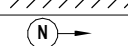
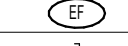
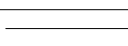
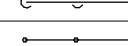
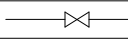
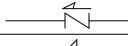
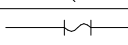
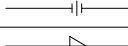
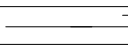
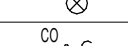
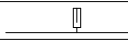
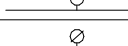
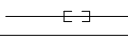
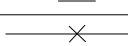
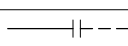
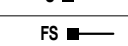
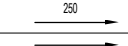
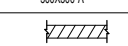
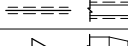
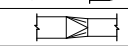
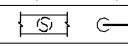
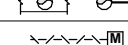
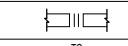
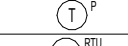
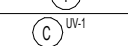
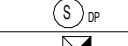
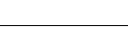


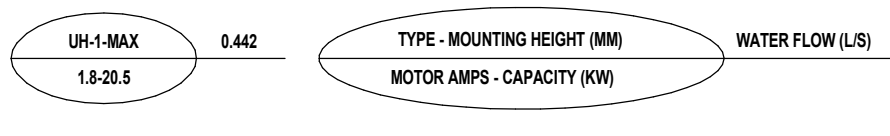
ABBREVIATIONS		LEGEND	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
AAV	AUTOMATIC AIR VENT	-----	EXISTING TO REMAIN
ACV	AUTOMATIC CONTROL VALVE	-----	EXISTING TO BE REMOVED/RELOCATED
AFF	ABOVE FINISHED FLOOR		REFERS TO NOTE ON THE SAME DRAWING/DETAIL
AO	AIR OUTLET		EQUIPMENT TAG
B	BOILER		DUCT / PIPE CAP
BAS	BUILDING AUTOMATION SYSTEM	-----	SANITARY DRAIN BELOW FLOOR/GRADE
BDT	BLOW DOWN TANK	-----	SANITARY DRAIN ABOVE FLOOR
BFF	BELOW FINISHED FLOOR	-----	STORM DRAIN BELOW FLOOR/GRADE
BFP	BACKFLOW PREVENTER	-----	STORM DRAIN ABOVE FLOOR
BS	BRANCH SELECTOR BOX	-----	DOMESTIC COLD WATER PIPING
BT	BRINE TANK	-----	DOMESTIC HOT WATER PIPING
CB	CATCH BASIN	-----	DOMESTIC HOT WATER RECIRCULATION PIPING
CBV	CIRCUIT BALANCING VALVE	-----	COLD SOFT WATER PIPING
CND	CONDENSATE	-----	HEATING WATER PIPING
CO	CLEANOUT	-----	HEATING WATER SUPPLY PIPING
CO2	CARBON DIOXIDE	-----	HEATING WATER RETURN PIPING
COP	COEFFICIENT OF PERFORMANCE	-----	LOW PRESSURE CONDENSATE RETURN PIPING (STEAM SYSTEM)
CRT	CONDENSATE RECEIVER TANK	-----	PUMPED CONDENSATE PIPING
CTE	CONNECT TO EXISTING	-----	LOW PRESSURE STEAM PIPING (10 PSIG (6.8 KPA))
CU	CONDENSING UNIT	-----	BLOWDOWN PIPING
CDW	DOMESTIC COLD WATER	-----	NON-POTABLE COLD WATER PIPING
DHW	DOMESTIC HOT WATER	-----	CONDENSATE PIPING (BOILER / COOLING COIL)
DHWR	DOMESTIC HOT WATER RECIRCULATION	-----	LOW PRESSURE NATURAL GAS PIPING (7-14" WC (1.7-3.5 KPA))
DHWT	DOMESTIC HOT WATER STORAGE TANK	-----	HIGH PRESSURE NATURAL GAS PIPING (5 PSIG (3.4 KPA))
DV	DRAIN VALVE C/W HOSE END	-----	REFRIGERANT PIPING
DX	DIRECT EXPANSION	-----	REFRIGERANT PIPING (2 PIPES)
EAT	ENTERING AIR TEMPERATURE	-----	REFRIGERANT PIPING (3 PIPES)
ECM	ELECTRONICALLY COMMUTATED MOTOR	-----	PUMP DISCHARGE
EER	ENERGY EFFICIENCY RATIO	-----	RELIEF VENT
EEV	ELECTRONIC EXPANSION VALVE	-----	SAFETY RELIEF VENT
EEW	EMERGENCY EYE WASH	-----	COMPRESSED AIR PIPING
EF	EXHAUST FAN		PIPING TURNING DOWN
ESP	EXTERNAL STATIC PRESSURE		PIPING TURNING UP
ET	EXPANSION TANK		ISOLATION VALVE
EWT	ENTERING WATER TEMPERATURE		ISOLATION VALVE (VERTICAL)
EX	EXISTING		CIRCUIT BALANCING VALVE & FLOW RATE (L/S)
EA	EXHAUST AIR		CHECK VALVE
FD	FLOOR DRAIN		PRESSURE REGULATING VALVE (PRV)
FFD	FUNNEL FLOOR DRAIN		2-WAY ELECTRONIC CONTROL VALVE
FPI	FINS PER INCH		3-WAY ELECTRONIC CONTROL VALVE
FS	FLOW SWITCH		STRAINER
FTT	FLOAT & THERMOSTATIC (STEAM) TRAP		FLEXIBLE PIPE CONNECTION
GM	GAS METER		UNION (1/2" (6MM)) / FLANGE (> 2" (50MM))
HB	HOSE BIBB		CHANGE IN PIPE SIZE
HD	HUB DRAIN		HOSE BIBB
HE	HEAT EXCHANGER		STEAM TRAP
HP	HEAT PUMP		RUNNING TRAP WITH CLEANOUT
HPG	HIGH PRESSURE GAS		THERMOMETER
HTHW	HIGH TEMPERATURE HOT WATER		PRESSURE GAUGE
HVAC	HEATING, VENTILATION & AIR CONDITIONING		PRESSURE-TEMPERATURE GAUGE
HL	HIGH LEVEL		EXPANSION JOINT
IBT	INVERTED BUCKET (STEAM) TRAP		PIPE GUIDE
IEER	INTEGRATED ENERGY EFFICIENCY RATIO		ANCHOR
LAT	LEAVING AIR TEMPERATURE		AUTOMATIC AIR VENT
LWCO	LOW WATER CUT-OFF		BACKFLOW PREVENTER
LWT	LEAVING WATER TEMPERATURE	-----	CONNECT TO EXISTING
LL	LOW LEVEL	-----	RELIEF VALVE (RV)
MCA	MINIMUM CIRCUIT AMPACITY		PUMP
MOCP	MAXIMUM OVER CURRENT PROTECTION		WATER METER
NC	NORMALLY CLOSED		SIGHT GLASS
NIC	NOT IN CONTRACT		RECTANGULAR SUPPLY DUCT UP / DN
NP	NON-POTABLE		RECTANGULAR RETURN OR EXHAUST DUCT UP / DN
NTS	NOT TO SCALE		FLEXIBLE DUCT
OA	OUTDOOR AIR		MANUAL BALANCING DAMPER
P	PUMP		FIRE DAMPER
PG	PRESSURE GAUGE		SMOKE DAMPER
PRV	PRESSURE REDUCING VALVE		COMBINATION FIRE & SMOKE DAMPER
PTG	PRESSURE TEMPERATURE GAUGE		AIRFLOW (L/S)
REL	RELOCATE FROM THIS LOCATION		GRILLEDIFFUSER SIZE (MM) & TYPE
REL'D	RELOCATE TO THIS LOCATION		ACOUSTIC LINING
RV	RELIEF VALVE		THERMAL INSULATION
RWL	RAIN WATER LEADER		DUCT SIZE TRANSITION
RIA	RETURN AIR		TRANSITION RECTANGULAR TO ROUND
SF	SUPPLY FAN		SLOPE DUCT DOWN IN DIRECTION OF AIRFLOW
SG	SUCTION GUIDE		SLOPE DUCT UP IN DIRECTION OF AIRFLOW
SIG	SIGHT GLASS		ROUND BRANCHES TURNING DOWN
SP	SEWAGE / SUMP PUMP		ROUND BRANCHES TURNING UP
SA	SUPPLY AIR		MOTORIZED DAMPER
TDV	TRIPLE DUTY VALVE		FLEXIBLE CONNECTION
TH	THERMOMETER		TRANSFER OPENING
UH	UNIT HEATER		DUCT / PIPE MOUNTED TEMPERATURE SENSOR
UG	UNDERGROUND		SPACE MOUNTED PLATE TYPE TEMPERATURE SENSOR
US	UNDERSIDE		SPACE-MOUNTED THERMOSTAT & UNIT CONTROLLED
VFD	VARIABLE FREQUENCY DRIVE		SPACE-MOUNTED CO2 SENSOR & UNIT CONTROLLED
VRF	VARIABLE REFRIGERANT FLOW		DIFFERENTIAL PRESSURE SENSOR
WC	WATER CLOSET (POOR DRAINING) - WATER COLUMN (PRESSURE MEASUREMENT)		DIFFUSER QUADRANT BLANK-OFF
WH	WATER HEATER		EXISTING TO REMAIN
WS	WATER SOFTENER		EXISTING TO BE REMOVED
			19MM UNDERCUT DOOR
			120V POWER SOURCE
			PATTERN THROUGH DIFFUSER / GRILLE & THROW DIRECTION
			120V REVERSE ACTING THERMOSTAT
			FREEZE/STAT

BOILER SCHEDULE			
SYMBOL	DESCRIPTION	MANUFACTURER & MODEL	REMARKS
B-1,2,3	GAS-FIRED, EUTECTIC CAST IRON HYDRONIC BOILER; FORCED DRAFT, MODULATING, LINKAGELESS, NATURAL GAS BURNER - HEATED FLUID: PURE WATER - MAX GAS INPUT=2638 CFH (22.2 L/S) - MAX HEAT OUTPUT=540 MBH (170 KW) - FLOW RATE=240 GPM (15 L/S) - HEAD LOSS=5.24 FT WC (1.60 M WC) - DESIGN CNT. UNIT: 100°F (71.1°C) / 180°F (82.2°C) - THERMAL EFFICIENCY=85.2% - WATER VOLUME=142 GAL. (538 L) - MAX OPERATING PRESSURE=60 PSIG (621 KPA) - BURNER TURNDOWN: 5:1 - MIN. BURNER GAS TRAIN PRESSURE=7.1" WC (1740 PA)	BOILER: DE DIERICH QT 430-124 BURNER: FUEL MASTER CRG-60-2	575-3-60, 2.0 HP (1.5 KW) (BURNER BLOWER MOTOR). BOILER NET WEIGHT: 6012 LBS (2733 KG); BURNER WEIGHT: 311 LBS (141 KG). PROVIDE THE FOLLOWING FEATURES / ACCESSORIES: - EUTECTIC CAST IRON, SECTIONAL, HEAT EXCHANGER C/W THREE-PASSES, SCOTCH-TYPE WET BASE, WETBACK DESIGN, CAST IRON FINS & TURBULATORS. - 4" (100MM) REINFORCED FIBERGLASS WOOL HEAT EXCHANGER INSULATION. - 50 PSIG (345 KPA) RELIEF VALVE (FIELD INSTALL). - LOW WATER CUT-OFF (FIELD INSTALL, PROVIDE WIRING TO BOILER CONTROL). - INTEGRAL, HIGH-LIMIT SWITCH WITH MANUAL RESET. - FLOW SWITCH (FIELD INSTALL, PROVIDE WIRING TO BOILER CONTROL). - TEMPERATURE / PRESSURE GAUGE. - 2" (50MM) DRAIN VALVE (FIELD INSTALL). - 3" (75MM) HWSR WELD CONNECTIONS. - 12" (300MM) VENT CONNECTION. - HINGED, INSULATED HEAT EXCHANGER ACCESS DOOR. - HINGED BURNER DOOR. - FULLY MODULATING, FORCED DRAFT, PRESSURE ATOMIZING-TYPE BURNER C/W SEALED COMBUSTION, INTEGRAL, MOTOR DRIVEN BLOWER, STAINLESS STEEL FLAME RETENTION COMBUSTION HEAD, OBSERVATION PORT, INDEPENDENTLY ACTUATED FUEL VALVE & AIR DAMPER, PILOT LINE & SPARK IGNITION. - BURNER STEP-DOWN TRANSFORMER FOR CONTROL CIRCUIT (PROVIDE WIRING TO BOILER CONTROL ACCORDING TO MANUFACTURER REQUIREMENTS). - BURNER GAS TRAIN C/W 5 PSIG (34.5 KPA) REGULATOR (PROVIDE FIELD VENT TO ATMOSPHERE), PRIMARY / SECONDARY MOTORIZED SHUT-OFF VALVES, BUTTERFLY-TYPE MODULATING CONTROL VALVE, PROOF OF VALVE CLOSURE INTERLOCK, MANUAL ISOLATION VALVE & PRESSURE TAPPIINGS. - PILOT GAS COCK, REGULATOR PROVIDE VENT TO ATMOSPHERE & SLOENOID VALVE. - INTEGRAL, BOILER CONTROL PANEL C/W LOCAL / REMOTE (BAS) CONTROL, TOGGLE SWITCH. - BURNER TERMINAL STRIP.
APPROVED EQUALS: - BOILER: VISSMAANN, BOSCH (BUDERUS) - BURNER: WESHAUPT, POWER FLAME			

RECIRCULATING PUMP SCHEDULE			
SYMBOL	DESCRIPTION	MANUFACTURER & MODEL	REMARKS
P-1,2,3	BOILER PRIMARY PUMP, VERTICAL, INLINE - 240 GPM (15.1 L/S) AT 50 FT (15 M) TOTAL HEAD. - 1760 RPM - FLUID: PURE WATER	TACO KV3060D	575-3-60, 5.0 HP (3.7 KW) ODP HIGH EFFICIENCY MOTOR, CLOSE COUPLED, PROVIDE CAST IRON / BRONZE FITTED CONSTRUCTION, 11.3" (287 MM) IMPELLER DIAMETER, 3" (75 MM) FLANGE SIZE. PROVIDE FLUSH LINE C/W CUNO FILTER, SIGHT GLASS & ISOLATION VALVES.
P-4,5	SYSTEM PUMP, BUILDING-WIDE, VERTICAL, INLINE - 510 GPM (32.2 L/S) AT 115 FT (35 M) TOTAL HEAD. - 1760 RPM - FLUID: PURE WATER	TACO KS4013D	575-3-60, 25 HP (19 KW) ODP HIGH EFFICIENCY MOTOR, SPLIT COUPLED, PROVIDE CAST IRON / BRONZE FITTED CONSTRUCTION, 11.3" (287 MM) IMPELLER DIAMETER, 4" (100 MM) FLANGE SIZE. PROVIDE FLUSH LINE C/W CUNO FILTER, SIGHT GLASS & ISOLATION VALVES. PROVIDE VFD TO SUIT MOTOR HORSEPOWER C/W DC CHOKE, BYPASS & DISCONNECT SWITCH.
P-6,7	ZONE PUMP, 1962 ADDITION PERIMETER HEAT, VERTICAL, INLINE - 125 GPM (7.89 L/S) AT 25 FT (7.6 M) TOTAL HEAD. - 1760 RPM - FLUID: PURE WATER	TACO KV3060D	575-3-60, 1.5 HP (1.1 KW) ODP HIGH EFFICIENCY MOTOR, CLOSE COUPLED, PROVIDE CAST IRON / BRONZE FITTED CONSTRUCTION, 5.9" (149 MM) IMPELLER DIAMETER, 3" (75 MM) FLANGE SIZE. PROVIDE FLUSH LINE C/W CUNO FILTER, SIGHT GLASS & ISOLATION VALVES. PROVIDE VFD TO SUIT MOTOR HORSEPOWER C/W DC CHOKE, BYPASS & DISCONNECT SWITCH.
P-8,9	ZONE PUMP, 1906/1923 ADDITION PERIMETER HEAT, VERTICAL, INLINE - 280 GPM (17.7 L/S) AT 40 FT (12 M) TOTAL HEAD. - 1760 RPM - FLUID: PURE WATER	TACO KV4007D	575-3-60, 5.0 HP (3.7 KW) ODP HIGH EFFICIENCY MOTOR, CLOSE COUPLED, PROVIDE CAST IRON / BRONZE FITTED CONSTRUCTION, 5.9" (149 MM) IMPELLER DIAMETER, 4" (100 MM) FLANGE SIZE. PROVIDE FLUSH LINE C/W CUNO FILTER, SIGHT GLASS & ISOLATION VALVES. PROVIDE VFD TO SUIT MOTOR HORSEPOWER C/W DC CHOKE, BYPASS & DISCONNECT SWITCH.
P-10	ZONE PUMP, 1906/1923 ADDITION UNIT VENTILATORS, VERTICAL, INLINE - 65 GPM (4.10 L/S) AT 35 FT (7.6 M) TOTAL HEAD. - 1760 RPM - FLUID: PURE WATER	TACO KV2060D	575-3-60, 1.5 HP (1.1 KW) ODP HIGH EFFICIENCY MOTOR, CLOSE COUPLED, PROVIDE CAST IRON / BRONZE FITTED CONSTRUCTION, 5.9" (149 MM) IMPELLER DIAMETER, 3" (75 MM) FLANGE SIZE. PROVIDE FLUSH LINE C/W CUNO FILTER, SIGHT GLASS & ISOLATION VALVES. PROVIDE VFD TO SUIT MOTOR HORSEPOWER C/W DC CHOKE, BYPASS & DISCONNECT SWITCH.
P-11	HV-3 HEATING COIL (HC-1) RECIRCULATING PUMP, VERTICAL, INLINE - 165 GPM (10.2 L/S) AT 30 FT (9.1 M) TOTAL HEAD. - 1760 RPM - FLUID: PURE WATER	TACO KV3060D	575-3-60, 1.5 HP (1.1 KW) ODP HIGH EFFICIENCY MOTOR, CLOSE COUPLED, PROVIDE CAST IRON / BRONZE FITTED CONSTRUCTION, 5.9" (149 MM) IMPELLER DIAMETER, 3" (75 MM) FLANGE SIZE. PROVIDE FLUSH LINE C/W CUNO FILTER, SIGHT GLASS & ISOLATION VALVES.
P-12	HV-4 HEATING COIL RECIRCULATING PUMP, VERTICAL, INLINE - 20.0 GPM (2.08 L/S) AT 30 FT (9.1 M) TOTAL HEAD. - 1760 RPM - FLUID: PURE WATER	TACO 1915	200-1-60, 0.75 HP (0.56 KW) ODP HIGH EFFICIENCY MOTOR. PROVIDE CAST IRON / BRONZE FITTED CONSTRUCTION, 3.7" (91.4MM) IMPELLER DIAMETER, 1.5" (38 MM) FLANGE.
P-13,14	TASSIE HALL, HVAC HEATING COIL RECIRCULATION PUMPS -	NOT IN CONTRACT	
P-15	HVAC-4 HEATING COIL RECIRCULATION PUMP - 15 GPM (0.9 L/S) AT 30 FT (9.1 M) TOTAL HEAD. - FLUID: PURE WATER	TACO 2400-45	115-1-60, 0.33 HP (0.25 KW) ODP HIGH EFFICIENCY MOTOR. PROVIDE CAST IRON CONSTRUCTION, 1.25" (32 MM) FLANGE.
P-16	HVAC-7 HEATING COIL RECIRCULATION PUMP - 11.7 GPM (0.74 L/S) AT 20 FT (6.1 M) TOTAL HEAD. - 1760 RPM - FLUID: PURE WATER	TACO 2400-20	115-1-60, 0.167 HP (0.12 KW) ODP HIGH EFFICIENCY MOTOR. PROVIDE CAST IRON CONSTRUCTION, 1.25" (32 MM) FLANGE.
P-17	HVAC-8 HEATING COIL RECIRCULATION PUMP - 11.2 GPM (0.74 L/S) AT 20 FT (6.1 M) TOTAL HEAD. - FLUID: PURE WATER	TACO 2400-20	115-1-60, 0.167 HP (0.12 KW) ODP HIGH EFFICIENCY MOTOR. PROVIDE CAST IRON CONSTRUCTION, 1.25" (32 MM) FLANGE.
APPROVED EQUALS: ARMSTRONG, XYLEM B&G, GRUNDFOS, WILCO			

EXPANSION TANK SCHEDULE			
SYMBOL	DESCRIPTION	MANUFACTURER & MODEL	REMARKS
ET-1,2,3,4	HOT WATER SYSTEM EXPANSION TANK - VOLUME=264 GAL. (1000 L)	AMTROL 1000-L	ASME CERTIFIED VERTICAL BLADDER TANK, 36" (914 MM DIA BY 74" (1867 MM) HIGH, OPERATING WEIGHT=2611 LBS (1278 KG), 1.5" (38 MM) CONNECTION SIZE, 125 PSIG (862 KPA) MAX WORKING PRESSURE. CHARGE TANK AIR CUSHION TO 15 PSIG (100 KPA).
APPROVED EQUALS: TACO, ARMSTRONG, XYLEM B&G, WESSELS			

HEATING COIL SCHEDULE			
SYMBOL	DESCRIPTION	MANUFACTURER & MODEL	REMARKS
HC-1	HOT WATER HEATING COIL, 1906/1923 ADDITION VENTILATION SYSTEM - CAPACITY=114 MBH (164 KW) - AIRFLOW=14,800 CFH (888 L/S) - INJECTED INSULATION - LxT=84.7" (21.1°C) - LxT=84.7" (18.2°C) - AIR PRESSURE DROP (INCL. F&B SECTION)=0.22" WC (56 PA) - ROWS: F&B 2/17 - COIL FACE AREA=28.9 FT ² (2.7 M ²) - HEATING FLUID: PURE WATER - DWT=180.8°F (82.2°C) - LWT=158.8°F (70.3°C) - FLOW RATE=107 GPM (6.76 L/S) - HEAD LOSS=16.1 FT WC (3.1 M)	DAIKIN CAC043GHAM	OPERATING WEIGHT=1549 LBS (704 KG). PROVIDE THE FOLLOWING FEATURES / ACCESSORIES: - FACE & BYPASS DAMPER C/W OPPOSED BLADE LOW LEAK DAMPERS (TAMCO 1000). - 2" (51 MM) DOUBLE WALL CASING C/W 24 GA. GALVANIZED STEEL CASING, 24 GA. INNER LINING & R-13 FOAM INJECTED INSULATION. - 8" (203 MM) CHANNEL BASE. - 2.5" (38 MM) HWSR THREADED STEEL CONNECTIONS. - COPPER TUBE / ALUMINUM FIN COIL CONSTRUCTION. - FREEZE/STAT (FIELD INSTALL & HARDWIRE TO FAN). - CASING DIMENSIONS: 56" (1422 MM) HIGH X 142" (3607 MM) WIDE X 26" (660 MM) DEEP (HEIGHT & WIDTH DIMENSIONS DO NOT INCLUDE BASE RAIL, CONTRACTOR TO DETERMINE EXACT DIMENSIONS TO SUIT EXISTING BUILT-UP AIR HANDLING UNIT & MODIFY COIL SIZE AS REQUIRED. FIELD MEASURE PRIOR TO ORDERING). - COIL HANDING TO SUIT FLOOR PLAN HWSR CONNECTION LOCATION.
APPROVED EQUALS: CARRIER, TRANE, KRUEGER, JAON, ENGINEERED AIR			

RADIATION SCHEDULE (SIGMA)	
NOTE: CAPACITIES ARE BASED ON 180°F (82.2°C) ENTERING WATER, 160°F (71.1°C) LEAVING WATER & ENTERING AIR TEMPERATURE OF 60°F (15.6°C).	
HORIZONTAL UNIT HEATERS	
	
UH-1,2: TYPE "NTH", SPEED CONTROLLER, 120-1-60, 1/20 HP, 0.68 A, 530 CFH (362 L/S), 1600 RPM. HANDING SHALL SUIT FLOOR PLAN. PROVIDE BAS TEMPERATURE SENSOR WHERE SPECIFIED ON FLOOR PLAN. UH-3: TYPE "NCH", SPEED CONTROLLER, 120-1-60, 1/20 HP, 0.68 A, 570 CFH (468 L/S), 1600 RPM. HANDING SHALL SUIT FLOOR PLANS. PROVIDE BAS TEMPERATURE SENSOR WHERE SPECIFIED ON FLOOR PLAN. UH-4: TYPE "13NH", SPEED CONTROLLER, 120-1-60, 1/4 HP, 3.3 A, 2056 CFH (807 L/S), 850 RPM. HANDING SHALL SUIT FLOOR PLANS. PROVIDE BAS TEMPERATURE SENSOR WHERE SPECIFIED ON FLOOR PLAN.	
APPROVED EQUALS: ENGINEERED AIR, ROSEMEX, KAMPMANN	

