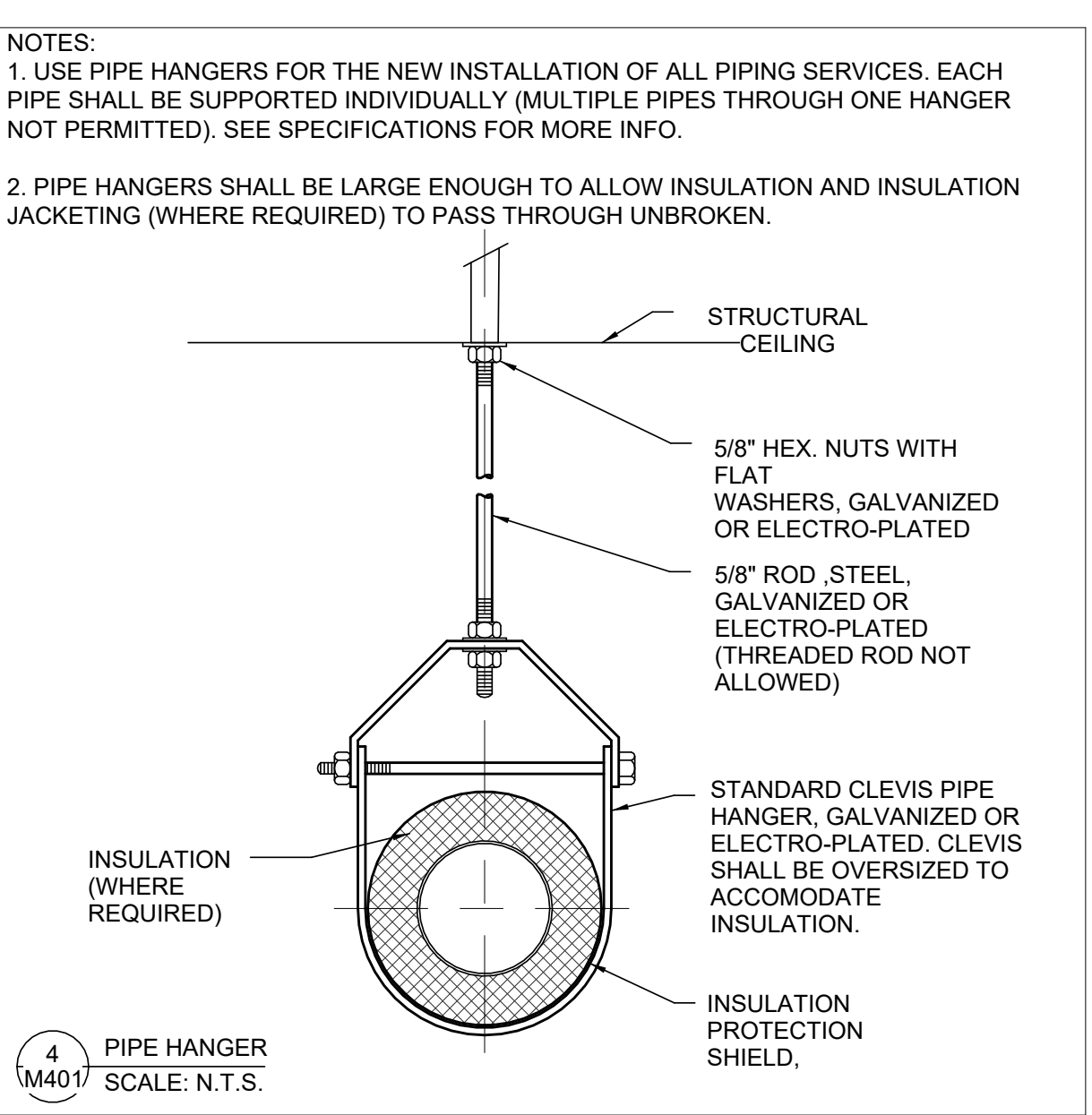
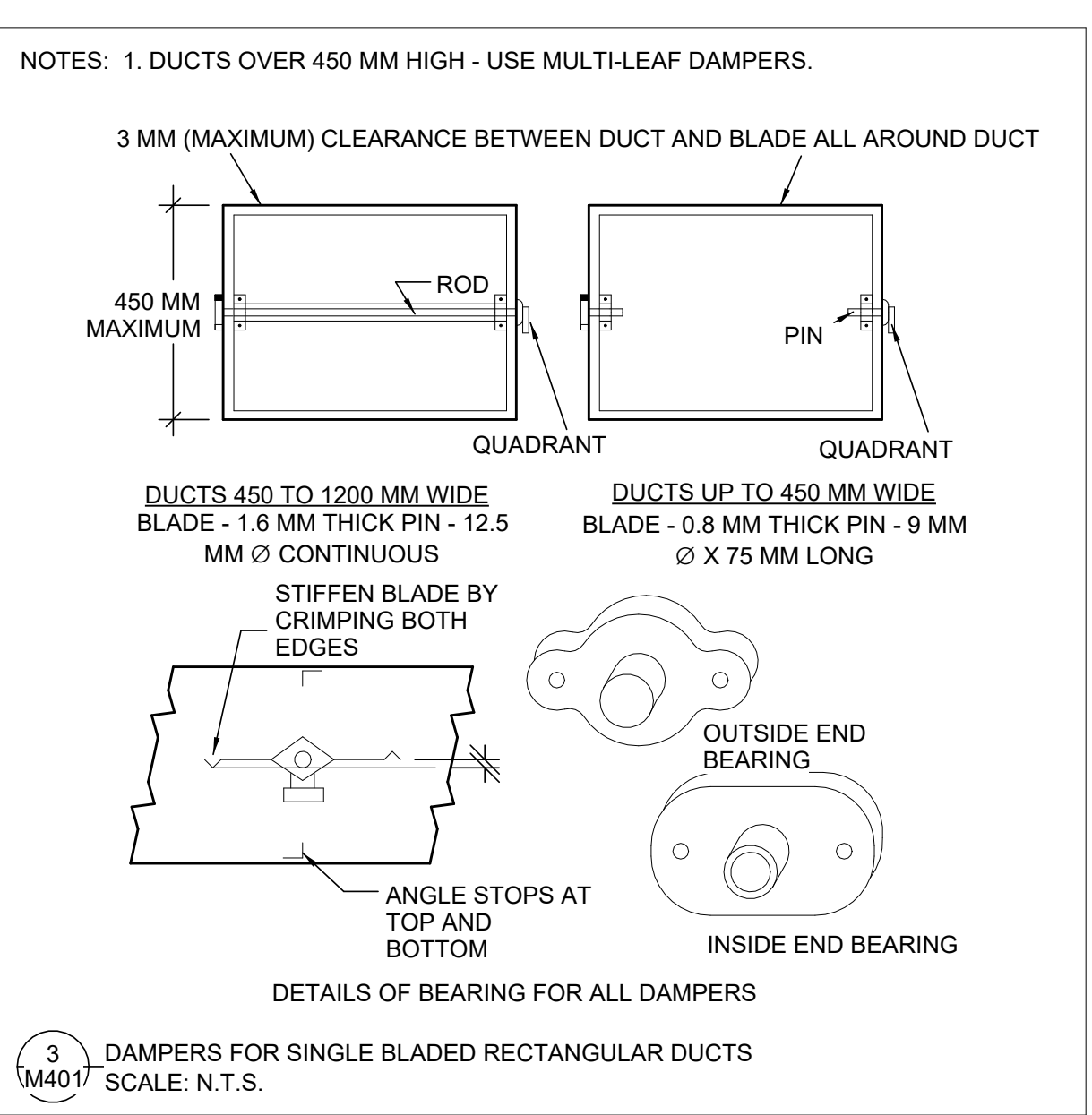