GRILLE & DIFFUSER SCHEDULE			
SYMBOL	DESCRIPTION	MANUFACTURER & MODEL	REMARKS
A	STEEL 1-CONE, ADJUSTABLE CEILING DIFFUSER, 4-WAY THROW	KRUEGER 1450A-34-F23-24X24-44	PROVIDE LAY-IN T-BAR STEEL FRAME & 24"x24" (600x600MM) PANEL SIZE. PROVIDE QUADRANT BLANK-OFF PANELS WHERE INDICATED ON THE FLOOR PLANS.
B	ALUMINUM LINEAR BAR GRILLE	KRUEGER 1500-P-30-C-43-0-01-0-44	PROVIDE 7/16" (11MM) PENCIL PROOF BAR SPACING, BAR AT 30° DEFLECTION, 0.75" (19MM) FRAME, SURFACE MOUNT ALUMINUM FRAME, SCREW HOLE MOUNTING & MODEL OBD STEEL OPPOSED BLADE DAMPER.
C	STEEL DOUBLE DEFLECTION SUPPLY GRILLE	KRUEGER 880-H-F22-NONE-01-00-00-44	PROVIDE 0.75" (19MM) BLADE SPACING, 30% HORIZONTAL FRONT BLADES, SURFACE MOUNT STEEL FRAME & SCREW HOLE MOUNTING.
D	STEEL FIXED BLADE EXHAUST GRILLE	KRUEGER 580-H-F22-NONE-01-00-00-44	PROVIDE 0.75" (19MM) BLADE SPACING, HORIZONTAL FRONT BLADES, SURFACE MOUNT STEEL FRAME & SCREW HOLE MOUNTING.
E	ALUMINUM GRID CORE RETURN GRILLE	KRUEGER EGS-F22-44	PROVIDE CORE ONLY (NO GRILLE FRAME).
F	ALUMINUM GRID CORE EXHAUST GRILLE	KRUEGER EGCS-F22-NONE-01-01-00-44	PROVIDE 0.5" (13MM) CORE, SURFACE MOUNT ALUMINUM FRAME, SCREW HOLE MOUNTING & MODEL OBD STEEL OPPOSED BLADE DAMPER.
G	ALUMINUM GRID CORE EXHAUST GRILLE	KRUEGER EGCS-F22-NONE-01-00-00-44	PROVIDE 0.5" (13MM) CORE, SURFACE MOUNT ALUMINUM FRAME & SCREW HOLE MOUNTING.
DG	STEEL DOOR GRILLE	KRUEGER 600A-01-44	PROVIDE DOUBLE FLAT FRAME & SCREW HOLE MOUNTING.
NOTES: - PROVIDE BRITISH WHITE FINISH UNLESS NOTED OTHERWISE. - PROVIDE STAINLESS STEEL FASTENERS FOR ALUMINUM GRILLES. APPROVED EQUALS: TITUS, E.H. PRICE, NALOR, METALARE			

EXHAUST FAN SCHEDULE			
SYMBOL	DESCRIPTION	MANUFACTURER & MODEL	REMARKS
EF-1	ART ROOM GENERAL EXHAUST FAN, ROOF MOUNTED, UPBLAST. - 550 CFM (26 L/S) AT 0.50" WC (0.11 KPA) ESP.	PENNBARRY DX08B	200-1-60, 0.25 HP (0.19 KW), PROVIDE ADJUSTABLE MOTOR PULLEY, BIOSCREEN, GRAVITY BACKDRAFT DAMPER, NEMA 3R DISCONNECT, THERMAL OVERLOAD PROTECTION & 24" (600MM) ROOF CURB.
EF-2	ACID STORAGE CABINET EXHAUST FAN, INLINE, SUSPENDED. - 200 CFM (9 L/S) AT 0.80" WC (0.20 KPA) ESP.	PENNBARRY SX100BC	115-1-60, 0.25 HP (0.19 KW), PROVIDE BACKDRAFT DAMPER, BELT DRIVE C/W ADJUSTABLE PULLEY, ACCESS PANELS, MOTOR COVER, CONNECTION FLANGES & THERMAL OVERLOAD PROTECTION.
EF-3	SCIENCE PREP ROOM, INLINE, SUSPENDED. - 1300 CFM (61 L/S) AT 0.80" WC (0.20 KPA) ESP.	PENNBARRY Z15	200-1-60, 1 HP (0.75 KW), PROVIDE BACKDRAFT DAMPER, INLINE ARRANGEMENT C/W INSULATED ACCESS DOOR, UNIT MOUNTED 120V SPEED CONTROLLER & THERMAL OVERLOAD PROTECTION.
EF-4	WELDING BOOTH EXHAUST FAN, UTILITY BLOWER, ROOF MOUNTED. - 4000 CFM (180 L/S) AT 2.50" WC (0.62 KPA) ESP.	PENNBARRY D18	575-3-60, 5.0 HP (2.2 KW), PROVIDE FAN ORIENTATION TO SUIT PLAN, BELT DRIVE C/W ADJUSTABLE MOTOR PULLEY, BELT GUARD, PREMIUM EFFICIENCY MOTOR, MOTOR WEATHER COVER, EXTENDED LUBE LINES, THERMAL OVERLOAD PROTECTION, NEMA 3R DISCONNECT, MIN 24" (600MM) HIGH ROOF CURB C/W NEOPRENE TOP GASKET (ADJUST CURB HEIGHT AS REQUIRED TO SUIT

INDOOR HVAC EQUIPMENT SCHEDULE

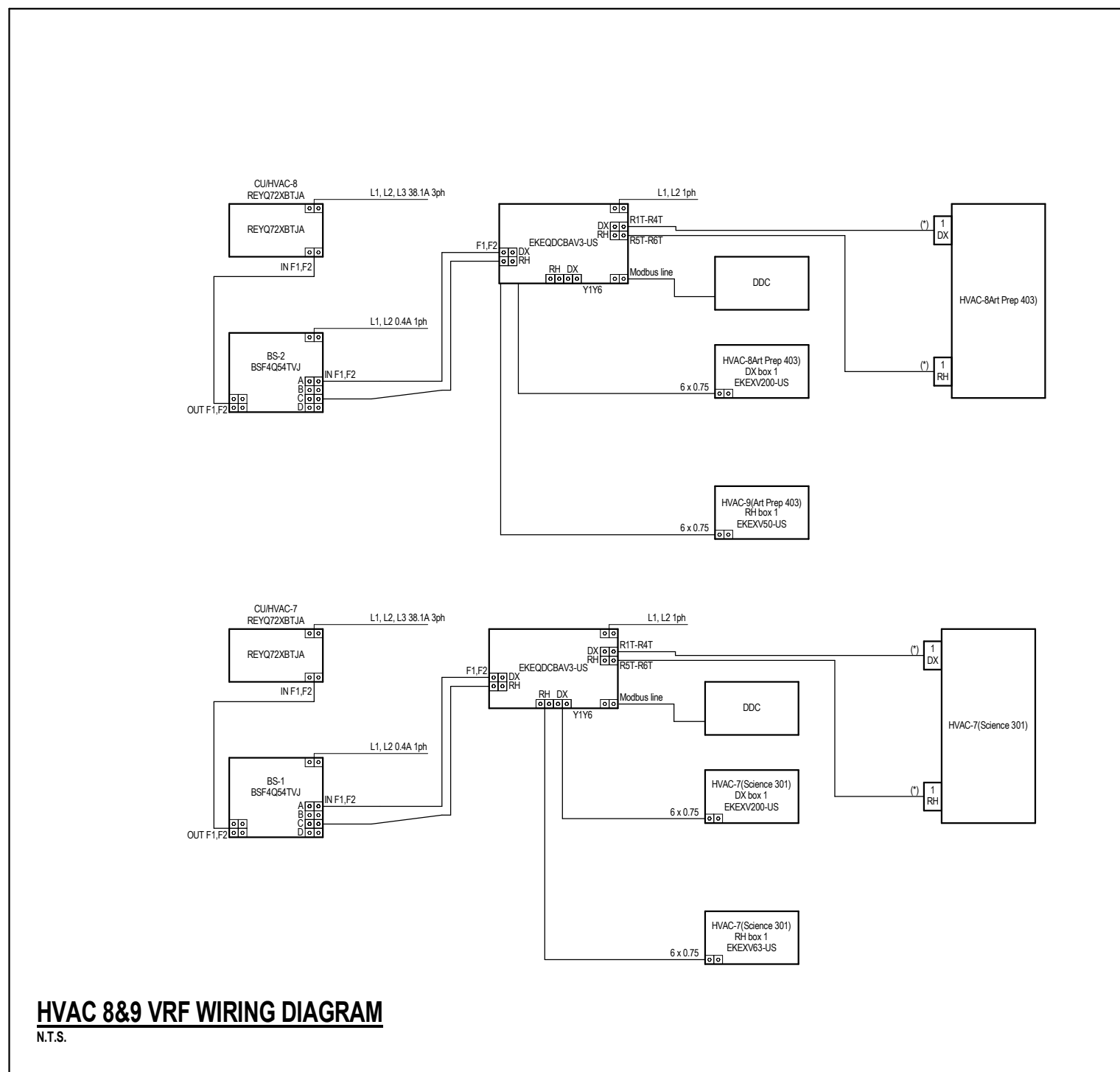
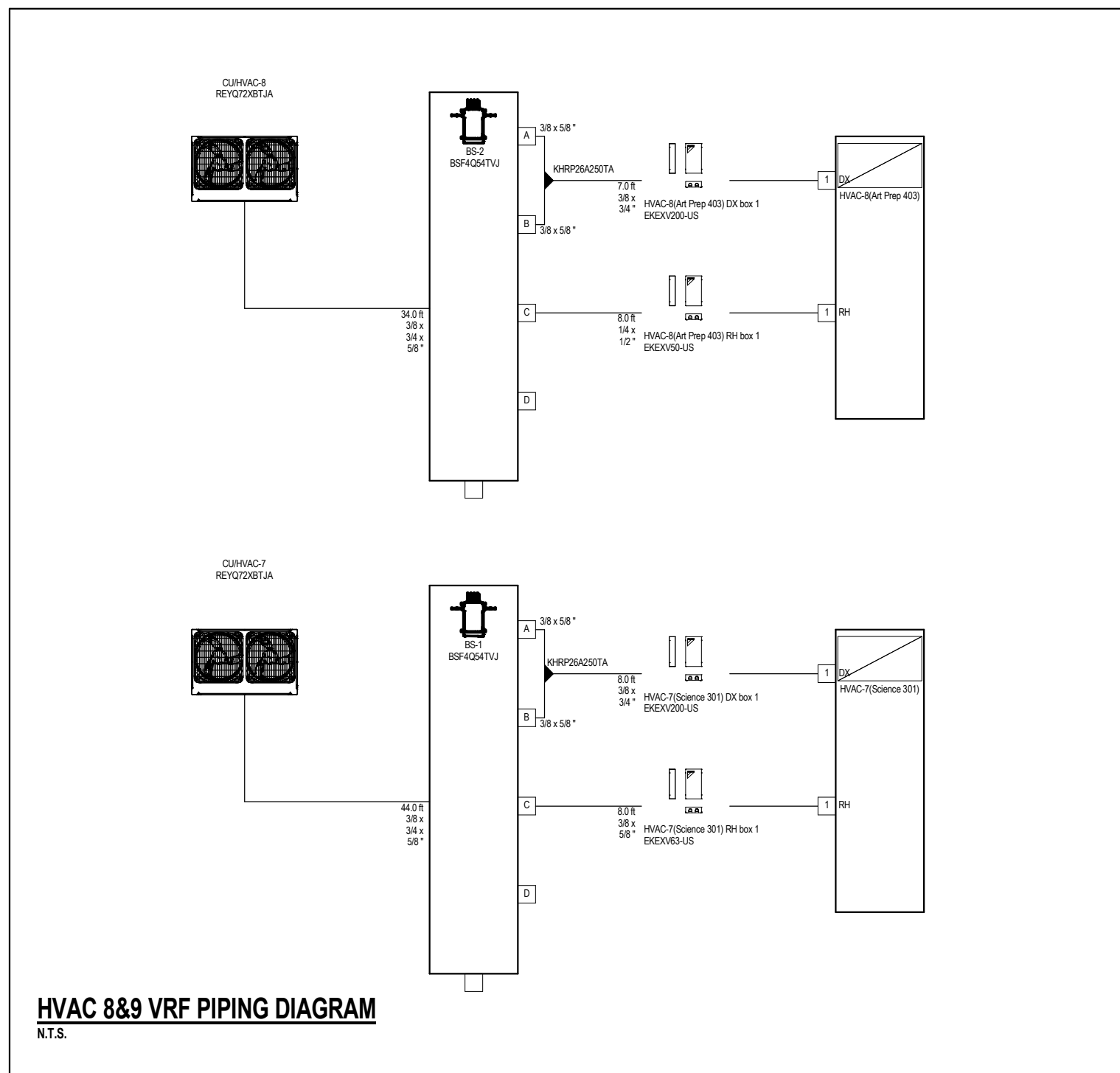
SYMBOL	MANUF. & MODEL	DESCRIPTION	WEIGHT [LBS (KG)]	ELECTRICAL		SUPPLY FAN		VENT. AIRFLOW [CFM (L/S)]	DX COOLING / HEAT PUMP HEATING COIL				REFRIGERANT REHEAT COIL				HYDRONIC HEATING SECTION																	
				POWER SUPPLY [V-PH-HZ]	MCA (AMPS)	MCCP (AMPS)	SUPPLY AIRFLOW [CFM (L/S)]		ESP [IN WC (PA)]	COOLING PERFORMANCE				HEATING PERFORMANCE				AIR PD [IN WC (PA)]	ROWS / FPI	REFRIG.	TOTAL CAP. [MBH (KW)]	EAT DB [° F (° C)]	LAT DB [° F (° C)]	AIR PD [IN WC (PA)]	ROWS / FPI	TOTAL CAP. [MBH (KW)]	EAT DB [° F (° C)]	LAT DB [° F (° C)]	AIR PD [IN WC (PA)]	EWT [° F (° C)]	LWT [° F (° C)]	FLOW RATE (USGPM [L/S])	WATER PD (FT [M])	ROWS / FPI
										NOM. CAP. (TONS)	TOTAL CAP. [MBH (KW)]	SENS. [MBH (KW)]	EAT DENBWS [° F (° C)]	LAT DBWB [° F (° C)]	TOTAL CAP. [MBH (KW)]	EAT DB [° F (° C)]	LAT DB [° F (° C)]																	
HV-4	DAIKIN CAHH10GDCM	HYDRONIC HEAT, SUSPENDED 103 TRANSPORTATION	1036 (471)	200-3-60	11.1	20	4000 (1690)	0.80 (199)	4000 (1690)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	321 (941)	-6.0 (-21.2)	67.4 (19.7)	0.53 (132)	180 (82.2)	161 (71.5)	33.2 (2.10)	7.20 (2.19)	2 / 11								
HVAC-4	DAIKIN BCH0081A	DX COOLING / HEAT PUMP HEATING, SUSPENDED 101A CLASSROOM	287 (130)	200-1-60	7.4	15	800 (380)	1.00 (249)	460 (215)	2.0	26.7 (7.83)	19.7 (5.78)	80.8 / 67.4 (27.1 / 19.7)	58.3 / 56.9 (14.6 / 13.8)	56.9 (16.7)	26.3 (-3.2)	91.3 (32.9)	0.38 (94.6)	3 / 12	R-32	N/A	N/A	N/A	N/A	78.7 (23.1)	26.3 (-3.2)	116.3 (46.8)	0.21 (52.3)	180.0 (82.2)	160.0 (71.1)	7.9 (0.50)	16.4 (5.00)	2 / 12	
HVAC-5.6	TASSIE HALL HVAC UNITS	NOT IN CONTRACT																																
HVAC-7	OXYGEN 8 TR-C-018	MODULATING DX COOLING / HEAT PUMP HEATING, SUSPENDED 301 SCIENCE	1379 (627)	200-1-60	8.8	15	1600 (755)	1.00 (249)	1300 (615)	6.0	80.8 (27.1)	49.5 (8.7)	83.1 / 69.5 (28.4 / 20.8)	55.0 / 53.5 (12.5 / 11.9)	91.6 (26.8)	17.0 (-8.3)	70.0 (21.1)	0.34 (84.6)	6 / 10	R-410A	26.3 (7.70)	55.0 (12.8)	70.2 (21.2)	0.060 (14.9)	1 / 14	115 (33.8)	8.0 (-13.3)	74.8 (23.8)	0.091 (22.6)	180.0 (82.2)	160.0 (71.1)	11.7 (0.74)	7.12 (2.17)	2 / 8
HVAC-8	OXYGEN 8 TR-C-018	MODULATING DX COOLING / HEAT PUMP HEATING, SUSPENDED 403 ART PREP	1334 (606)	200-1-60	8.8	15	1300 (615)	0.50 (124)	1300 (615)	6.0	77.1 (22.6)	45.5 (13.3)	85.0 / 71.0 (29.4 / 21.7)	53.2 / 52.3 (11.7 / 11.3)	74.4 (21.8)	17.0 (-8.3)	70.0 (21.1)	0.43 (107)	6 / 14	R-410A	21.0 (6.15)	55.0 (-12.8)	70.0 (21.1)	0.066 (12.4)	1 / 12.5	110 (32.2)	-6.0 (-21.2)	72.3 (22.4)	0.096 (23.9)	180.0 (82.2)	160.0 (71.1)	11.2 (0.71)	6.05 (1.84)	2 / 9
UV-3	AIRDALE CMP24	DX COOLING / HEAT PUMP HEATING, FLOOR-MOUNTED, STAND-UP UV 102 LIFE SKILLS	937 (426)	200-1-60	20.0	30	800 (380)	0.50 (124)	410 (195)	2.0	25.8 (7.56)	17.5 (5.13)	80.0 / 67.0 (26.7 / 19.4)	60.1 / 56.8 (15.6 / 13.8)	22.7 (6.65)	70.0 (21.1)	96.3 (35.7)	-	-	R-454B	N/A	N/A	N/A	N/A	N/A	90.6 (26.6)	32.0 (0.0)	129.3 (34.1)	-	180.0 (82.2)	159.0 (67.0)	9.0 (0.57)	5.78 (1.76)	-
UV-4	AIRDALE CMP24	DX COOLING / HEAT PUMP HEATING, FLOOR-MOUNTED, STAND-UP UV 104 CLASSROOM	937 (426)	200-1-60	20.0	30	800 (380)	0.50 (124)	385 (180)	2.0	25.8 (7.56)	17.5 (5.13)	80.0 / 67.0 (26.7 / 19.4)	60.1 / 56.8 (15.6 / 13.8)	22.7 (6.65)	70.0 (21.1)	96.3 (35.7)	-	-	R-454B	N/A	N/A	N/A	N/A	N/A	88.6 (25.3)	33.4 (0.8)	129.9 (34.4)	-	180.0 (82.2)	159.0 (67.0)	9.0 (0.57)	5.78 (1.76)	-
UV-5	DAIKIN UAVS09H7	DX COOLING / HEAT PUMP HEATING, FLOOR-MOUNTED, BELOW WINDOW UV 409 CLASSROOM	370 (168)	200-1-60	3.8	15	750 (355)	N/A	350 (165)	2.0	21.1 (5.19)	14.6 (4.27)	80.0 / 67.0 (26.7 / 19.4)	62.0 / 58.3 (16.7 / 14.6)	34.7 (10.2)	65.0 (18.3)	107.3 (41.8)	-	-	R-32	N/A	N/A	N/A	N/A	N/A	53.3 (15.6)	34.5 (1.4)	100.2 (27.9)	-	180.0 (82.2)	166.5 (67.4)	5.5 (0.35)	4.64 (1.41)	-
FOR HV-4, PROVIDE THE FOLLOWING FEATURES / ACCESSORIES: - DOUBLE WALL CONSTRUCTION CW 24 GA. GALVANIZED STEEL OUTER PANEL, 24 GA. GALVANIZED STEEL LINER & 2" (50 MM) R-15 FOAM INJECTED INSULATION. - MIXING SECTION CW TOP OUTDOOR AIR & REAR RETURN CONNECTIONS. - SECTION SPLITS. - PARALLEL BLADE LOW LEAKAGE & INSULATED OUTDOOR AIR DAMPER (TAMCO 9000 OR EQUAL), PROVIDE FIELD 24V MODULATING ACTUATOR CW SPRING RETURN (FAL OPEN) (BAS CONTROLLED). - PARALLEL BLADE LOW LEAKAGE RETURN AIR DAMPER (TAMCO 1000 OR EQUAL) WIRING TO MOTOR CONTROL PANEL. - PROVIDE FIELD 24V MODULATING ACTUATOR CW SPRING RETURN (FAL OPEN) (BAS CONTROLLED). - FIELD SECTION CW IN/2" (50MM) MERV 13 FILTER. - DIRECT DRIVE PLENUM FAN CW AIRFLOW BLADES & INTEGRATED ECM DRIVE. - ECM DRIVE FACTORY MOUNTED MOTOR CONTROL ON UNIT USING CASH FUSED DISCONNECT & LOW VOLTAGE TERMINAL STRIP. PROVIDE FIELD CONTROL & POWER WIRING TO MOTOR CONTROL PANEL. - HYDRONIC HEATING COIL CW COPPER TUBE / ALUMINUM FIN CONSTRUCTION. - PROVIDE FREEZE/STAT ON HEATING COIL & HARDWARE TO FAN. - DX COOLING / HEAT PUMP HEATING CW COPPER TUBE / ALUMINUM FIN CONSTRUCTION. - HYDRONIC HEATING COIL SECTION CW COPPER TUBE / ALUMINUM FIN CONSTRUCTION. - HEATING / COOLING COIL HANDING TO SUIT FLOOR PLANS. - STAINLESS STEEL PRIMARY DRAIN PAN & GALVANIZED STEEL SECONDARY PAN BOTH CW IN CONSTRUCTION. - PROVIDE FIELD COOLING COIL CONDENSATE DRAIN CW TRAP. SIZE TRAP ACCORDING TO MANUFACTURER REQUIREMENTS. - COIL HANDING TO SUIT FLOOR PLANS. - DISCHARGE PLENUM SECTION CW TWO DUCT CONNECTIONS & SOUND Baffle. ADJUST DUCT CONNECTION LOCATION TO SUIT FLOOR PLAN LAYOUT. - 2" (50MM) ACUSTIC INSULATION (SOUND Baffles) & REFORATED LINER ON FAN SECTION & DISCHARGE PLENUM SECTION. - KINETICS VIBRATION ISOLATION HANGERS. SELECT TO SUIT UNIT. - FLUSH MOUNTED ACCESS DOORS CW QUARTER TURN HANDLES, STAINLESS STEEL LATCHES & FASTENINGS.			FOR HVAC-4, PROVIDE THE FOLLOWING FEATURES / ACCESSORIES: - DOUBLE WALL CONSTRUCTION CW GALVANIZED STEEL OUTER PANEL, GALVANIZED STEEL LINER & 1" (25 MM) R-15 INJECTED FOAM INSULATION. - BASE RAIL FOR HANGING SPLITS. - FILTER SECTIONS CW 2" (50 MM) MERV 13 FILTER. - DIRECT DRIVE DWD FORWARD-CURVED SUPPLY FAN CW INTEGRATED ECM DRIVE. - ECM DRIVE FACTORY MOUNTED MOTOR CONTROL PANEL ON UNIT CASHING CW FUSED DISCONNECT & LOW VOLTAGE TERMINAL STRIP. PROVIDE FIELD CONTROL & POWER WIRING TO MOTOR CONTROL PANEL. - HYDRONIC HEATING COIL CW COPPER TUBE / ALUMINUM FIN CONSTRUCTION. - PROVIDE FREEZE/STAT ON HEATING COIL & HARDWARE TO FAN. - DX COOLING / HEAT PUMP HEATING CW COPPER TUBE / ALUMINUM FIN CONSTRUCTION. - HYDRONIC HEATING COIL SECTION CW COPPER TUBE / ALUMINUM FIN CONSTRUCTION. - HEATING / COOLING COIL HANDING TO SUIT FLOOR PLANS. - STAINLESS STEEL PRIMARY DRAIN PAN & GALVANIZED STEEL SECONDARY PAN BOTH CW IN CONSTRUCTION. - PROVIDE FIELD COOLING COIL CONDENSATE DRAIN CW TRAP. SIZE TRAP ACCORDING TO MANUFACTURER REQUIREMENTS. - COIL HANDING TO SUIT FLOOR PLANS. - DISCHARGE PLENUM SECTION CW TWO DUCT CONNECTIONS & SOUND Baffle. ADJUST DUCT CONNECTION LOCATION TO SUIT FLOOR PLAN LAYOUT. - 2" (50MM) ACUSTIC INSULATION (SOUND Baffles) & REFORATED LINER ON FAN SECTION & DISCHARGE PLENUM SECTION. - KINETICS VIBRATION ISOLATION HANGERS. SELECT TO SUIT UNIT. - FLUSH MOUNTED ACCESS DOORS CW QUARTER TURN HANDLES, STAINLESS STEEL LATCHES & FASTENINGS.			FOR HVAC-7, PROVIDE THE FOLLOWING FEATURES / ACCESSORIES: - DOUBLE WALL CONSTRUCTION CW PRE-PAINTED GALVANIZED STEEL OUTER PANEL, GALVANIZED STEEL LINER & 1" (25 MM) R-15 FOAM INJECTED INSULATION. - WINGED ACCESS DOORS ON BOTTOM OF UNIT CW LOCKABLE HANDLE. - MIXING SECTION CW RETURN & OUTDOOR AIR CONNECTIONS. REFER TO FLOOR PLAN / DETAIL FOR CONNECTION LOCATIONS. - LOW LEAKAGE & INSULATED OUTDOOR AIR DAMPER (TAMCO 9000 OR EQUAL), PROVIDE FIELD 24V MODULATING ACTUATOR CW SPRING RETURN (FAL CLOSED) (BAS CONTROLLED). - LOW LEAKAGE RETURN AIR DAMPER (TAMCO 1000 OR EQUAL), PROVIDE FIELD 24V MODULATING ACTUATOR CW SPRING RETURN (FAL OPEN) (BAS CONTROLLED). - 2" (50 MM) MERV 13 FILTER. - DIRECT DRIVE PLENUM SUPPLY FAN CW FACTORY-WIRED INTEGRATED ECM DRIVE. - HYDRONIC HEATING COIL SECTION CW COPPER TUBE / ALUMINUM FIN CONSTRUCTION. - PROVIDE FREEZE/STAT ON HEATING COIL & HARDWARE TO FAN. - DX COOLING / HEAT PUMP HEATING & REFRIGERANT REHEAT COIL CW COPPER TUBE / ALUMINUM FIN CONSTRUCTION. - STAINLESS STEEL DOUBLE SLOPED COOLING COIL DRAIN PAN. - HEATING / COOLING COIL HANDING TO SUIT FLOOR PLAN. - PROVIDE FIELD COOLING COIL CONDENSATE DRAIN CW TRAP. SIZE TRAP ACCORDING TO MANUFACTURER REQUIREMENTS. - INTEGRAL DRAIN VRF SEV WITH A 1/4" ANTI VIBRATION CONNECTION. - SINGLE POINT POWER CONNECTION CW NON-FUSED DISCONNECT. - FACTORY CONTROLLER CW BACNET MIP COMMUNICATION GATEWAY.			FOR UV-3, PROVIDE THE FOLLOWING FEATURES / ACCESSORIES: - DOUBLE WALL CONSTRUCTION CW PAINTED 20 GA. GALVANIZED STEEL OUTER PANEL, 20 GA. GALVANIZED STEEL LINER, 1" (25 MM THICK 2 LB/FT ³ (32 KG/M ³) DENSITY FOAM INSULATION & 2" (50 MM) THICK X-MR LB/FT ³ (18 KG/M ³) DENSITY ACUSTIC INSULATION. UNIT COLOUR ACCORDING TO ARCHITECTURAL REQUIREMENTS. - INSULATED LOCKABLE ACCESS DOOR ON FRONT OF UNIT. - ACUSTIC STUDY PACKAGE CW SUPPLY AIR ACUSTIC DAMPING. - 10" (254 MM) SUPPLY AIR ACUSTIC DISCHARGE PLENUM CW CUSTOM SIZE DUCT CONNECTION TO SUIT FLOOR PLANS. - 2" (50 MM) MERV 13 FILTER. - SUPPLY FAN: DIRECT DRIVE CENTRIFUGAL BLOWER CW INTEGRATED ECM DRIVE. - OUTDOOR COIL FAN: DIRECT DRIVE, BACKWARD CURVED CENTRIFUGAL BLOWER CW INTEGRATED ECM DRIVE. - ECONOMIZER CW POWERED RELIEF & INTEGRAL SPRING RETURN OUTDOOR AIR DAMPER ACTUATOR FAL CLOSED. - HYDRONIC HEATING COIL CW COPPER TUBE / ALUMINUM FIN CONSTRUCTION. - PROVIDE FREEZE/STAT ON HEATING COIL & HARDWARE TO FAN. - DX COOLING / HEAT PUMP HEATING REFRIGERATION SYSTEM CW COPPER TUBE / ALUMINUM FIN CONSTRUCTION, REVERSING VALVE, DUAL EXPANSION DEVICES, INTEGRAL DEFOST CONTROL & SIGHT GLASS. - TWO STAGE SCROLL, CW N2 PROPRIETARY VIBRATION ISOLATION PANS, COMPRESSOR ACUSTIC BLANKET, THERMAL OVERLOAD PROTECTION, CRANKCASE HEATER & AUTOMATIC REHEAT HIGH LOW PRESSURE SWITCHES. - STAINLESS STEEL CONDENSATE DRAIN PANS FOR INDOOR & OUTDOOR COILS. - INTEGRAL CONDENSATE PUMP. - SINGLE-POINT POWER CW DISCONNECT SWITCH. - 4XL REFRIGERANT LEAK DETECTION SYSTEM. - UL 484 AND/OR CSA C22.2 NO. 60335-2-40 CERTIFICATION. - TERMINAL STRIP CONTROL.			FOR UV-4, PROVIDE THE FOLLOWING FEATURES / ACCESSORIES: - 16 GA. PAINTED EXTERIOR STEEL PANELS. - ULTRA QUIET SOUND PACKAGE CW INTERNAL ACUSTIC INSULATION (NON FIBERGLASS) ON INTERIOR SURFACE OF TOP PANEL, FRONT PANEL & SIDES OF FAN SECTION. UNIT COLOUR ACCORDING TO ARCHITECTURAL REQUIREMENTS. - TWO ACCESS DOORS ON TOP OF UNIT, REMOVABLE SUPPLY GRILLE & REMOVABLE FRONT PANELS FOR ACCESS. ALL ACCESS POINTS CW TAMPER RESISTANT FASTENERS. - ADAPTER BACK INSULATED PLENUM SECTION CW CLOSED PIPE TUNNEL. - FULL DEPTH ENO PANELS. - 1" (25 MM) MERV 13 FILTER. - DIRECT DRIVE DWD, FORWARD CURVED CENTRIFUGAL-TYPE SUPPLY FAN CW INTEGRATED THREE-SPEED ECM DRIVE. - MODULATING OUTDOOR AIR & RETURN AIR DAMPERS, OUTDOOR AIR DAMPER SHALL BE LOW-LEAKAGE, INSULATED TYPE. PROVIDE FIELD 24V MODULATING BAS DAMPER ACTUATORS CW SPRING RETURN, OUTDOOR AIR DAMPER SHALL FAL CLOSED & RETURN AIR FAL OPEN. - DRAFT STOP WINDOW/DOOR DRAFT PROTECTION (TOP MOUNTED RETURN AIR GRILLES). - HYDRONIC HEATING COIL SECTION CW COPPER TUBE / ALUMINUM FIN CONSTRUCTION. - PROVIDE FREEZE/STAT ON HEATING COIL & HARDWARE TO FAN. - COIL FACE & BYPASS DAMPER. PROVIDE FIELD 24V MODULATING BAS DAMPER ACTUATORS CW SPRING RETURN, BYPASS DAMPER SHALL FAL OPEN & FACE DAMPER FAL CLOSED. - DX COOLING / HEAT PUMP HEATING & REFRIGERANT REHEAT COIL CW COPPER TUBE / ALUMINUM FIN CONSTRUCTION. - STAINLESS STEEL PRIMARY DRAIN PAN & GALVANIZED STEEL SECONDARY PAN BOTH CW INSULATION. - NON-FUSED DISCONNECT SWITCH. - TERMINAL STRIP CONTROL.			- APPROVED EQUALS: CARRIER, TRANE, EVENT, AAO, ENGINEERED AIR																			

OUTDOOR HEAT PUMP / CONDENSING UNIT SCHEDULE

			ELECTRICAL				DX COOLING / HEAT PUMP HEATING COIL								
SYMBOL	MANUF. & MODEL	DESCRIPTION	WEIGHT (LBS [KG])				REFRIG. TYPE	COOLING PERFORMANCE				HEATING PERFORMANCE			
				POWER SUPPLY (V-PH-HZ)	MCA (AMPS)	MOPC (AMPS)		NOM. CAP. (TONS)	TOTAL CAP. (BtUH [KW])	AMBIENT TEMP. (°F [°C])	EER / IEEER	TOTAL CAP. (BtUH [KW])	AMBIENT TEMP. (°F [°C])	COP	
CUHVAC-4	DAIKIN DHTCA3410	STAGED DX COOLING / HEAT PUMP HEATING, ROOF-MOUNTED, VERTICAL DISCHARGE	219 (99.5)	200-140	15	20	R-32	2.0	24.0 (7.0)	95.0 (35.0)	12.2 / 15.2	23.4 (8.86)	47.0 (8.3)	4.1	
CUHVAC-7.8	DAIKIN REYQ7Z8TJAJ	MODULATING DX COOLING / HEAT PUMP HEATING, ROOF-MOUNTED, VERTICAL DISCHARGE	727 (330)	200-340	38.1	45	R-410A	6.0	69.0 (20.2)	95.0 (35.0)	12.2 / 19.4	69.0 (20.2)	47.0 (8.3)	3.8	
CUUV-5	DAIKIN DHTCA3410	STAGED DX COOLING / HEAT PUMP HEATING, ROOF-MOUNTED, VERTICAL DISCHARGE	219 (99.5)	200-140	15	20	R-32	2.0	24.0 (7.0)	95.0 (35.0)	12.2 / 15.2	23.4 (8.86)	47.0 (8.3)	4.1	
FOR CUHVAC-4 & CUUV-5, PROVIDE THE FOLLOWING FEATURES / ACCESSORIES: -STEEL LOVERED COIL GUARD -TWO-STAGE SCROLL COMPRESSOR C/W CRANKCASE HEATER, MUFFLER & SOUND BLANKET. -TWO-SPEED CONDENSER FAN C/W INTEGRATED ECM DRIVE -COPPER TUBE / ALUMINUM FIN COIL CONSTRUCTION -THERMAL EXPANSION VALVE KIT (FIELD INSTALL.) -HIGH / LOW PRESSURE SWITCHES -BI-FLOW LIQUID LINE FILTER DRIER -SUCTION LINE ACCUMULATOR -DEFROST CONTROL C/W SHORT CYCLE PROTECTION -FACTORY INSTALLED AMBIENT & COIL TEMPERATURE SENSORS -TERMINAL STRIP CONTROLS							FOR CUHVAC-7.8, PROVIDE THE FOLLOWING FEATURES / ACCESSORIES: -ECFOOT MODEL EPF410-H SUPPORT SYSTEM -INVERTER SCROLL COMPRESSOR C/W THERMAL OVERLOAD PROTECTION, CRANKCASE HEATER, VIBRATION ISOLATION & FLASH VAPOUR INJECTION -TWO VARIABLE SPEED OUTDOOR FAN C/W ECM DRIVE -THERMAL ELECTRONIC EXPANSION VALVES, FOUR-WAY VALVES, SOLENOID VALVES, CHECK VALVES, CAPILLARIES, FILTERS & SERVICE STOPS -OUTDOOR HEAT EXCHANGER C/W COPPER TUBE / ALUMINUM FIN CONSTRUCTION, ANTI-CORROSION COATING & THREE-CIRCUIT DESIGN -OIL SEPARATOR -LIQUID LINE RECEIVER -SUCTION LINE ACCUMULATOR -DEFROST CONTROL FOR UNINTERRUPTED HEATING -SCHEDULED PERFORMANCE VALUES ARE NOMINAL. CONFIRM EXACT CAPACITY & LOSSES BASED ON INSTALLATION CONDITIONS								
-APPROVED EQUALS: CARRIER, TRANE, LENOX															
-APPROVED EQUALS: MITSUBISHI, LG															

VRF BRANCH SELECTOR BOX SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURER & MODEL	REMARKS
BS-12	HEAT RECOVERY MULT-PORT BRANCH SELECTOR BOX - MAX PORT CAPACITY=54.0 MSH (15.9 KW) - MAX UNIT CAPACITY=144 MSH (42.2KW) - NUMBER OF PORTS : 4	DAIKIN BSF4024TVJ	208-110, MCA=6.4, MOCIP=15, UNIT WEIGHT=49 LBS (22 KG). PROVIDE THE FOLLOWING FEATURES / ACCESSORIES: - INTERNAL RIG, MODULES - PIPE REDUCER KITS (WHERE REQUIRED) - R-410A REFRIGERANT.
APPROVED EQUALS: LG, MITSUBISHI			