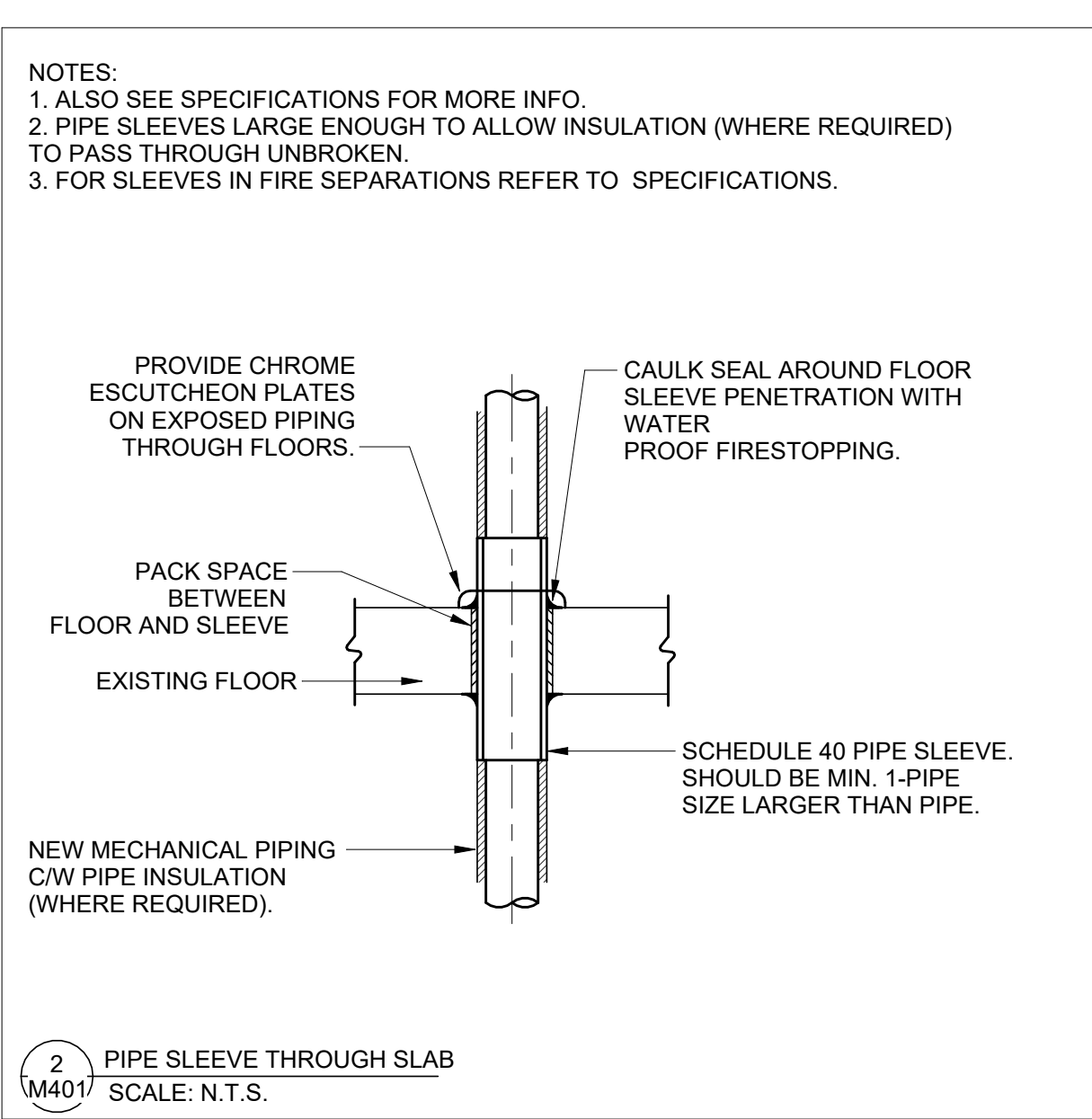
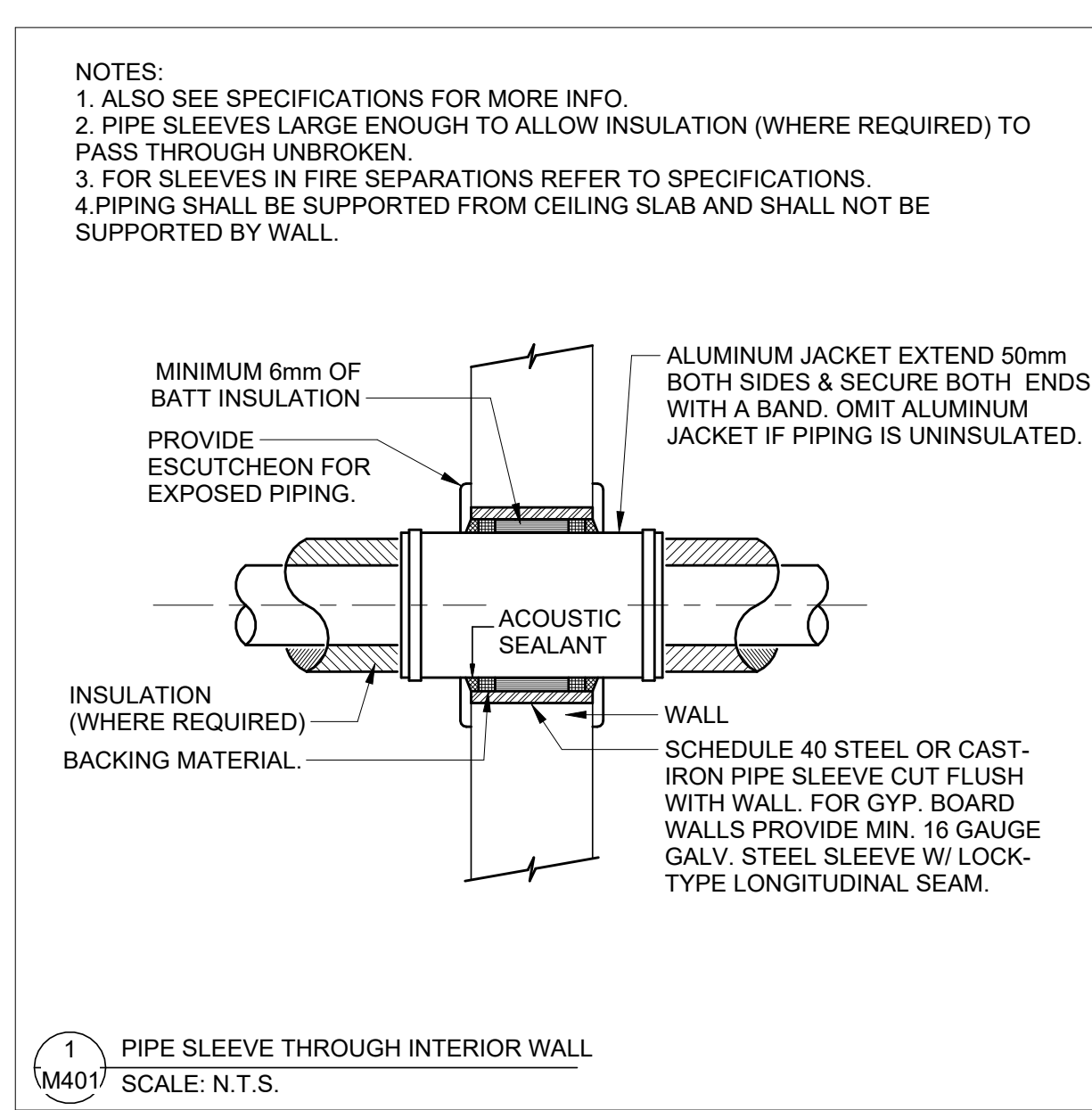
PROJECT TITLE:
UNIVERSITY OF TORONTO
**33 URSULA FRANKLIN
MATH OFFICE
RENOVATION**