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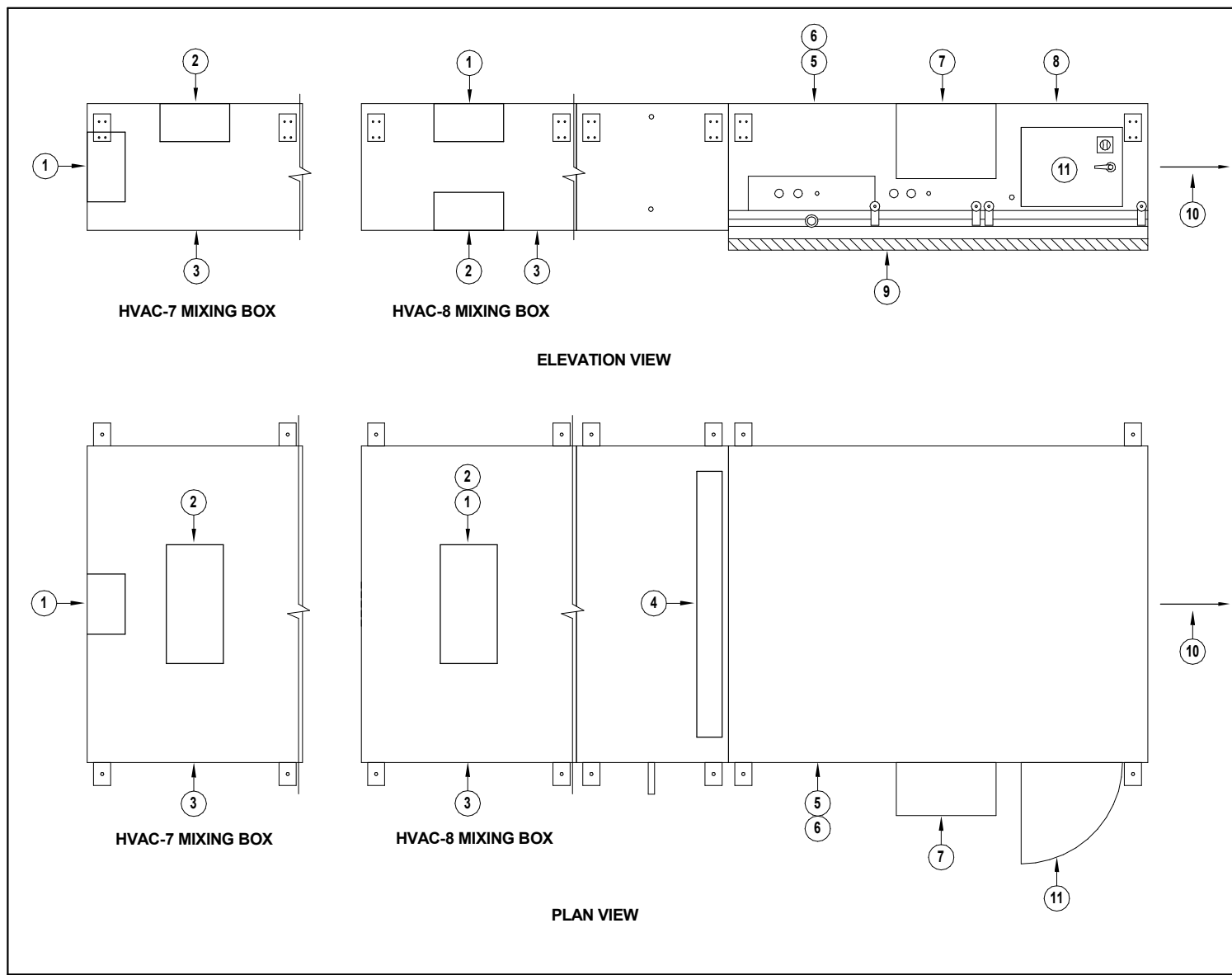
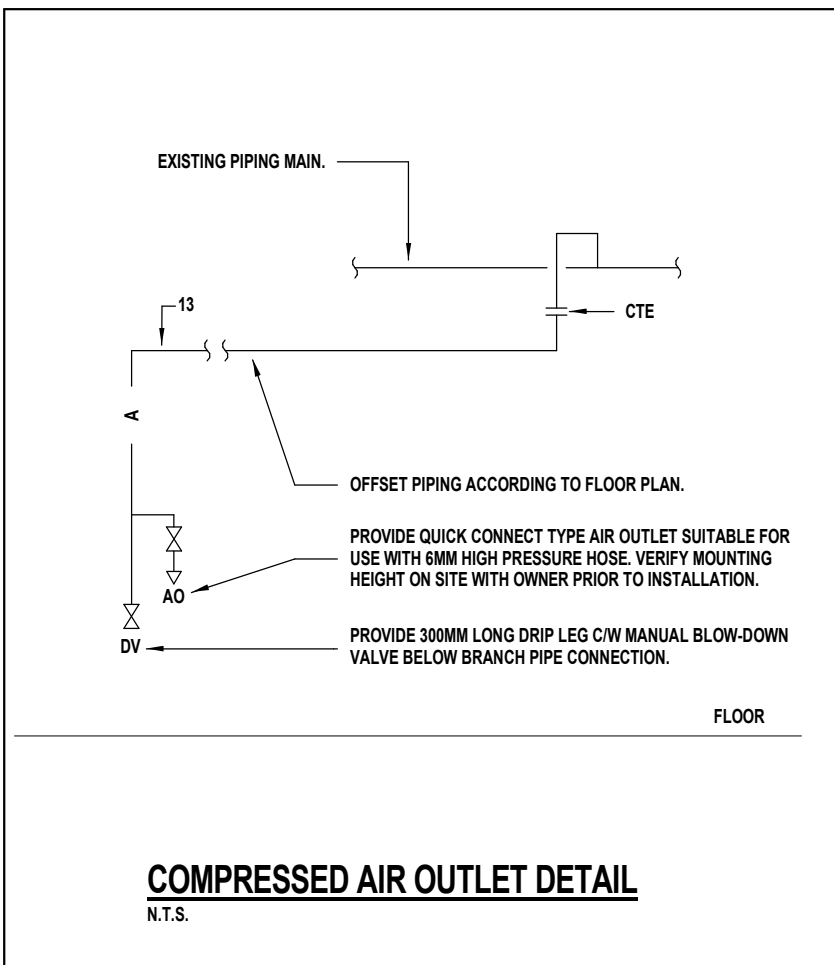
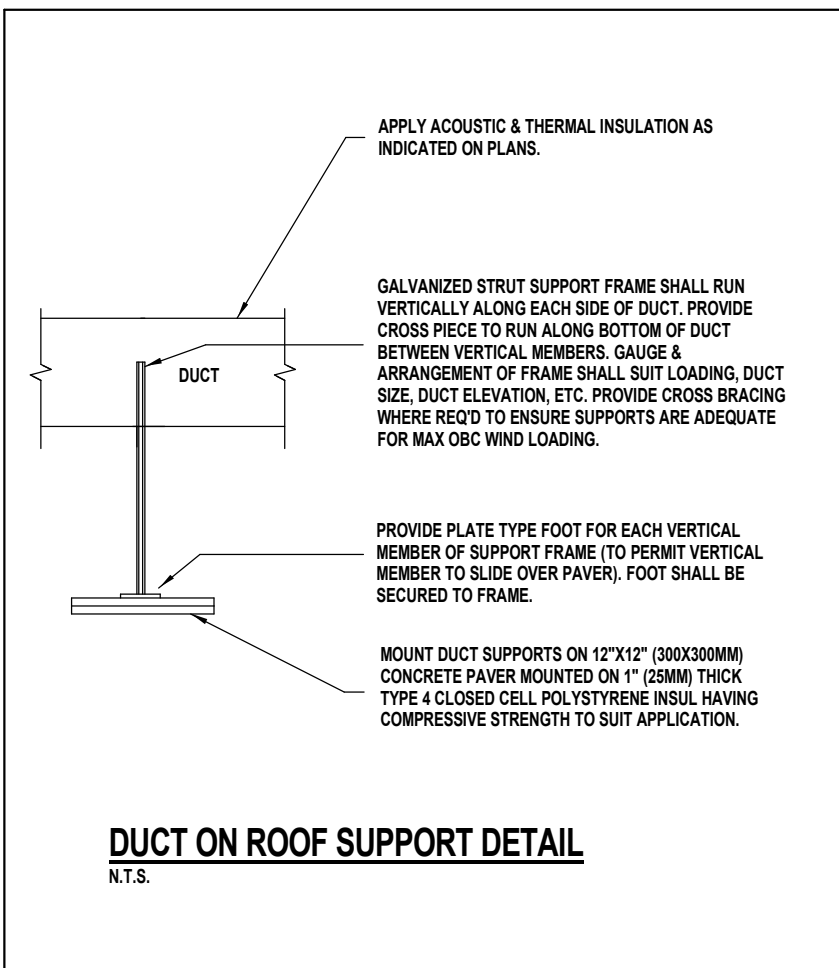
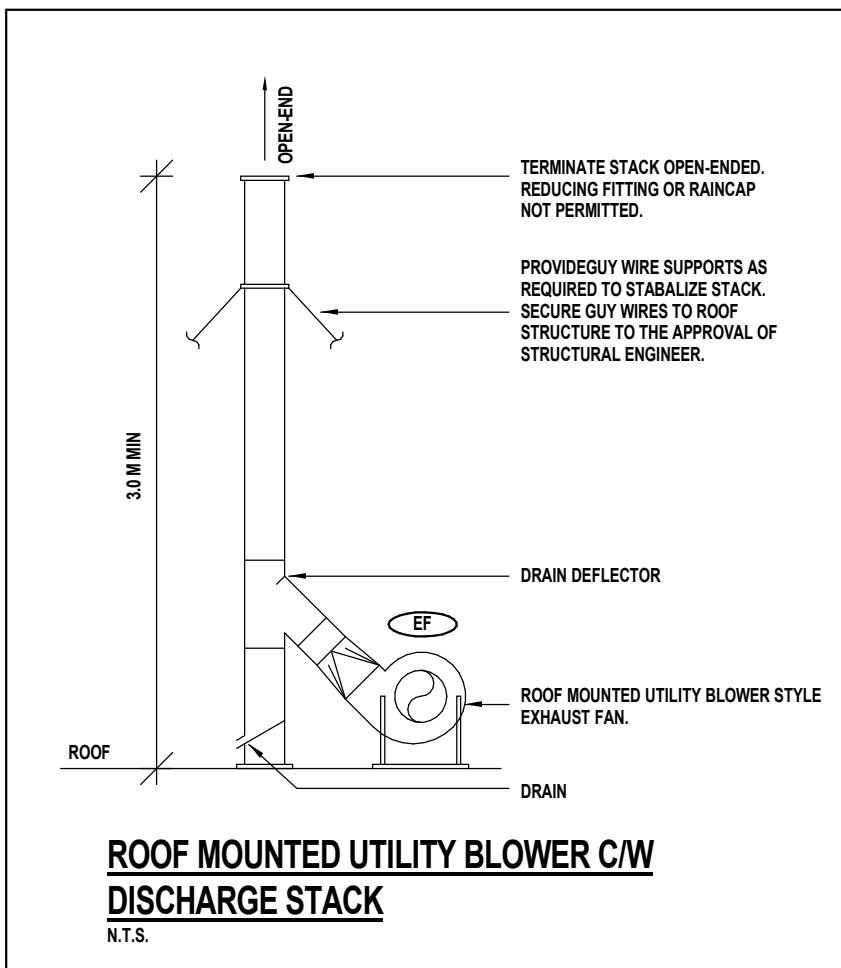
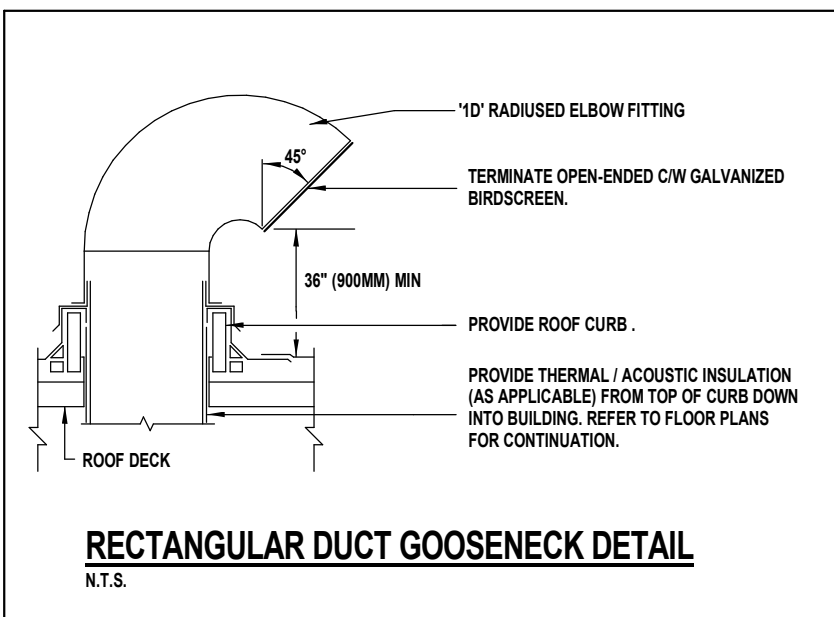
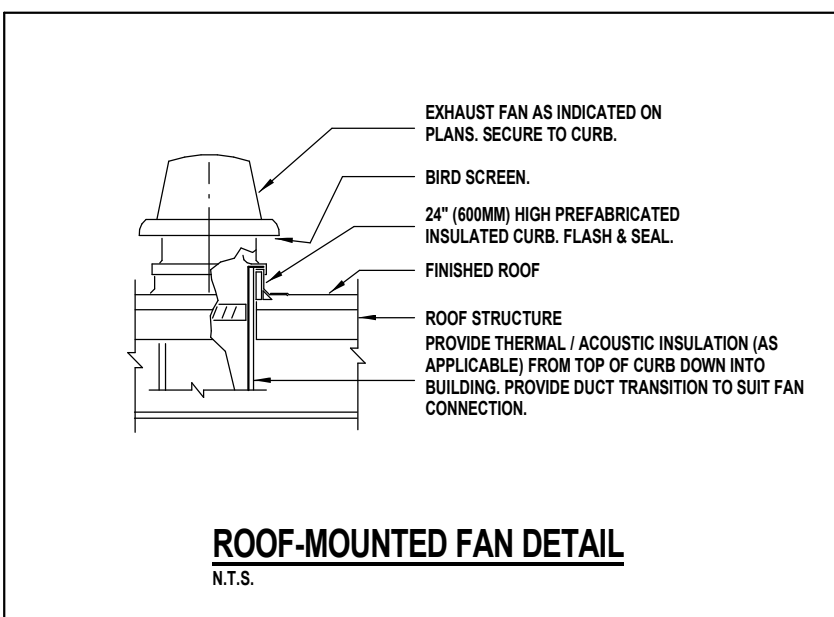
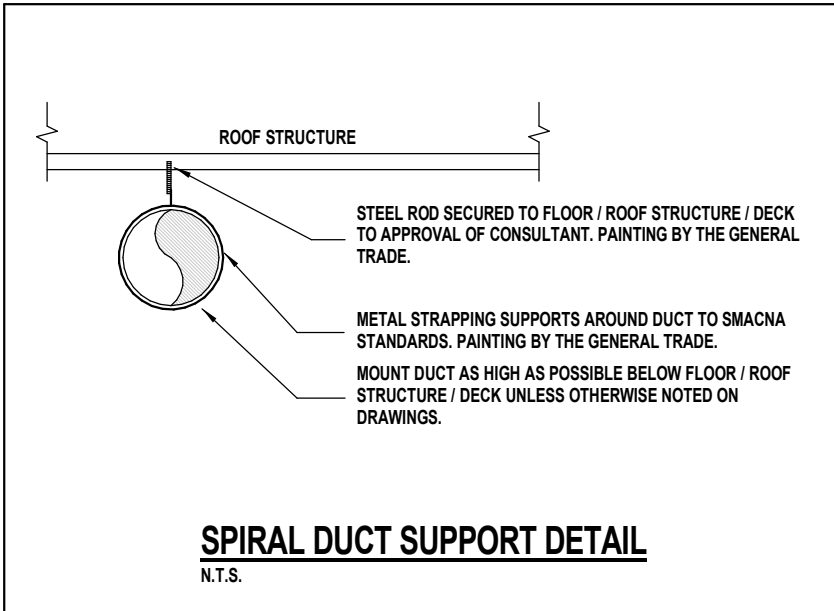
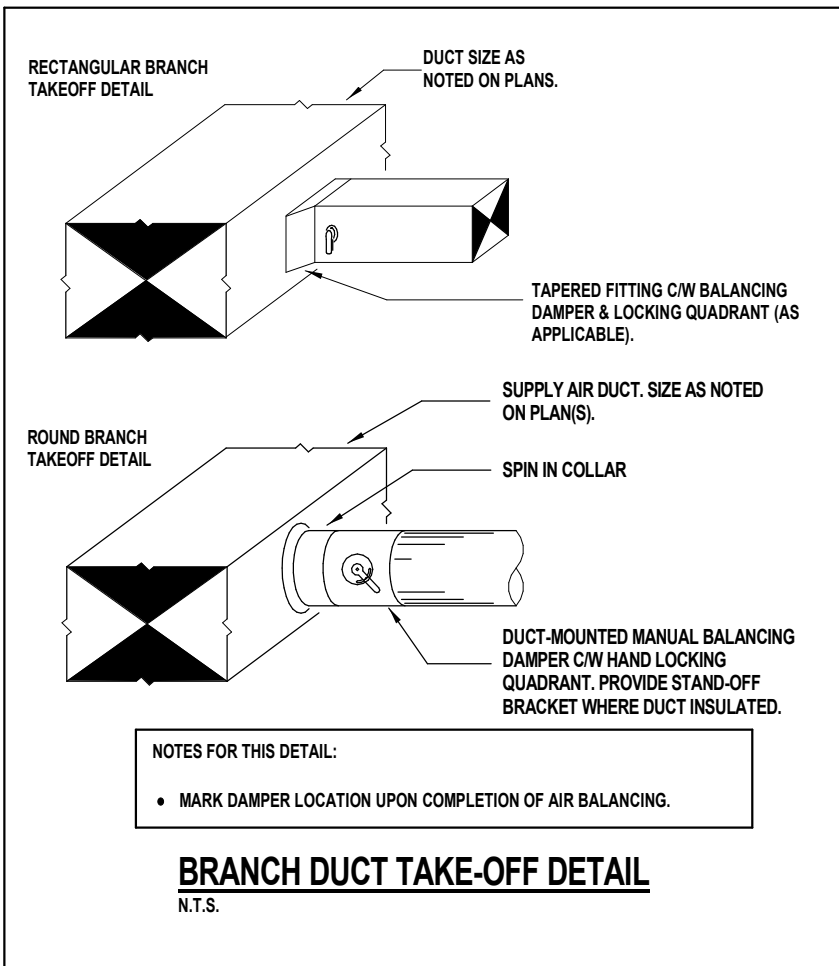
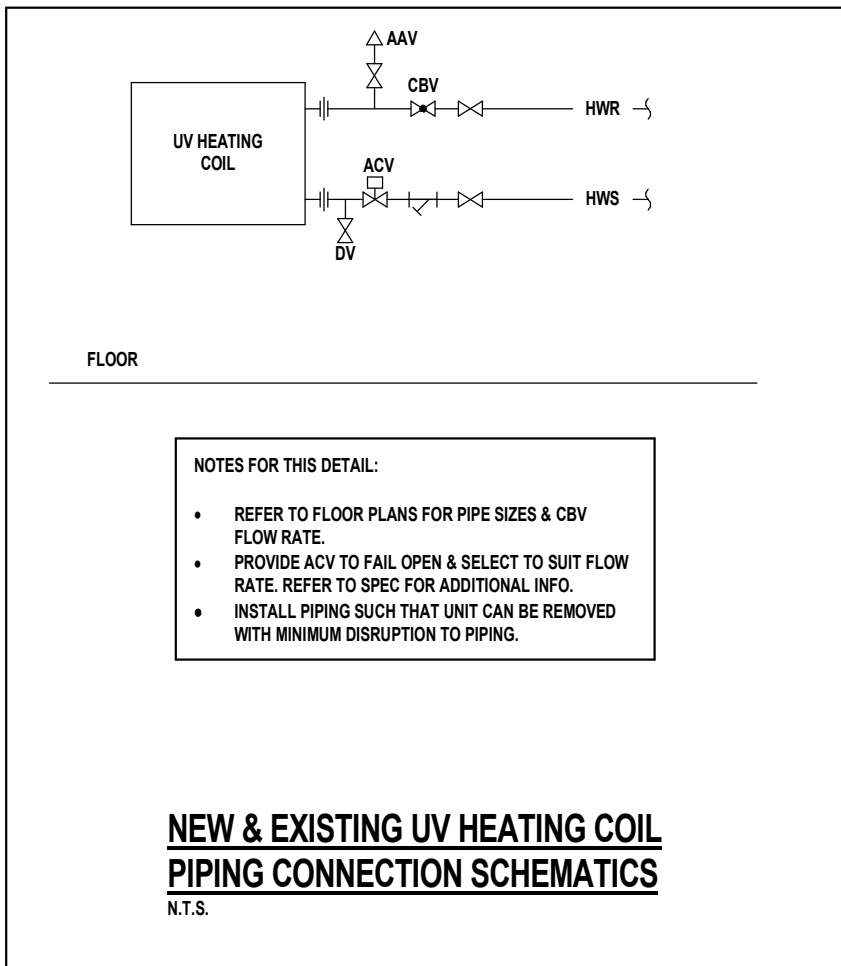
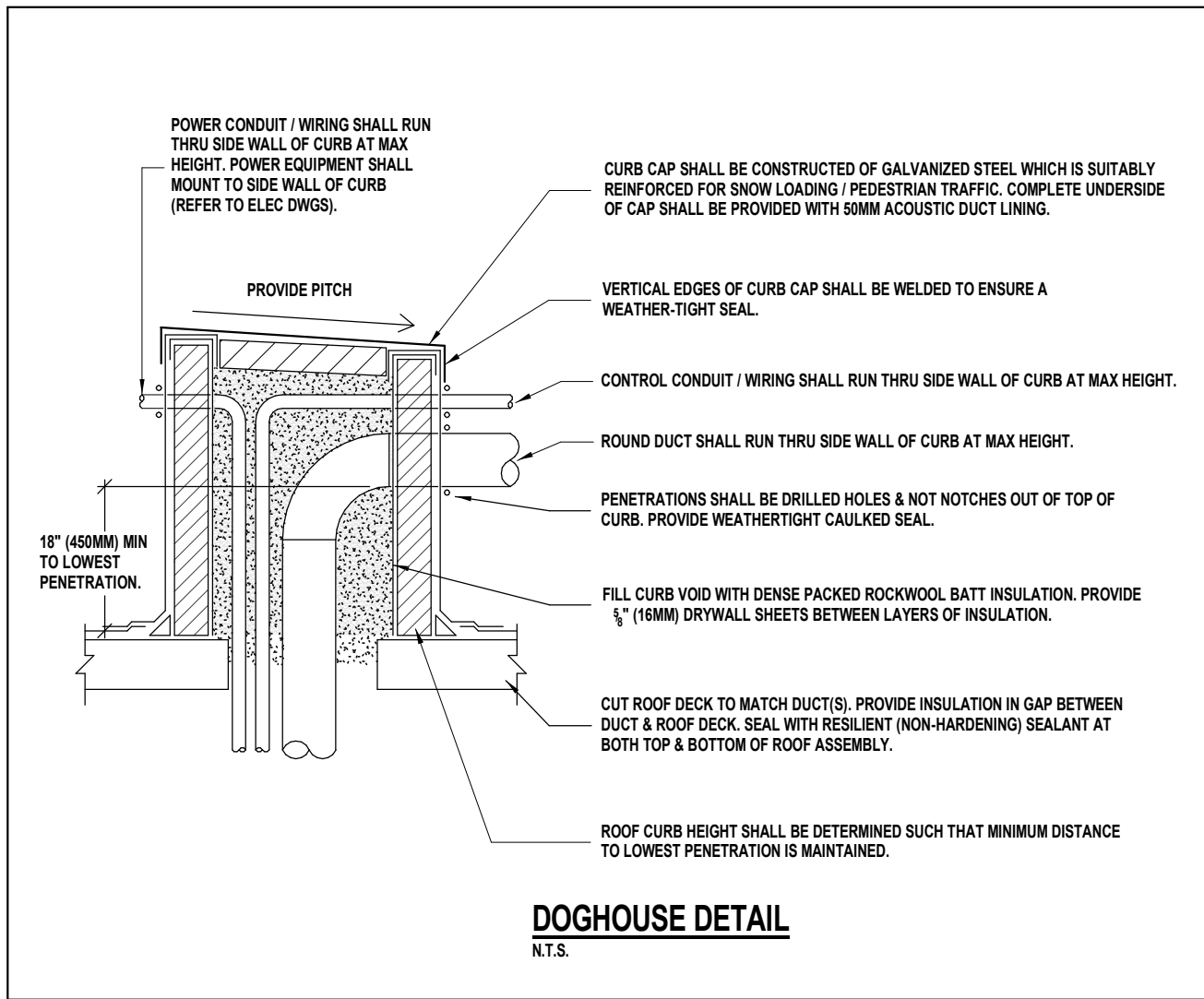
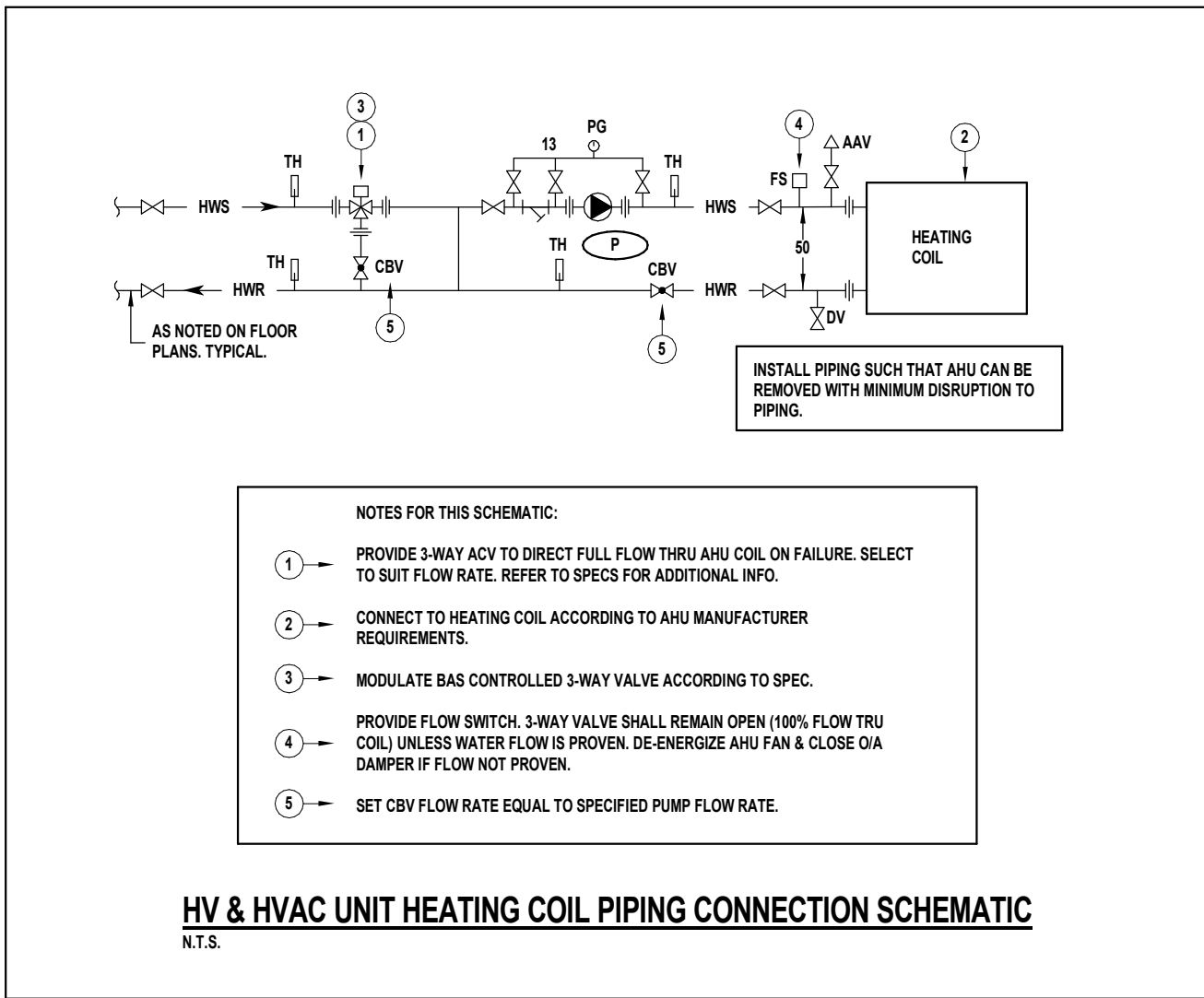
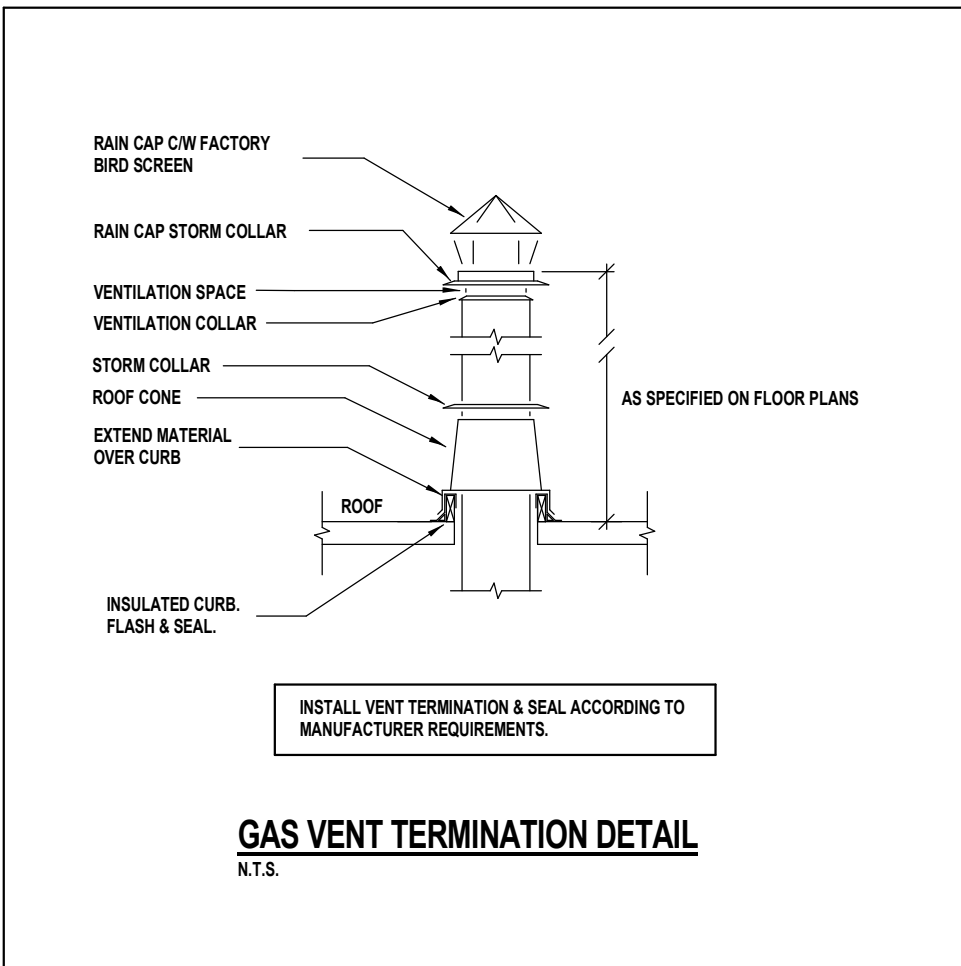
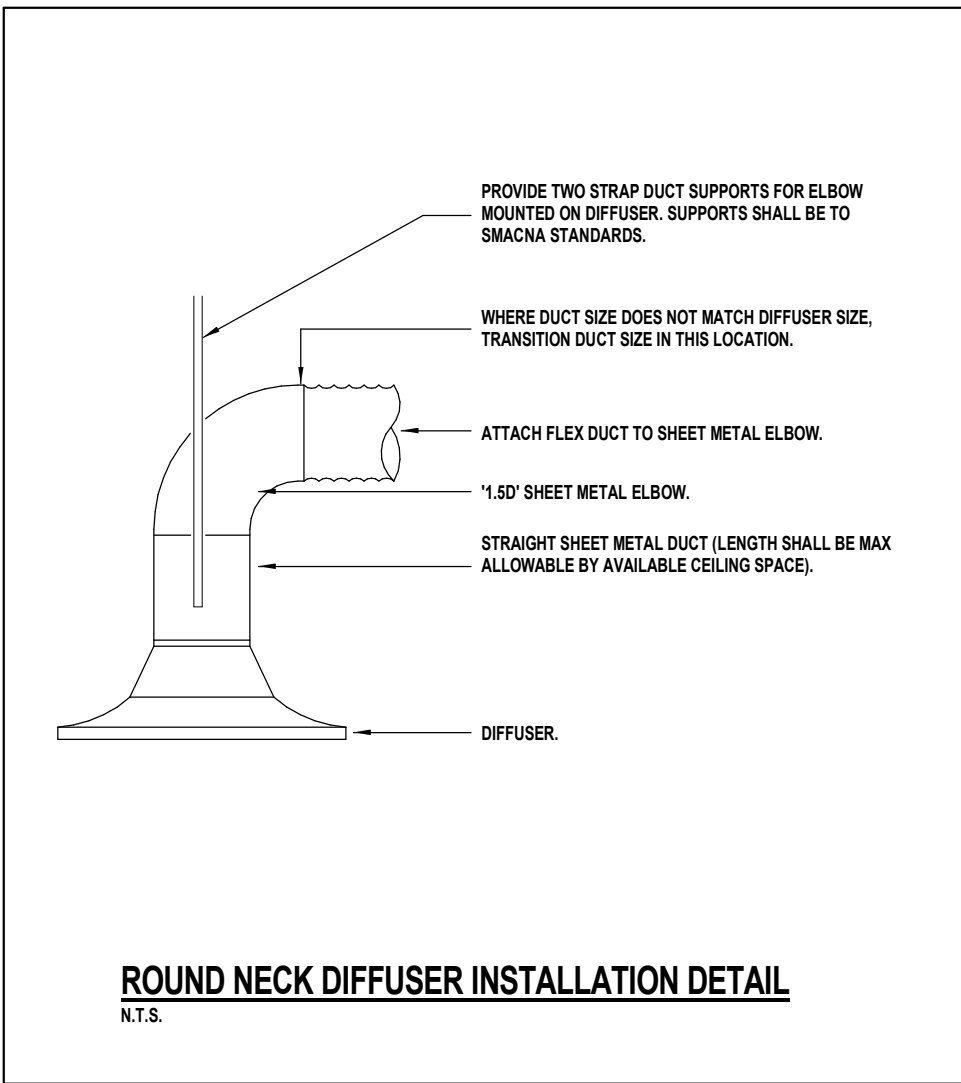
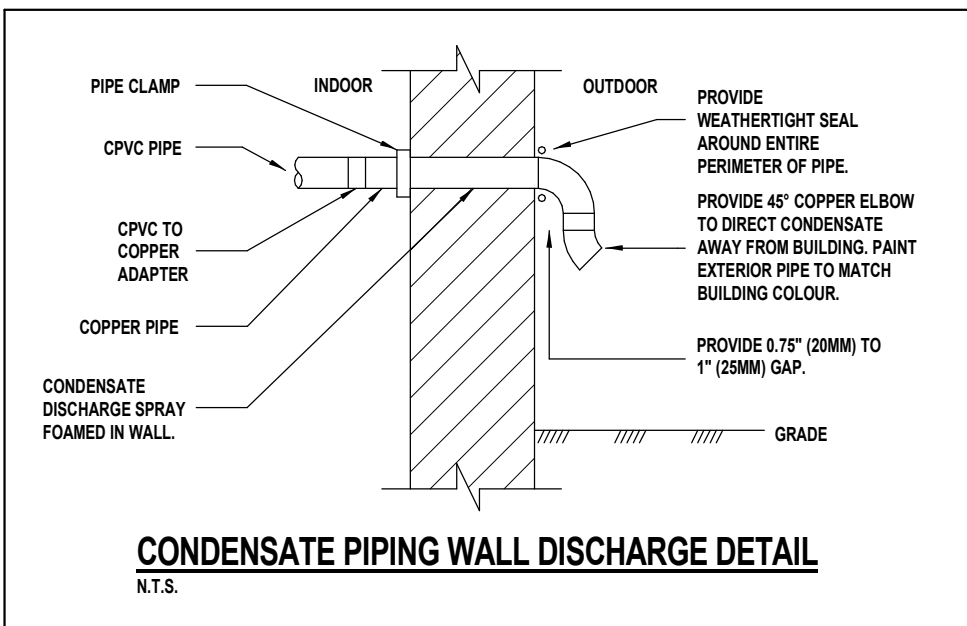
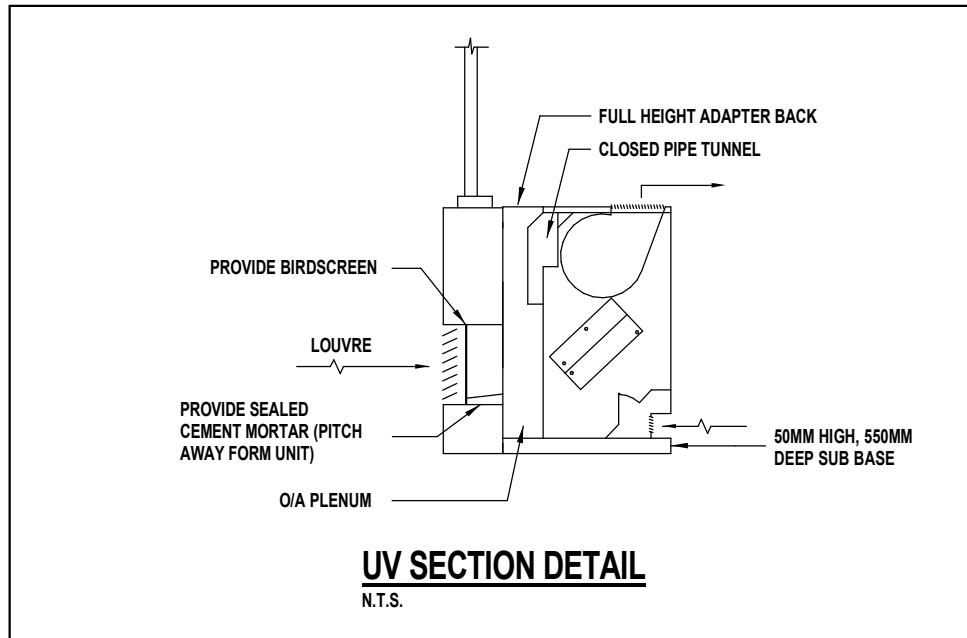
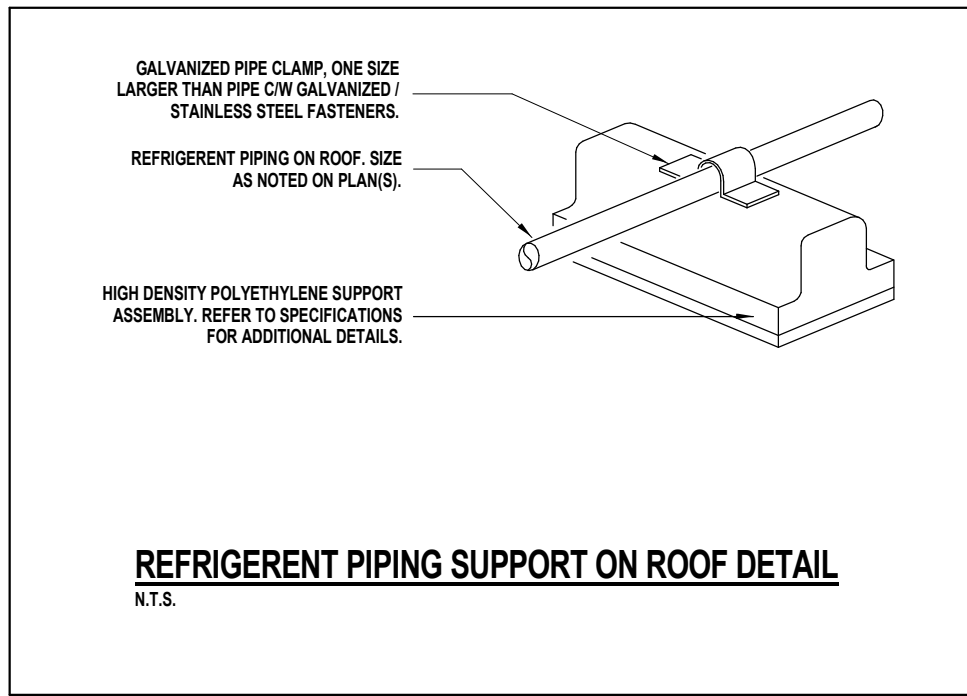


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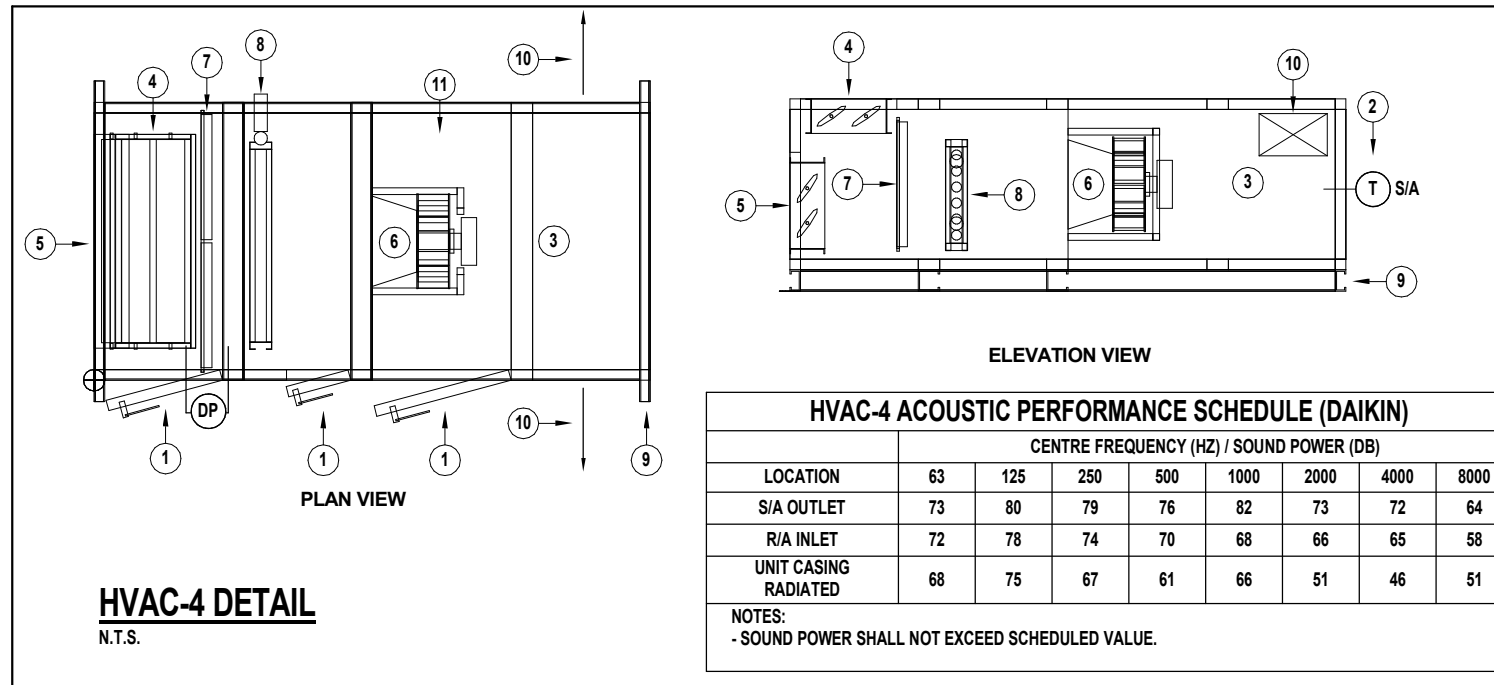
M1.2



LEGEND		LEGEND	
1	LOW LEAKAGE & INSULATED OUTDOOR AIR DAMPER C/W MOULATING SPRING RETURN ACTUATOR (FAIL CLOSED)	8	VRF REHEAT COIL & DX COOLING COIL
2	LOW LEAKAGE RETURN AIR DAMPER C/W MOULATING SPRING RETURN ACTUATOR (FAIL OPEN)	9	DAIKIN AHU INTEGRATION CONTROLLER
3	MIXING BOX	10	DIRECT DRIVE PLENUM SUPPLY FAN C/W EC DRIVE
4	MERV 13 FILTER	11	DROP DOWN DOORS ON RAIL SYSTEM
5	HWH HEATING COIL	12	SUPPLY DUCT CONNECTION
		13	ACCESS PANEL

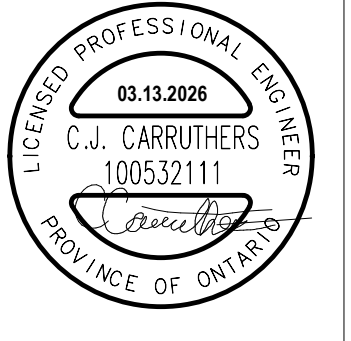
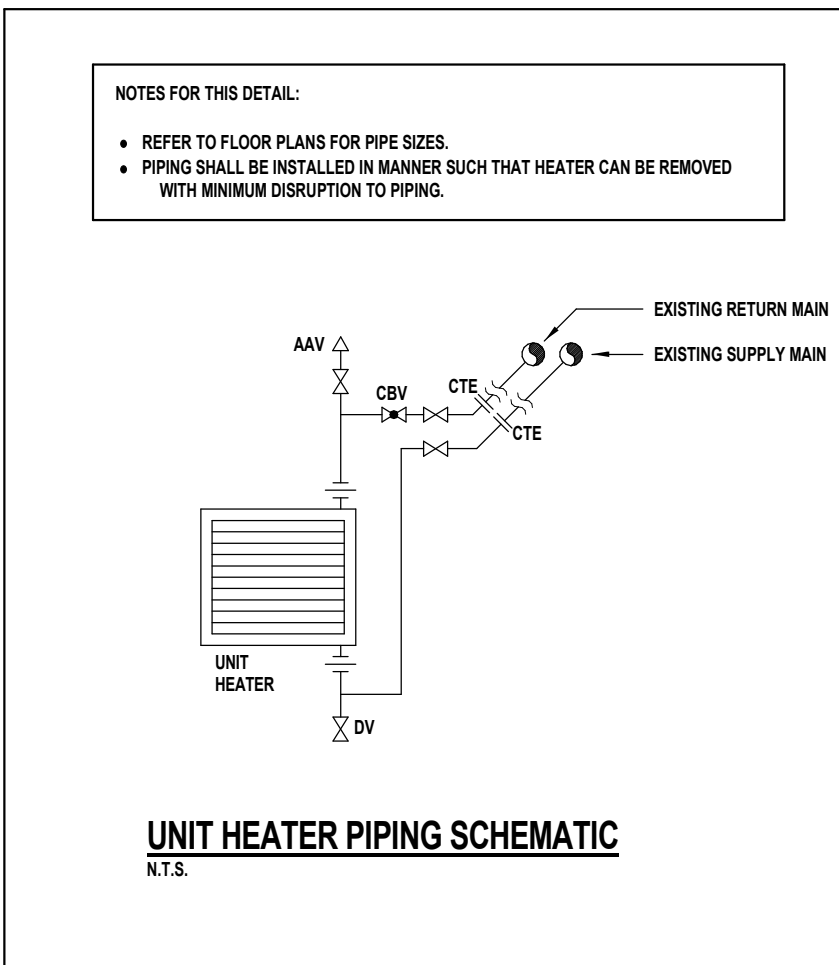
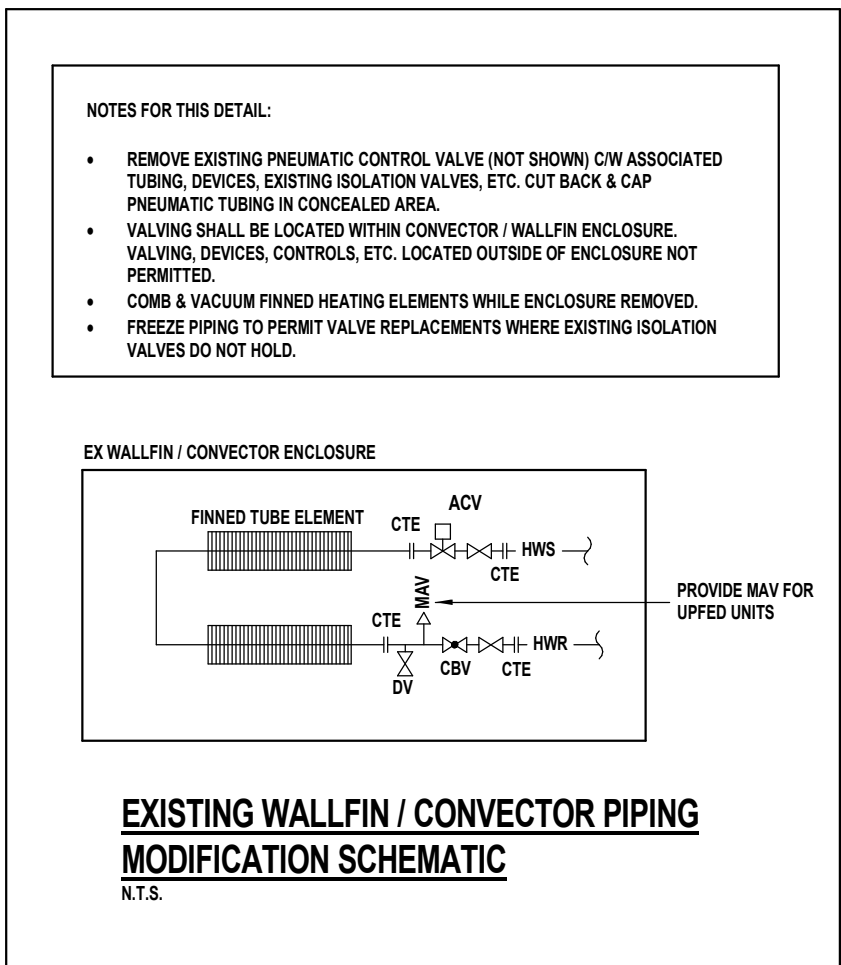
HVAC-7 ACOUSTIC PERFORMANCE SCHEDULE (OXYGEN8)	
LOCATION	CENTRE FREQUENCY (HZ) / SOUND POWER (DB)
S/A FAN	63 125 250 500 1000 2000 4000 8000
UNIT CASING RADIATED	73 71 78 73 75 72 65 62
UNIT CASING RADIATED	65 63 66 58 55 59 30 24
NOTES: - SOUND POWER SHALL NOT EXCEED SCHEDULED VALUE.	

HVAC-8 ACOUSTIC PERFORMANCE SCHEDULE (OXYGEN8)	
LOCATION	CENTRE FREQUENCY (HZ) / SOUND POWER (DB)
S/A FAN	63 125 250 500 1000 2000 4000 8000
S/A FAN	73 72 78 71 72 69 61 58
UNIT CASING RADIATED	65 65 65 56 53 56 27 21
NOTES: - SOUND POWER SHALL NOT EXCEED SCHEDULED VALUE.	



LEGEND		LEGEND	
1	FLUSH MOUNTED ACCESS DOORS	7	MERV 13 FILTER C/W FILTER STATUS DIFFERENTIAL PRESSURE SENSOR
2	SUPPLY AIR TEMPERATURE SENSOR	8	HEATING COIL C/W FREEZE STAT
3	ACOUSTIC PLENUM C/W SOUND Baffle	9	FORMED CHANNEL BASE
4	LOW LEAKAGE & INSULATED OUTDOOR AIR DAMPER C/W MOULATING SPRING RETURN ACTUATOR (FAIL CLOSED)	10	SUPPLY DUCT CONNECTIONS, ADJUST LOCATION TO SUIT FLOOR PLAN & DUCT INSTALLATION HEIGHT.
5	LOW LEAKAGE RETURN AIR DAMPER C/W MOULATING SPRING RETURN ACTUATOR (FAIL OPEN)	11	SUPPLY FAN SECTION C/W SOUND Baffle.
6	DIRECT DRIVE PLENUM SUPPLY FAN C/W EC DRIVE.		

HVAC-4 ACOUSTIC PERFORMANCE SCHEDULE (DAIKIN)	
LOCATION	CENTRE FREQUENCY (HZ) / SOUND POWER (DB)
S/A OUTLET	63 125 250 500 1000 2000 4000 8000
S/A INLET	73 80 79 76 82 73 72 64
UNIT CASING RADIATED	72 78 74 70 68 66 65 58
UNIT CASING RADIATED	68 75 67 61 66 51 46 51
NOTES: - SOUND POWER SHALL NOT EXCEED SCHEDULED VALUE.	



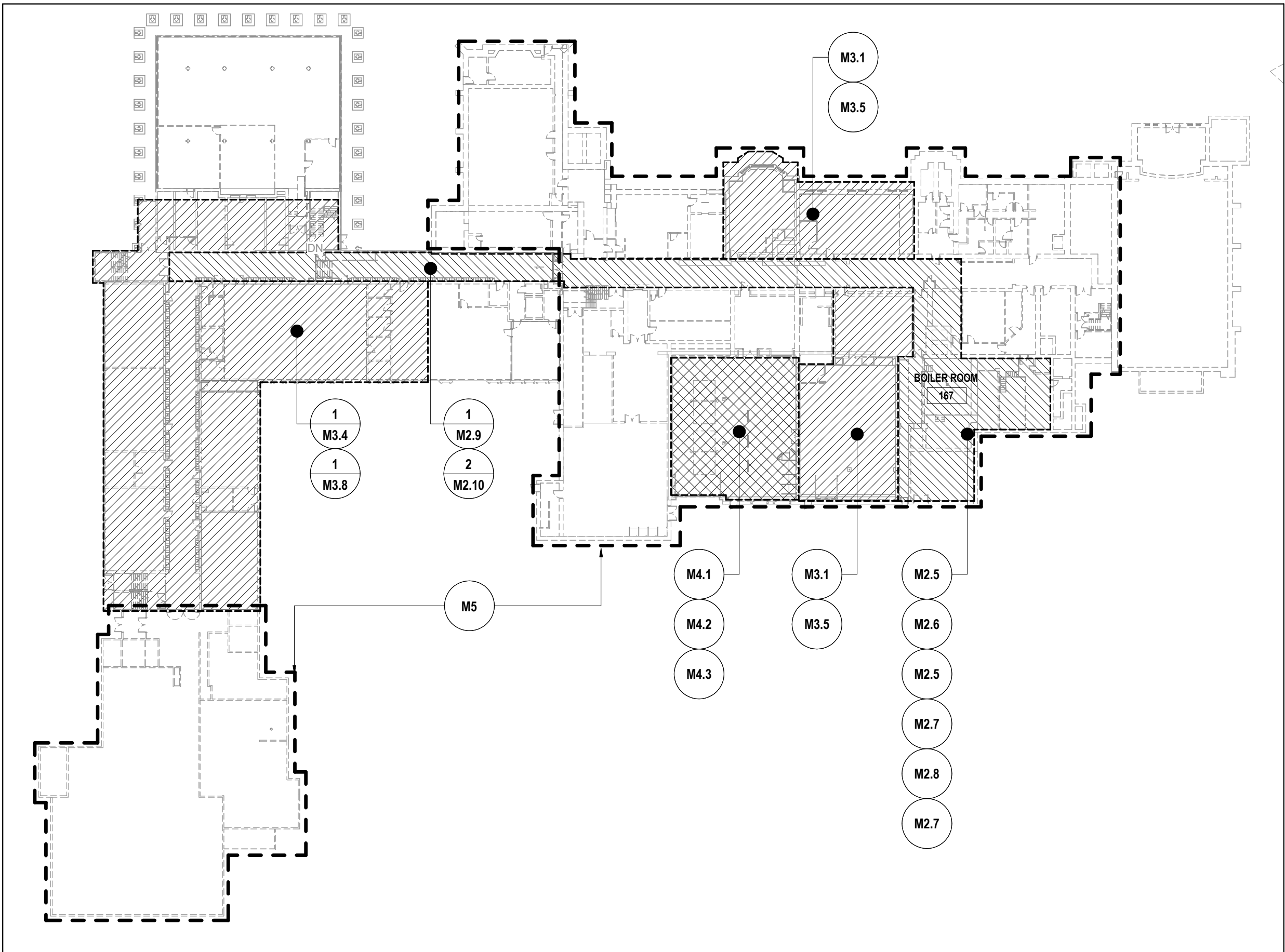
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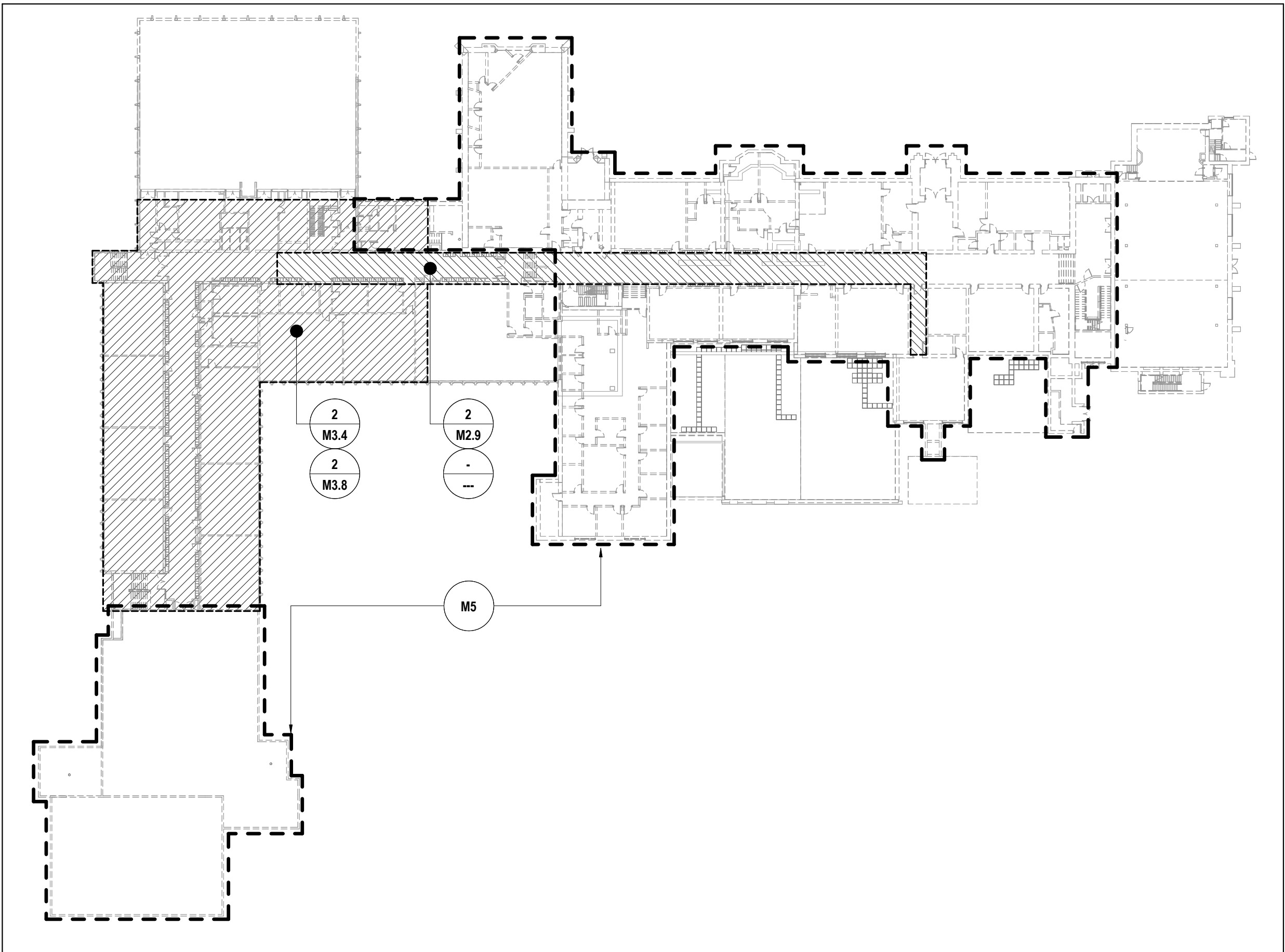