33 URSULA FRANKLIN ST.
DRAWING SHEET TITLE
**ROOF PLAN - HVAC NEW
WORK**

DRAWN BY: BL / AL	SCALE: As indicated
REVIEWED BY: AL	DATE CREATED: 2025-08-05

UNIVERSITY PROJECT NUMBER	NORTH POINT
P164-24-165	

DRAWING NUMBER	REV. NUMBER
M341	6



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6	ISSUED FOR TENDER	2026-04-15
5	ISSUED FOR PERMIT	2026-03-10
4	ISSUED FOR BPA CD	2026-03-09
3	ISSUED FOR CLASS A COSTING	2026-02-18
2	ISSUED FOR 100% DC	2026-01-23
1	ISSUED FOR CLASS B COSTING	2026-01-17

REV. DESCRIPTION DATE

KEY PLAN (N/T)

SEAL

PROJECT TITLE
UNIVERSITY OF TORONTO
**33 URSULA FRANKLIN
MATH OFFICE
RENOVATION**

33 URSULA FRANKLIN ST.
DRAWING SHEET TITLE
MECHANICAL DETAILS

DRAWN BY: AL SCALE: 1 : 50
REVIEWED BY: AL DATE CREATED: 2025-08-05
UNIVERSITY PROJECT NUMBER NORTH POINT

P164-24-165

DRAWING NUMBER
M401
REV. NUMBER
6