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BOILER REPLACEMENT AND HAV UPGRADES - PHASE 2
MECHANICAL SCHEDULES

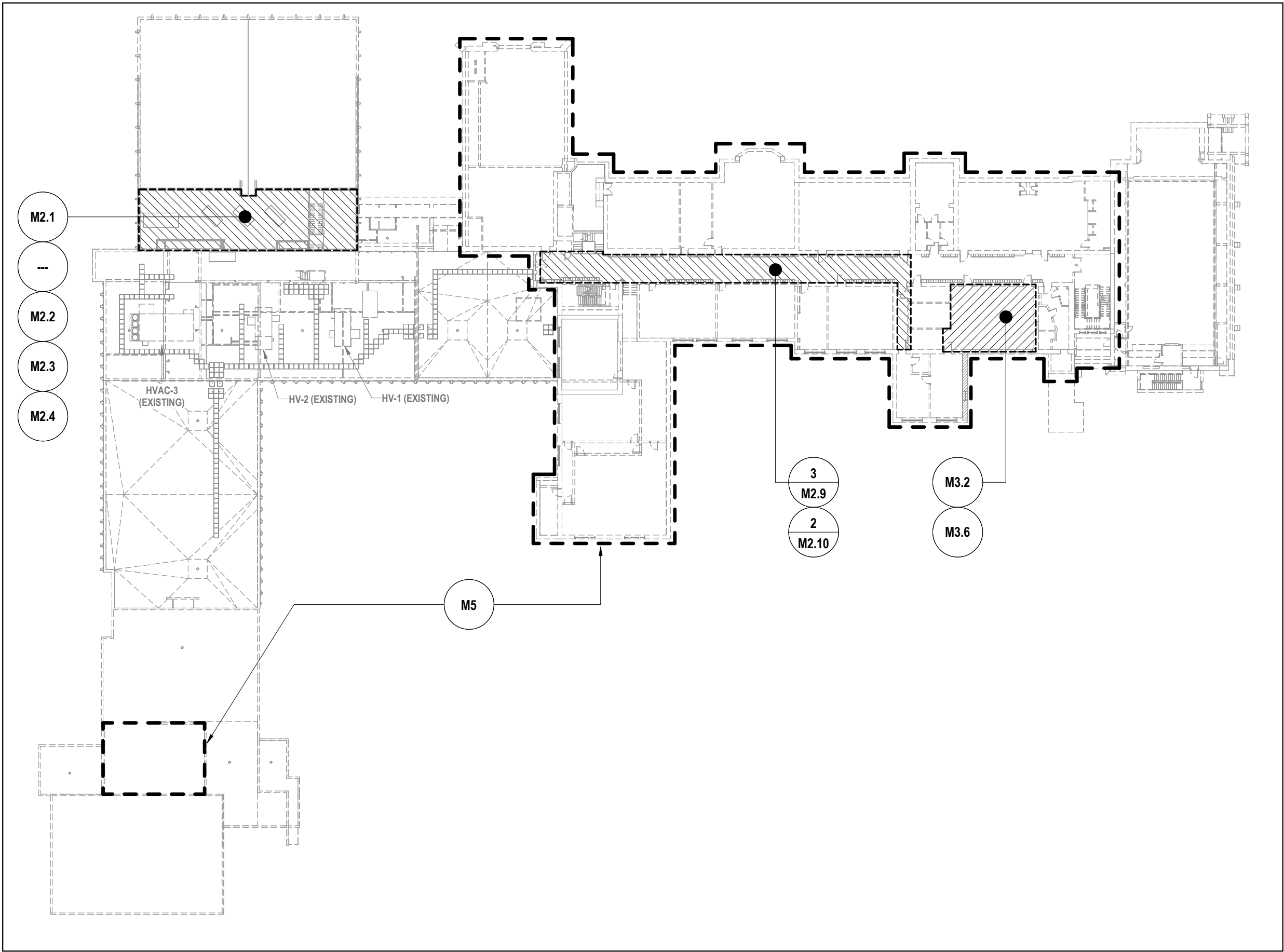
M1.3



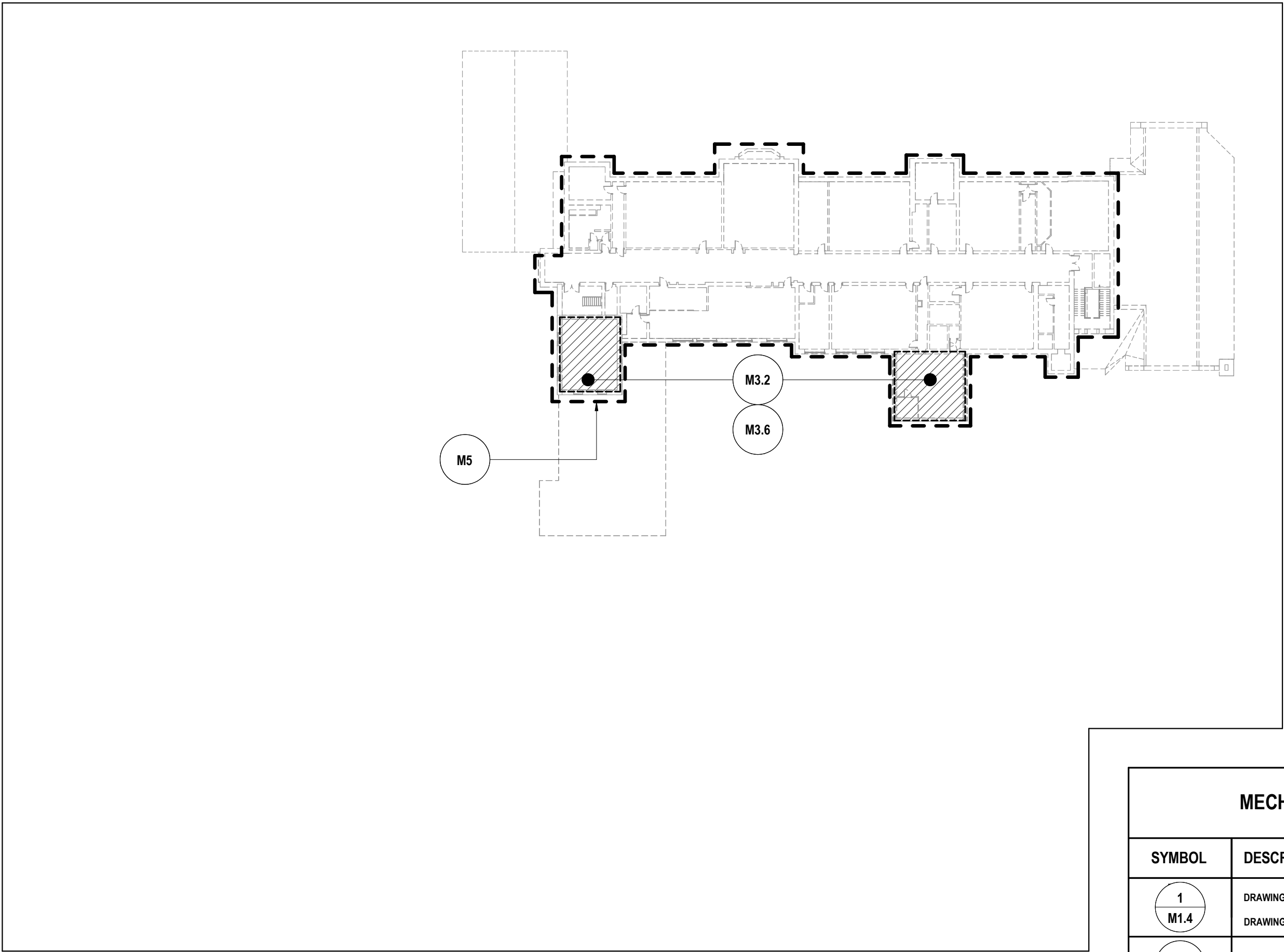
1 OVERALL FIRST FLOOR PLAN
M1.4 SCALE: 1:500



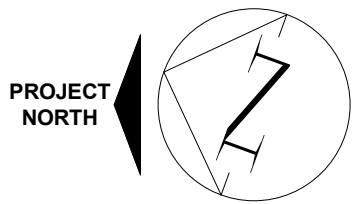
2 OVERALL SECOND FLOOR PLAN
M1.4 SCALE: 1:500



3 OVERALL THIRD FLOOR PLAN
M1.4 SCALE: 1:500



4 OVERALL FOURTH FLOOR PLAN
M1.4 SCALE: 1:500



MECHANICAL LEGEND	
SYMBOL	DESCRIPTION
1	DRAWING VIEW REFERENCE
M1.4	DRAWING SHEET REFERENCE
M1.4	DRAWING SHEET REFERENCE
—	SCOPE BORDER
▨	PROJECT A "STEAM TO HOT WATER UPGRADES" DRAWING SCOPE
▩	PROJECT B "CLASSROOM VENTILATION UPGRADES" DRAWING SCOPE
▧	PROJECT C "WELDING BOOTH & VENTILATION UPGRADES" DRAWING SCOPE
●●●●	PROJECT D "HVAC CONTROLS AND BUILDING AUTOMATION UPGRADES" DRAWING SCOPE



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2026-03-17 ISSUE FOR PERMIT & BID 267860-REF C.J.C.



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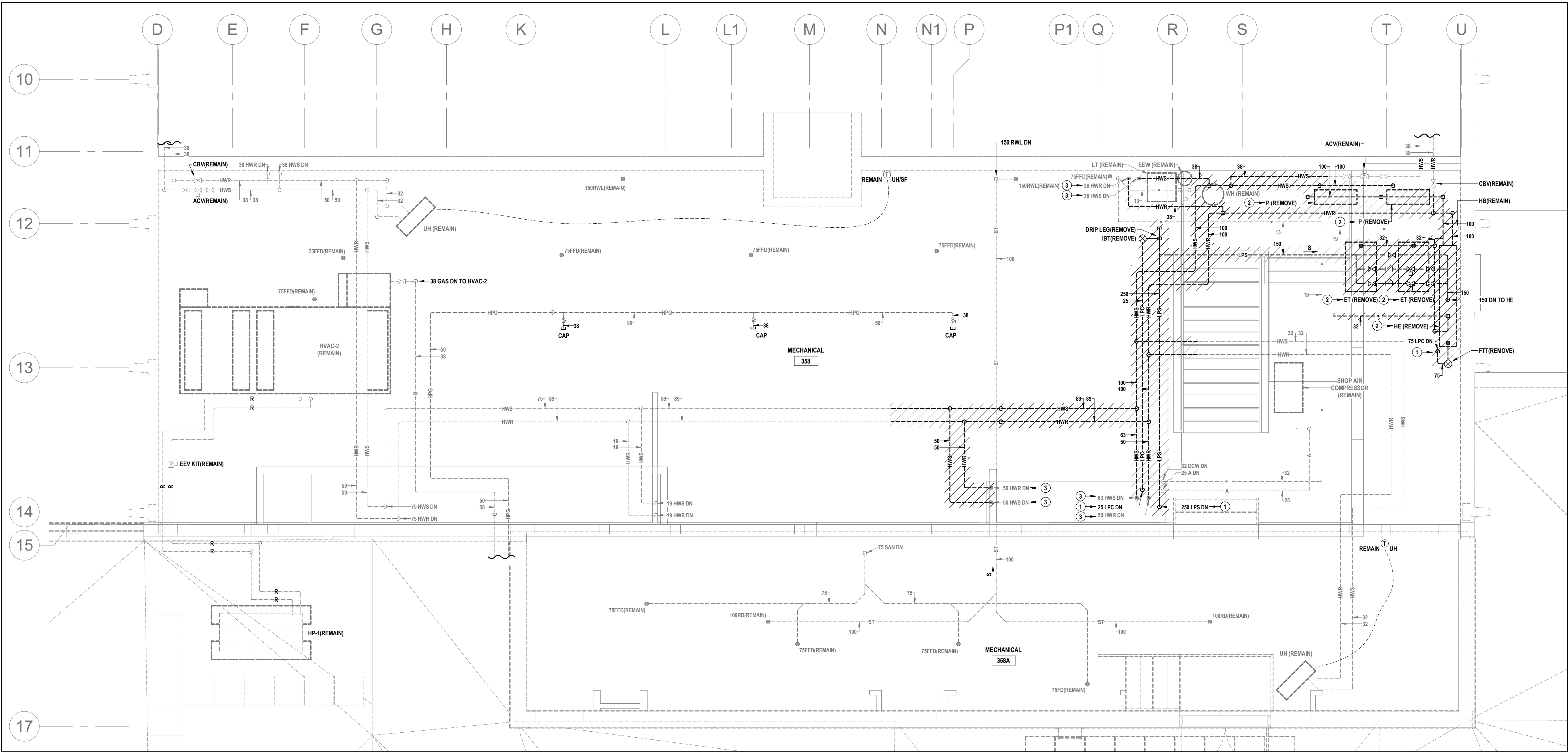
Project No.: 23053

Drawn By: M.C./A.G.

Checked By: C.J.C.

OVERALL PLANS - PROJECT SUMMARY

M1.4



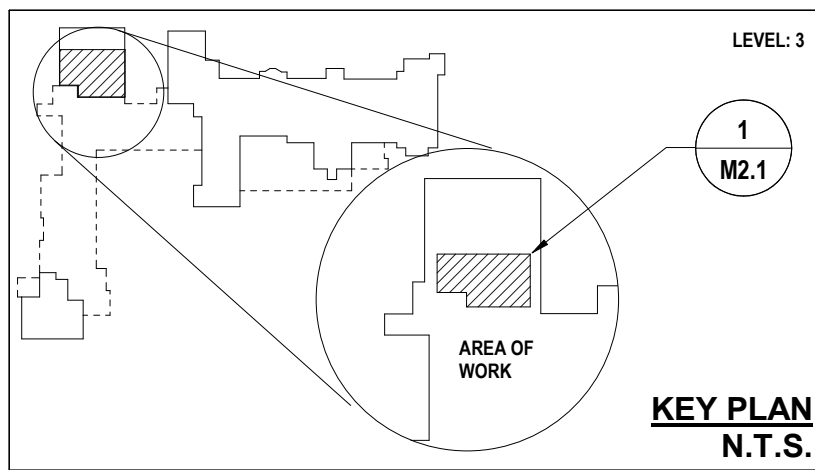
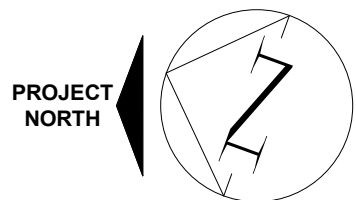
1 MECHANICAL ROOM 358 PLUMBING, GAS, STEAM & HYDRONIC PIPING DEMOLITION PLAN
M2.1 SCALE: 1:50

GENERAL NOTES FOR THIS SHEET

- THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 01 35 43, "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.

NOTES FOR THIS SHEET

- REFER TO SHEET M2.9 FOR CONTINUATION.
- REMOVE EQUIPMENT C/W PIPING CONNECTIONS, SUPPORTS, CONTROLS, ELECTRICAL POWER SUPPLY ETC. (AS APPLICABLE), PATCH / PAINT WALL / FLOOR TO MATCH ADJACENT FINISHES WHERE AFFECTED.
- REMOVE PIPING TO RISER. RISER BELOW FLOOR NOT REQUIRED TO BE REMOVED.



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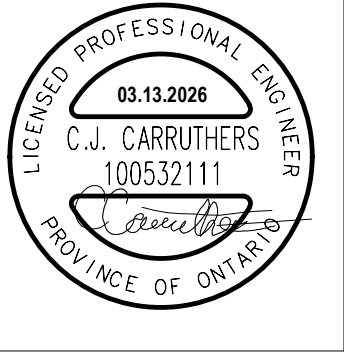
PROJECT A - MECHANICAL ROOM 358 PLUMBING,
GAS, STEAM & HYDRONIC PIPING DEMOLITION
PLAN

Project No.: 23053

Drawn By: J.S.

Checked By: C.J.C.

M2.1



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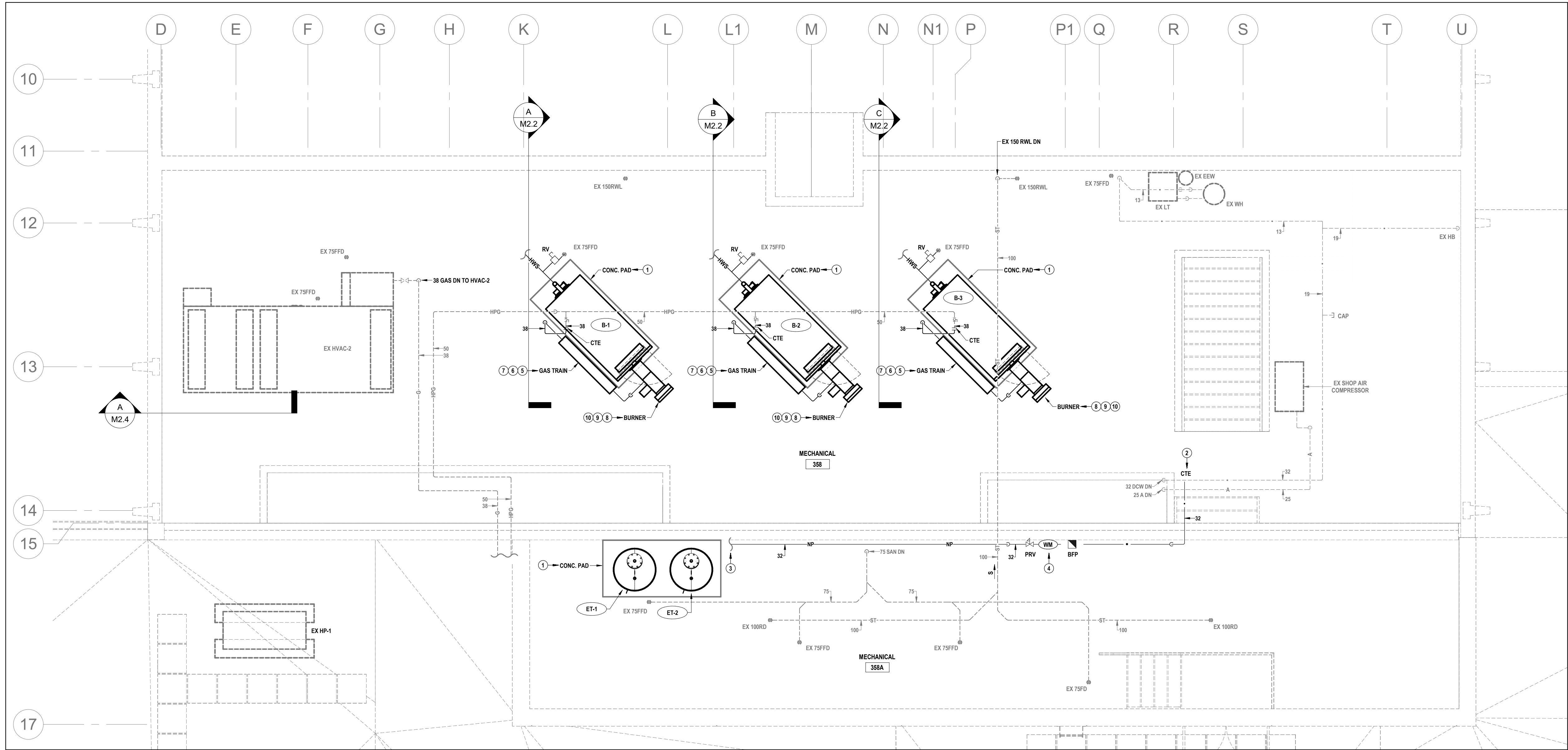
ISSUE FOR PERMIT & BID 267860-REF
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BOILER REPLACEMENT AND HAV UPGRADES - PHASE 2
PROJECT A - MECHANICAL ROOM 358 PLUMBING & GAS PIPING PLAN

Checked By: J.S.
Drawn By: J.S.
Project No.: 23053
C.J.C.

M2.2

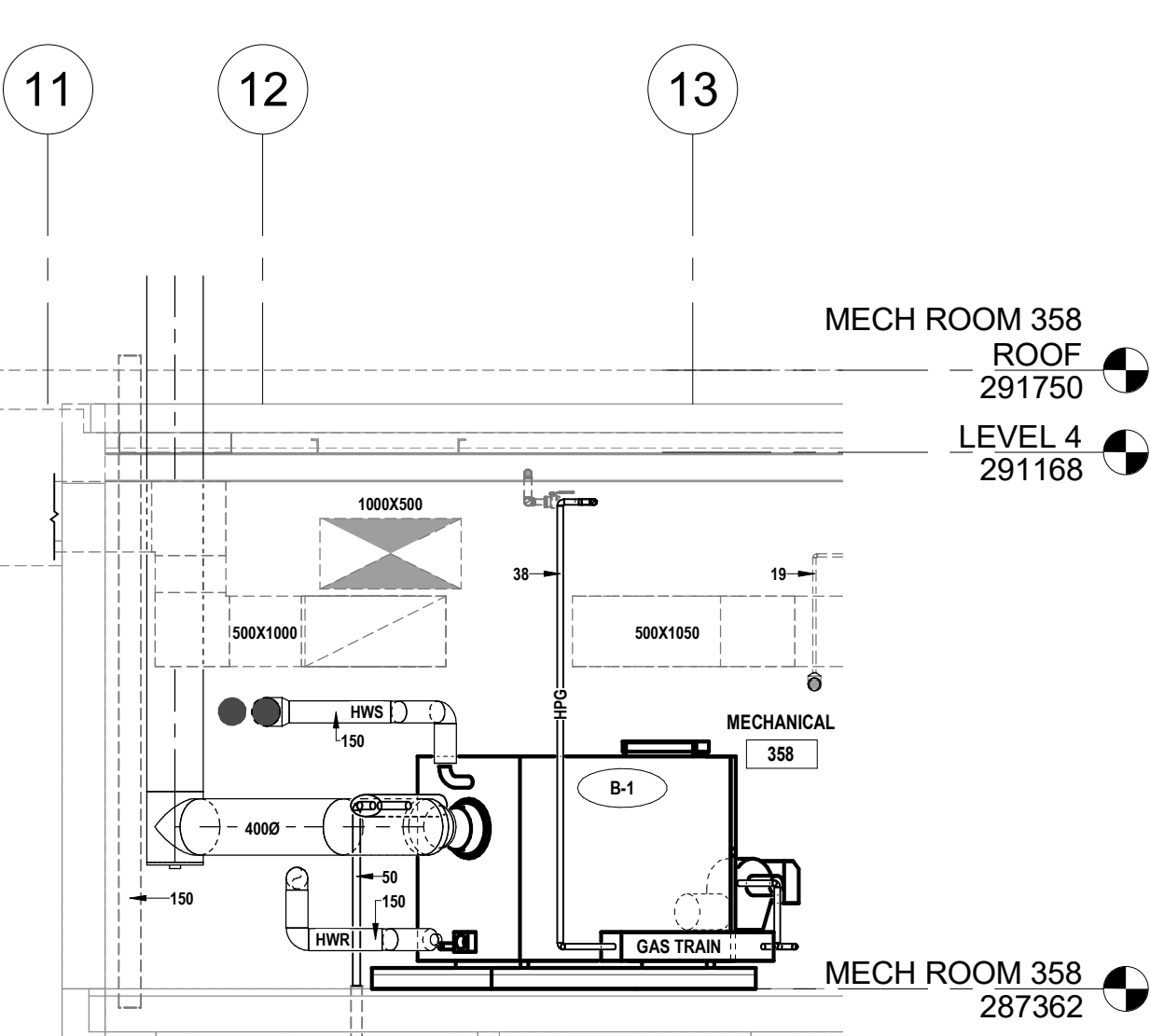


1 MECHANICAL ROOM 358 PLUMBING & GAS PIPING PLAN
M2.2 SCALE: 1:50

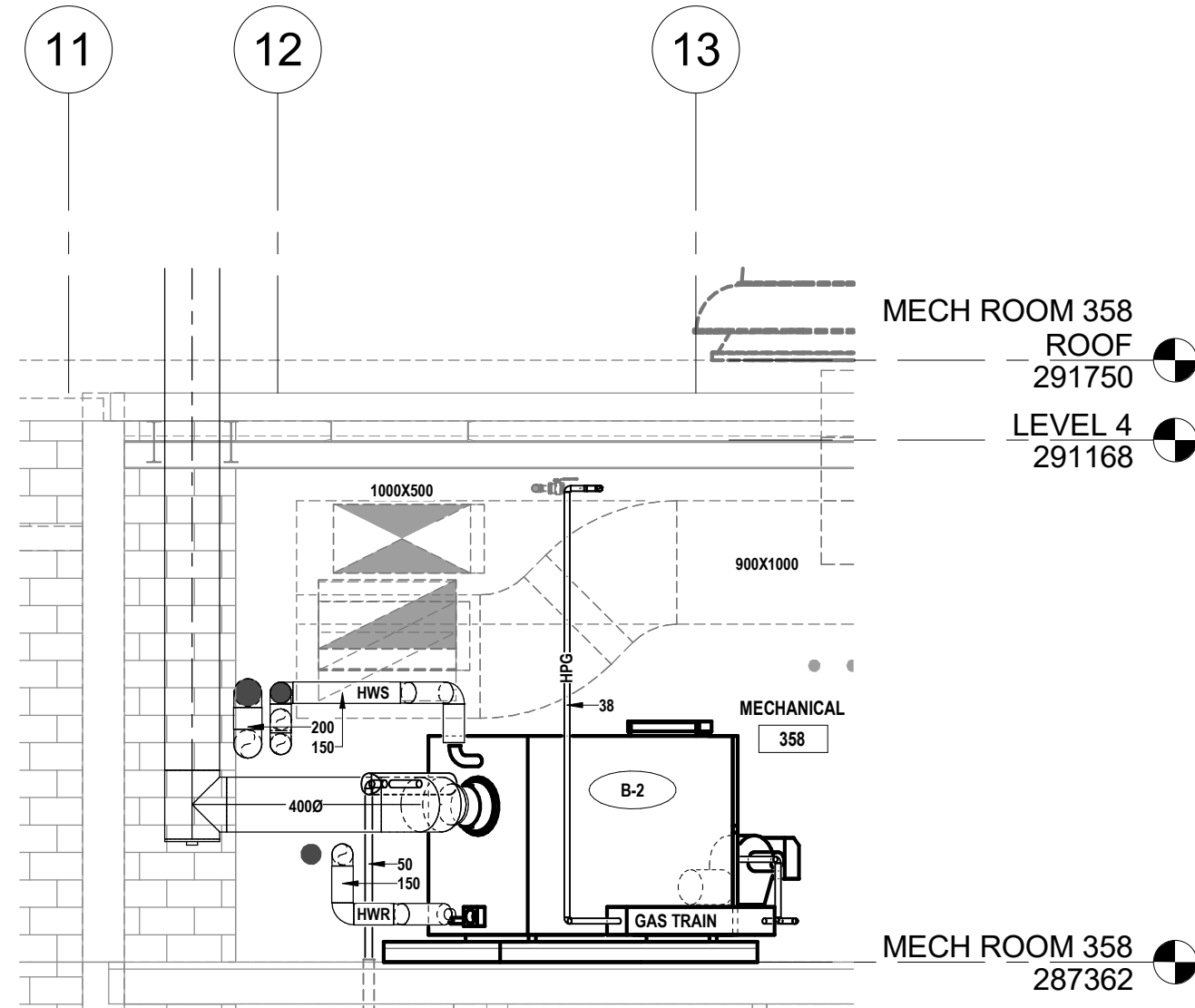
GENERAL NOTES FOR THIS SHEET

- THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 01 35 43, "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.

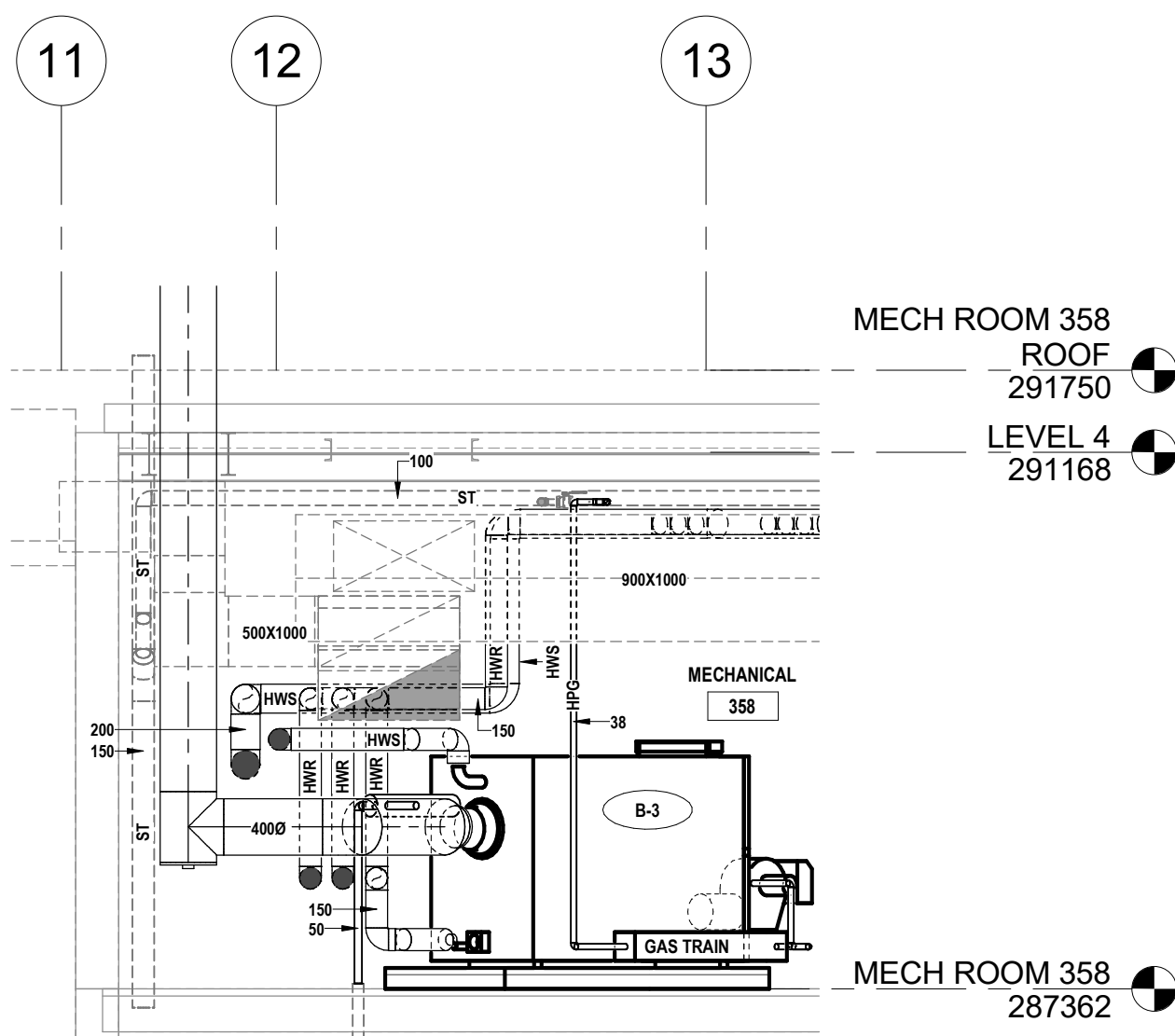
- NOTES FOR THIS SHEET**
- PROVIDE 150MM CONCRETE HOUSEKEEPING PAD TO SUPPORT EQUIPMENT ABOVE FINISHED FLOOR. ADJUST PAD DIMENSION TO SUIT EQUIPMENT.
 - CONFIRM EX DOMESTIC COLD WATER PIPING IS SIZE OF NEW PIPING OR LARGER. OTHERWISE, ADVISE CONSULTANT.
 - REFER TO DOMESTIC WATER / HEATING WATER PIPING PLAN (AS APPLICABLE) FOR CONTINUATION.
 - PROVIDE MAKE-UP WATER STATION C/W BFP, WM, PRV & BYPASS & INSTALL IN THIS APPROXIMATE LOCATION. REFER TO SCHEMATIC FOR ADDITIONAL INFO.
 - PROVIDE GAS TRAIN SUITABLE FOR 5 PSIG (34.3KPA) NATURAL GAS C/W SPECIFIED ACCESSORIES. PROVIDE 120V & LOW VOLTAGE WIRING TO GAS TRAIN DEVICES ACCORDING TO MANUFACTURER REQUIREMENTS.
 - PROVIDE RELIEF PIPING (NOT SHOWN) FOR SUPPLY & PILOT REGULATORS. VENT RELIEF TO ATMOSPHERE THRU ROOF ACCORDING TO GAS CODE REQUIREMENTS.
 - PROVIDE PILOT LINE C/W SPECIFIED ACCESSORIES (NOT SHOWN) & INSTALL ACCORDING TO MANUFACTURER REQUIREMENTS.
 - INSTALL BURNER C/W SPECIFIED ACCESSORIES ACCORDING TO MANUFACTURER REQUIREMENTS.
 - PROVIDE 120V & LOW VOLTAGE WIRING TO BOILER CONTROL PANEL & GAS TRAIN ACCORDING TO MANUFACTURER WIRING DIAGRAM.
 - PROVIDE BURNER SUPPORT C/W CASTER WHEEL & CRADLE.



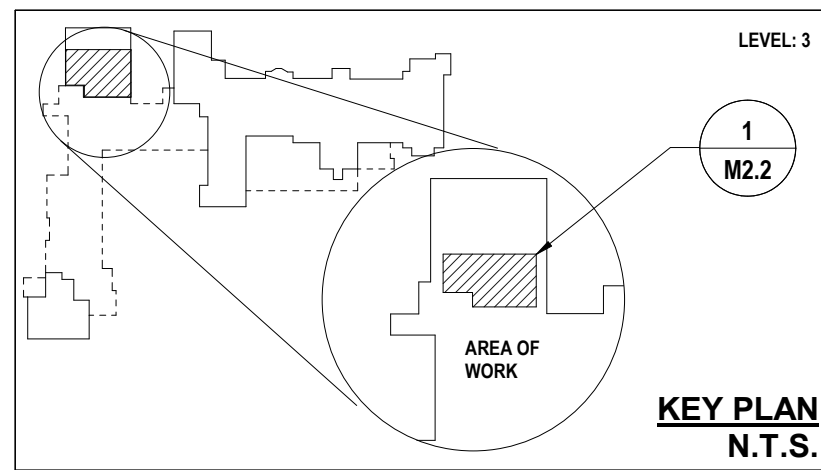
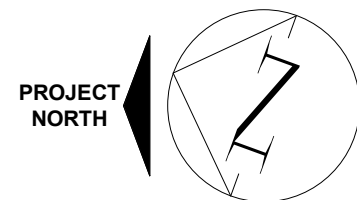
SECTION A: BOILER B-1 CONNECTIONS
SCALE: 1:50

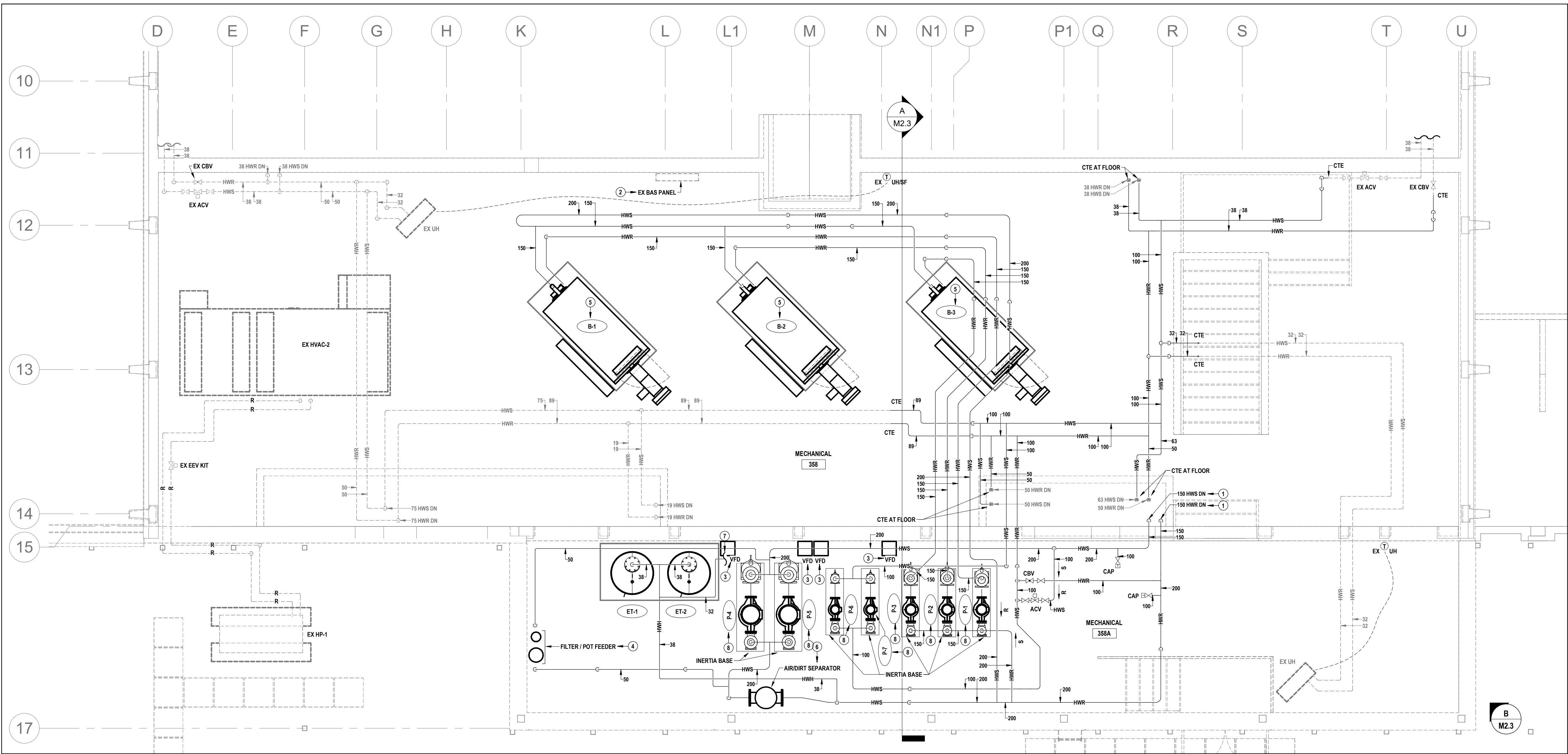


SECTION B: BOILER B-2 CONNECTIONS
SCALE: 1:50



SECTION C: BOILER B-3 CONNECTIONS
SCALE: 1:50





1 MECHANICAL ROOM 358 HYDRONIC PIPING PLAN
M2.3 SCALE: 1:50

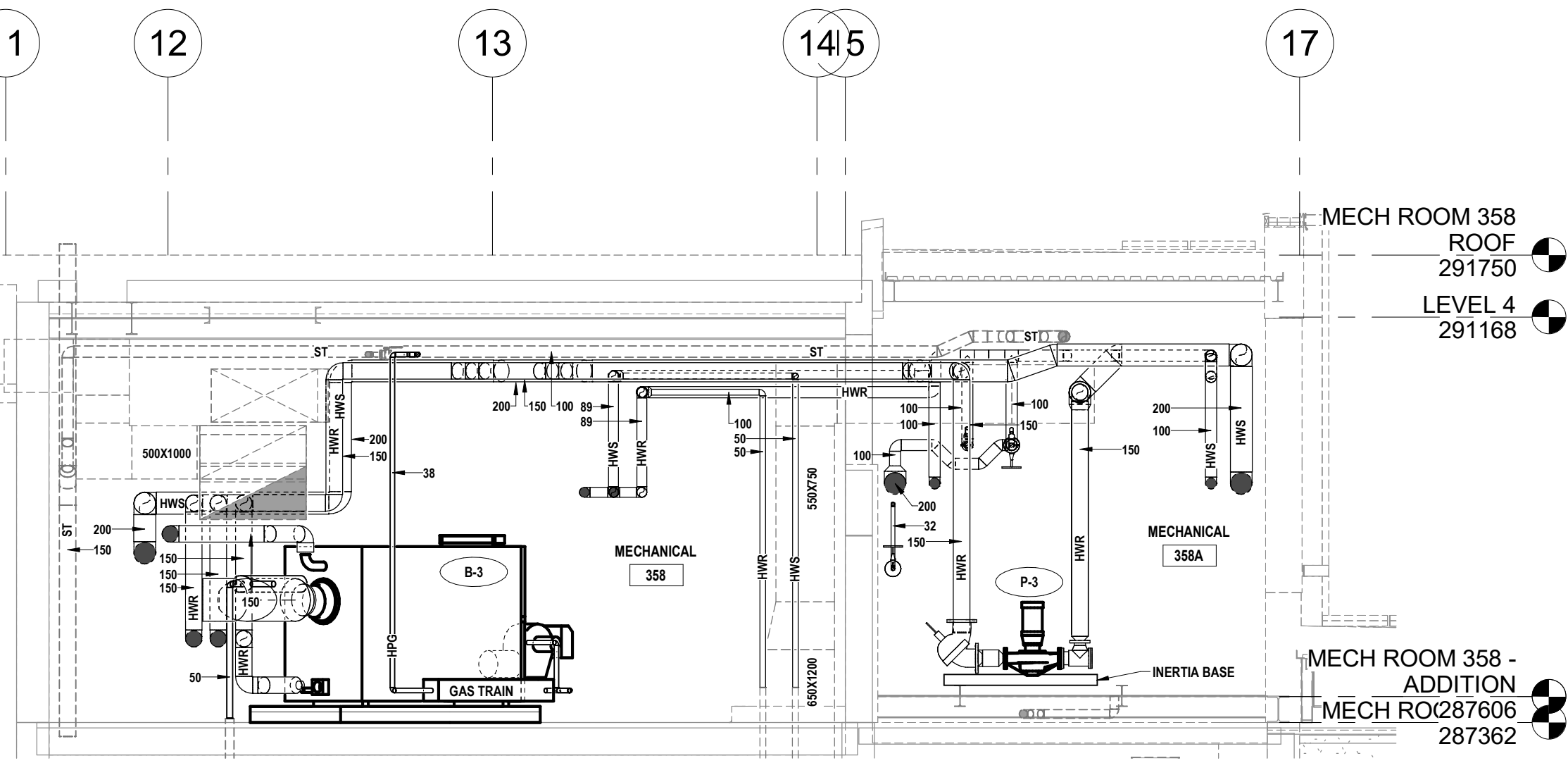
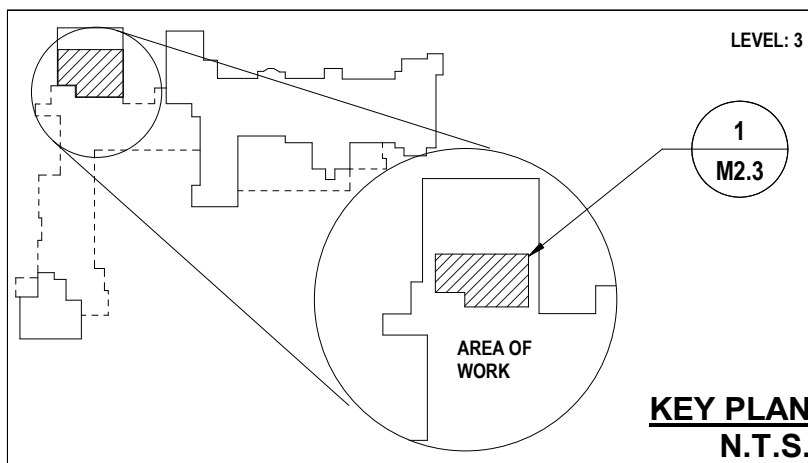
GENERAL NOTES FOR THIS SHEET

THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 01 54, "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.

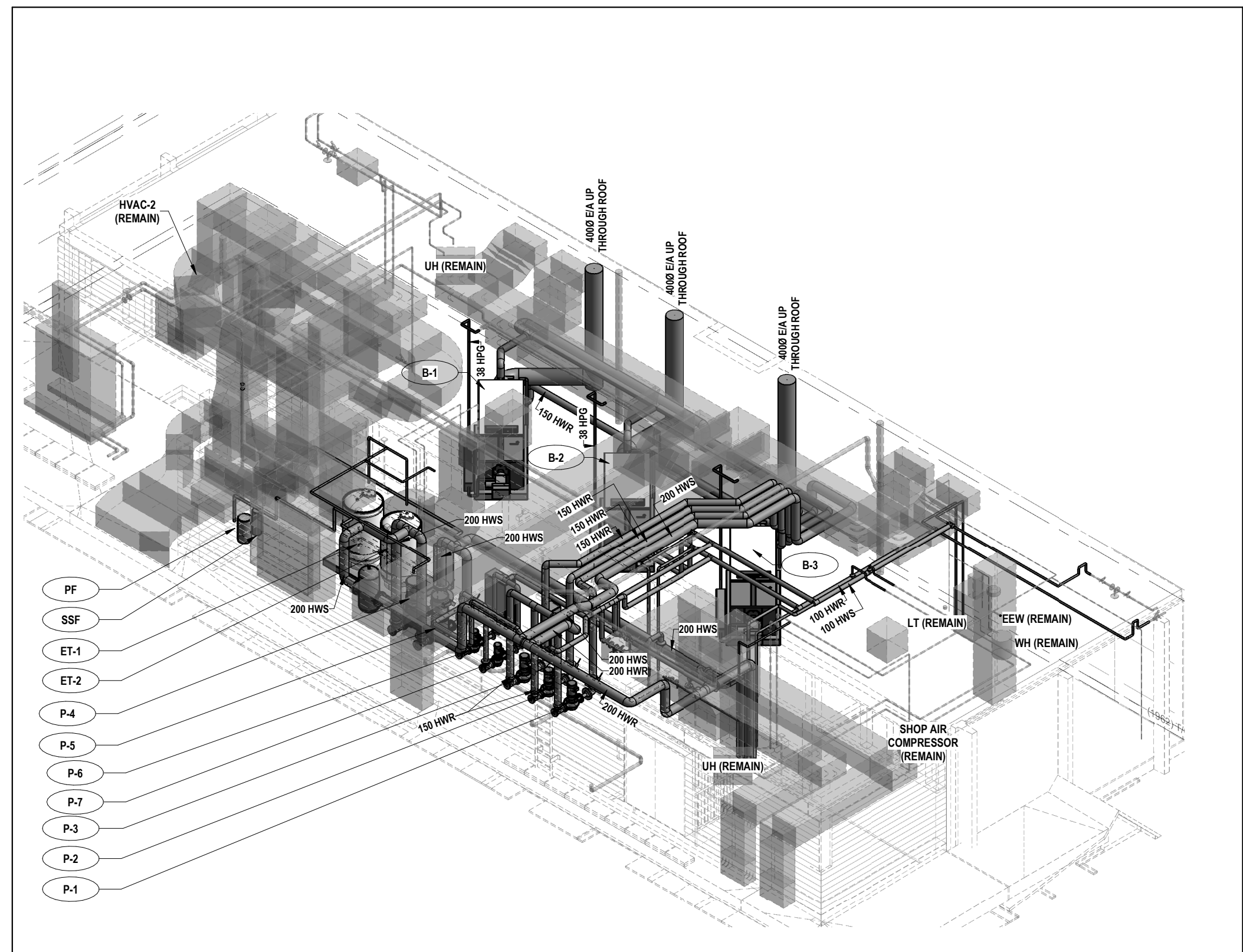
NOTES FOR THIS SHEET

- REFER TO SHEET M2.14 FOR CONTINUATION.
- RELOCATE EX BAS CONTROL PANEL TO ACCESSIBLE LOCATION, UNOBSTRUCTED BY PIPING, DUCTWORK, ETC.
- PROVIDE PUMP VFD & INSTALL ON WALL IN THIS APPROXIMATE LOCATION. MAINTAIN MIN 1.0 M CLEAR IN FRONT OF VFD ACCORDING TO OESC REQUIREMENTS. REFER TO HEATING / COOLING PLANT SCHEMATIC FOR ADDITIONAL INFORMATION.
- PROVIDE SUPPLEMENTARY STEEL FRAMING SUPPORTS FOR MOUNTING SYSTEM FILTER / POT FEEDER.
- INSTALL BOILER TO MAINTAIN MANUFACTURER & CODE REQUIRED SERVICE CLEARANCES.
- INSTALL AIR / DIRT SEPARATOR OUT OF SERVICE PATH.
- REFER TO DOMESTIC WATER / HEATING WATER PIPING PLAN (AS APPLICABLE) FOR CONTINUATION.
- PROVIDE INERTIA BASE FRAME FOR MOUNTING PUMP. SECURE BASE FRAME ISOLATORS RIGIDLY TO FLOOR FRAMING (NOT TO METAL FLOOR PANELS). PROVIDE ADDITIONAL FRAMING MEMBERS TO SPAN GAPS BETWEEN FLOOR FRAMING.

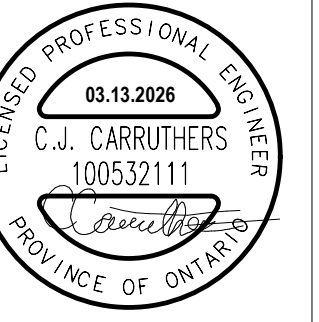
MECHANICAL ROOM GENERAL NOTES:
- NOT ALL INFORMATION REQUIRED FOR INSTALLATION SHOWN ON FLOOR PLAN. REFER TO SCHEMATIC FOR ADDITIONAL INFORMATION.
- PROVIDE AUTOMATIC AIR VENTS AT HIGH POINTS & DRAIN VALVES AT LOW POINTS IN PIPING.
- REFER TO PLUMBING & GAS PIPING PLAN FOR APPROXIMATE EXTENTS OF CONCRETE PAD.



SECTION A: MECHANICAL ROOM 358
SCALE: 1:50



ISOMETRIC VIEW B: A Mech Room 358 - Isometric View
SCALE:



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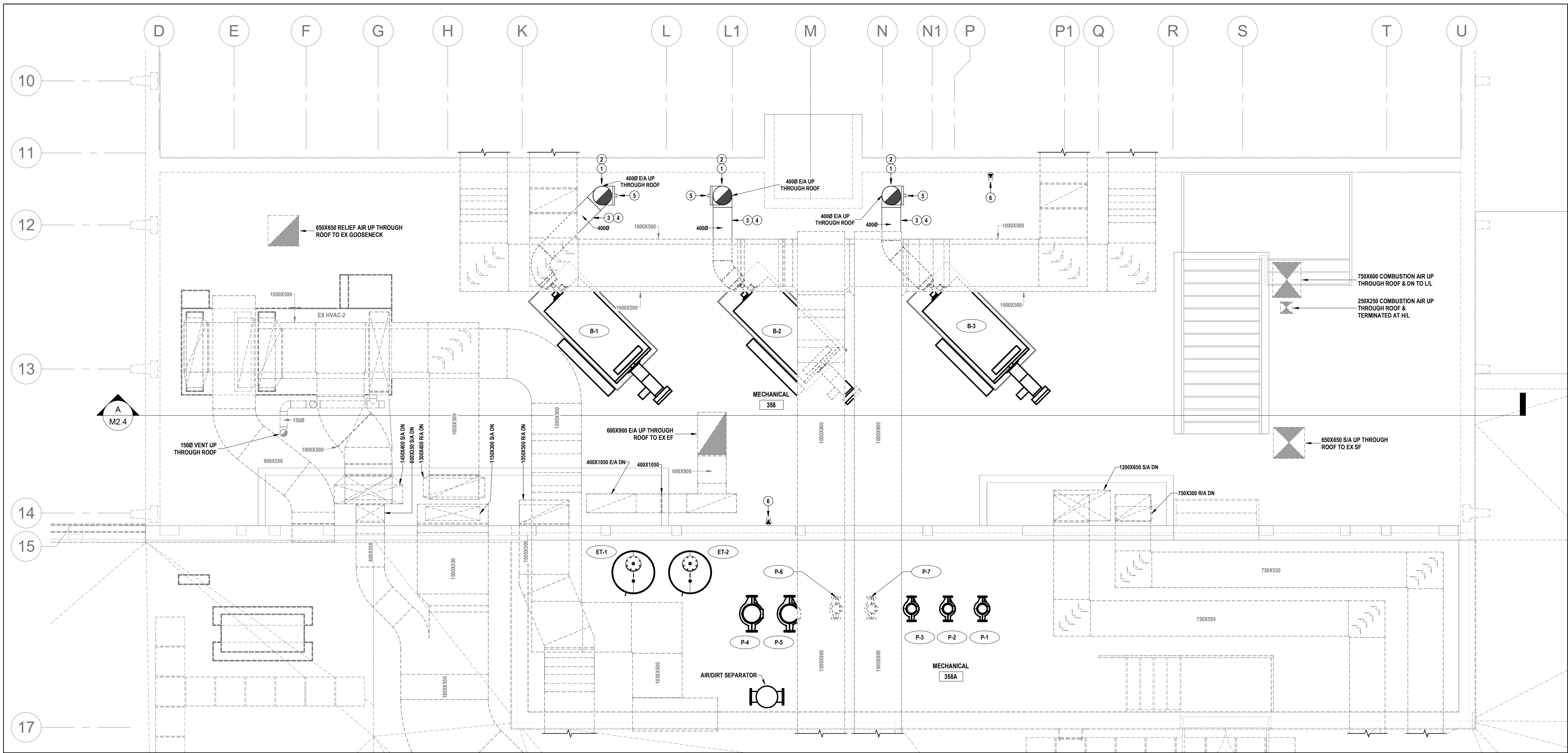


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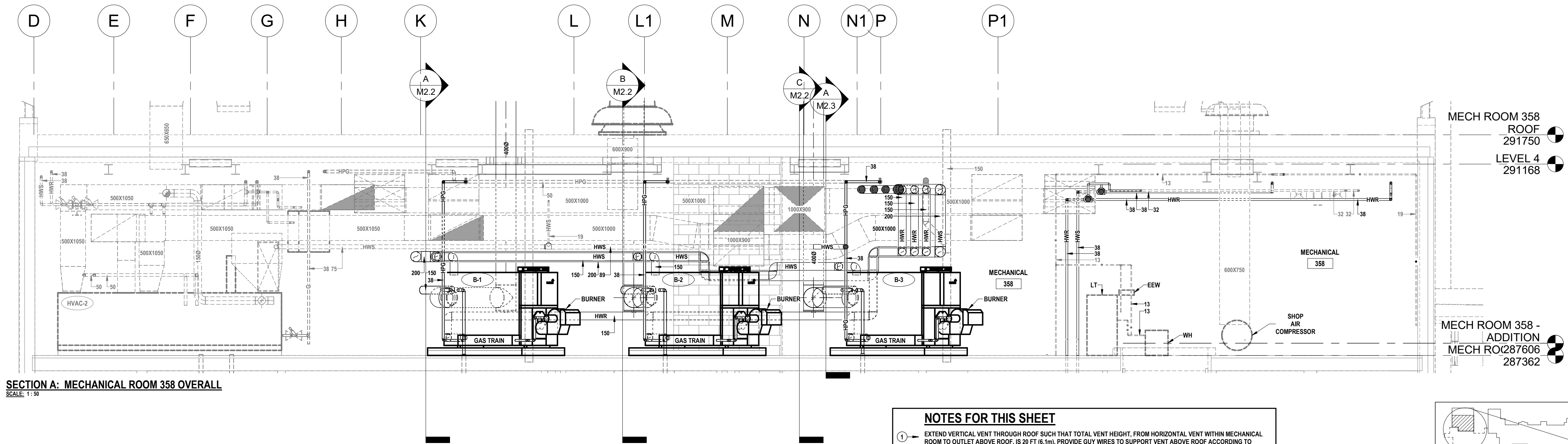
Project No.: 23053
Drawn By: J.S.
Checked By: C.J.C.

PROJECT A - MECHANICAL ROOM 358 HYDRONIC PIPING PLAN

M2.3



1 MECHANICAL ROOM 358 VENTILATION RENOVATION PLAN
M2.4 SCALE: 1:50



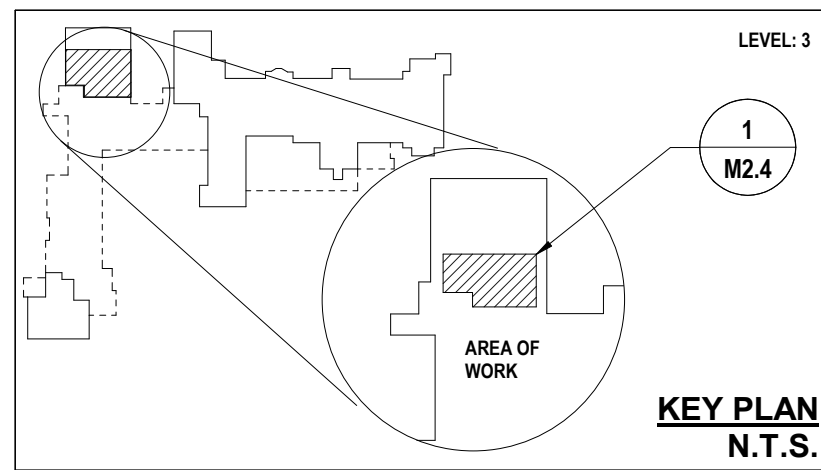
SECTION A: MECHANICAL ROOM 358 OVERALL
SCALE: 1:50

GENERAL NOTES FOR THIS SHEET

- THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 01 35 43, "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.

NOTES FOR THIS SHEET

- EXTEND VERTICAL VENT THROUGH ROOF SUCH THAT TOTAL VENT HEIGHT, FROM HORIZONTAL VENT WITHIN MECHANICAL ROOM TO OUTLET ABOVE ROOF, IS 20 FT (6.1m). PROVIDE GUY WIRES TO SUPPORT VENT ABOVE ROOF ACCORDING TO MANUFACTURER REQUIREMENT. REFER ALSO TO DETAIL & ROOF PLAN.
- PROVIDE BOOT-TEE FITTING AT BASE OF RISER C/W DRAIN.
- PROVIDE COMBUSTION ANALYZER PORT IN ACCESSIBLE LOCATION IN VENTING.
- PROVIDE CATEGORY IV BOILER VENTING SYSTEM ACCORDING TO MANUFACTURER & GAS CODE REQUIREMENTS. PROVIDE ADDITIONAL DRAIN CONNECTIONS TO VENTING SYSTEM WHERE REQUIRED BY VENT MANUFACTURER. ALL DRAIN PIPING SHALL BE RIGID SCHEDULE 40 CPVC & SHALL BE DRAINED TO ADJACENT FFD. REFER ALSO TO SPECIFICATIONS.
- PROVIDE CAPPED T-FITTING FOR INSTALLATION OF BAROMETRIC DAMPER (IF REQUIRED).
- PROVIDE 120V POWER SOURCE C/W WIRING & TRANSFORMER FOR LOW VOLTAGE CONTROL DEVICES / SENSORS. REFER ALSO TO ELECTRICAL DRAWINGS.



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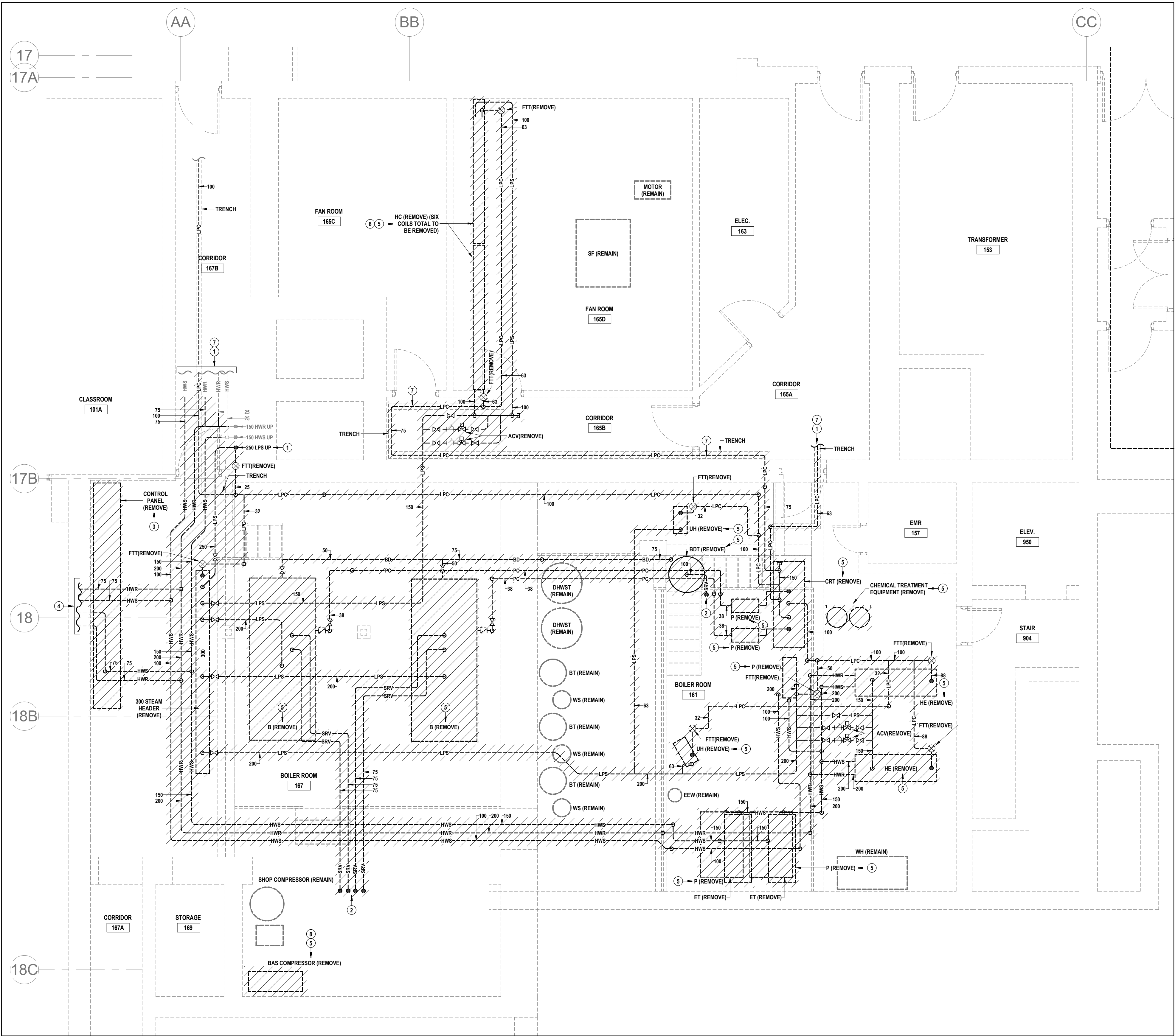


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Project No.: 23053
Drawn By: J.S.
Checked By: C.J.C.

PROJECT A - MECHANICAL ROOM 358
VENTILATION RENOVATION PLAN

M2.4



1 BOILER 161/167 STEAM & HYDRONIC PIPING DEMOLITION PLAN
M2.6 SCALE: 1:50

GENERAL NOTES FOR THIS SHEET

THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 01 35 43, "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.

NOTES FOR THIS SHEET

- REFER TO SHEET M2.9 FOR CONTINUATION.
- REMOVE SAFETY RELIEF VENT PIPING UP TO & INCLUDING EXTERIOR TERMINATIONS. PATCH OPENINGS IN WALLS / ROOF RESULTING FROM REMOVAL AS REQUIRED.
- REMOVE CONTROL PANEL C/W ALL REDUNDANT PNEUMATIC/ANALOG CONTROLS & POWER WIRING. REPLACE NON-REDUNDANT CONTROLS AS REQUIRED WITH DDC.
- REFER TO 'PROJECT B' SCOPE FOR CONTINUATION.
- REMOVE EQUIPMENT C/W PIPING CONNECTIONS, SUPPORTS, CONTROLS, ELECTRICAL POWER SUPPLY ETC. (AS APPLICABLE). PATCH / PAINT WALL / FLOOR TO MATCH ADJACENT FINISHES WHERE AFFECTED.
- REMOVE SHEET METAL FRAMING / SUPPORTS ASSOCIATED WITH HC TO BE REMOVED.
- LPC PIPING LOCATED BELOW FLOOR IN TRENCH
- REMOVE BAS COMPRESSOR C/W ASSOCIATED ACCESSIBLE PNEUMATIC PIPING, AIR DRYER, AUTO DRAINS, ETC.



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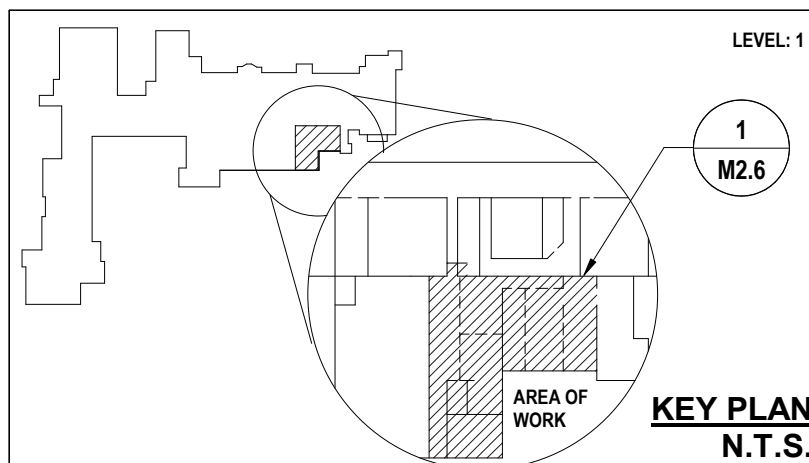
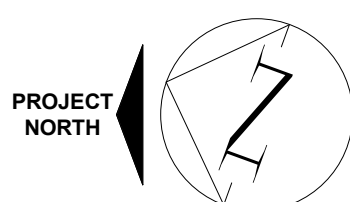
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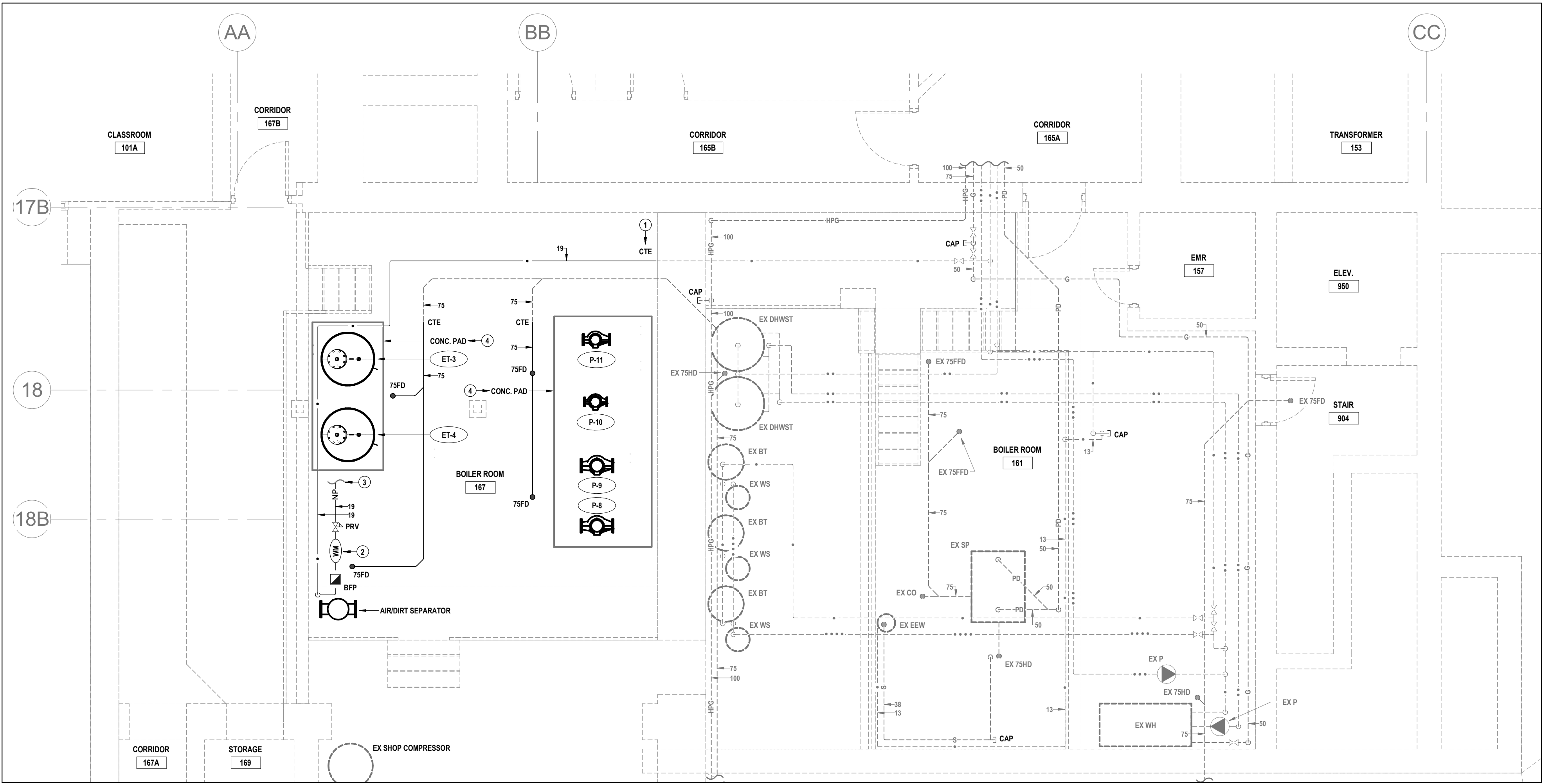


Galt Collegiate Institute
BOILER REPLACEMENT AND H&V UPGRADES - PHASE 2
PROJECT A - BOILER 161/167 STEAM & HYDRONIC PIPING DEMOLITION PLAN

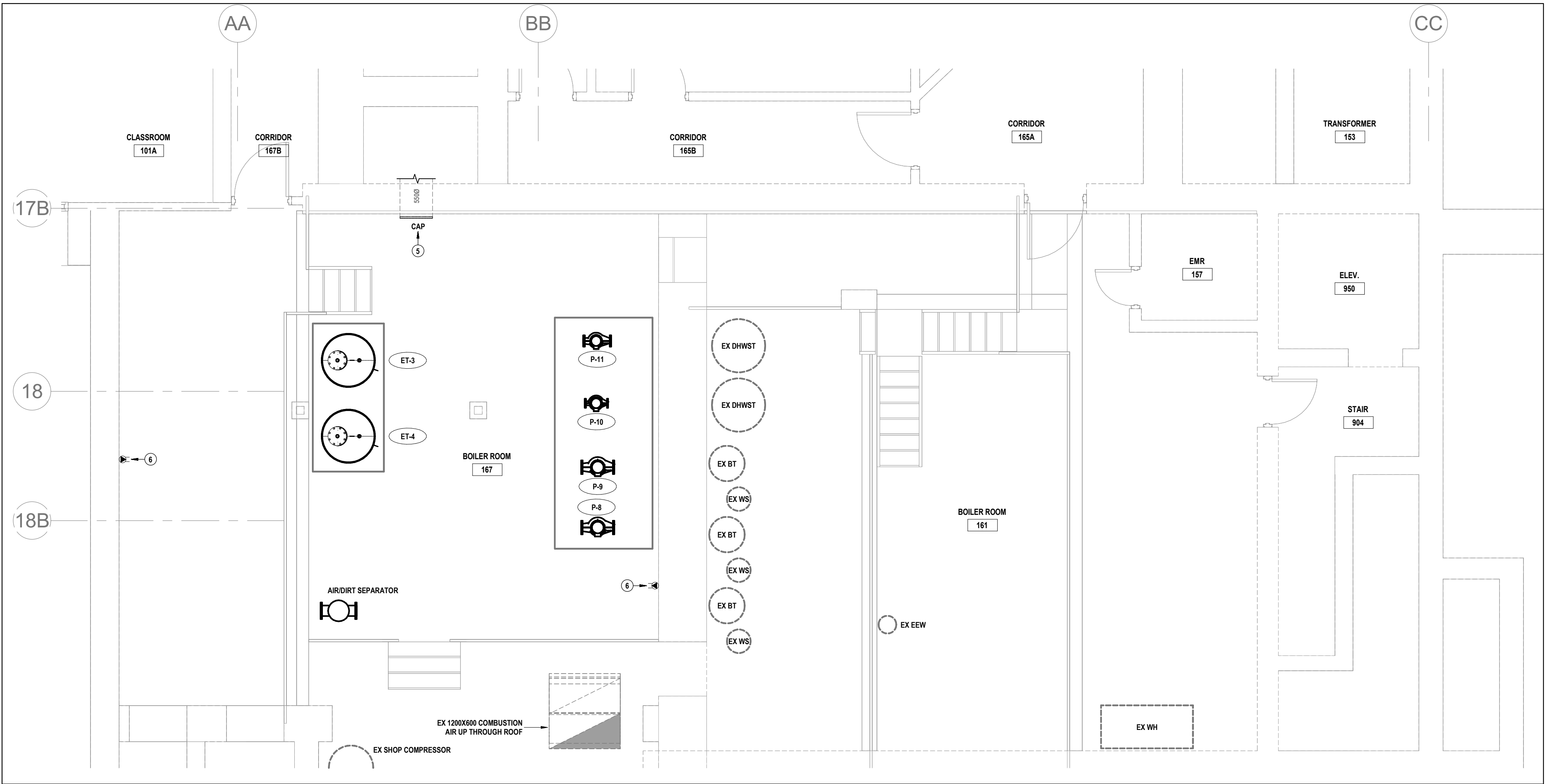
Checked By: J.S. C.J.C.
Drawn By: J.S.
Project No.: 23053



M2.6



1 BOILER 161/167 PLUMBING & GAS PIPING RENOVATION PLAN
M2.7 SCALE: 1" = 50'



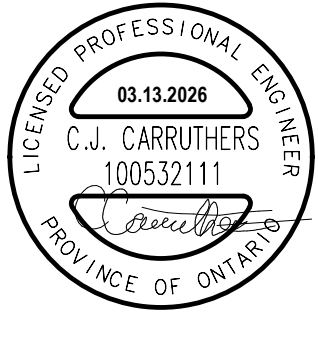
2 BOILER 161/167 VENTILATION RENOVATION PLAN
M2.7 SCALE: 1" = 50'

GENERAL NOTES FOR THIS SHEET

THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 01 35 43, "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.

NOTES FOR THIS SHEET

- CONFIRM EX DOMESTIC COLD WATER PIPING IS SIZE OF NEW PIPING OR LARGER. OTHERWISE, ADVISE CONSULTANT.
- PROVIDE MAKE-UP WATER STATION C/W BFP, WM, PRV & BYPASS & INSTALL IN THIS APPROXIMATE LOCATION. REFER TO SCHEMATIC FOR ADDITIONAL INFO.
- REFER TO DOMESTIC WATER / HEATING WATER PIPING PLAN (AS APPLICABLE) FOR CONTINUATION.
- PROVIDE 150MM CONCRETE HOUSEKEEPING PAD TO SUPPORT EQUIPMENT ABOVE FINISHED FLOOR. ADJUST PAD DIMENSION TO SUIT EQUIPMENT.
- PROVIDE INSULATED SHEET METAL CAP FOR ABANDONED VENT. VENT WITHIN CHIMNEY TO BE ABANDONED.
- PROVIDE 120V POWER SOURCE C/W WIRING & TRANSFORMER FOR LOW VOLTAGE CONTROL DEVICES / SENSORS. REFER ALSO TO ELECTRICAL DRAWINGS.



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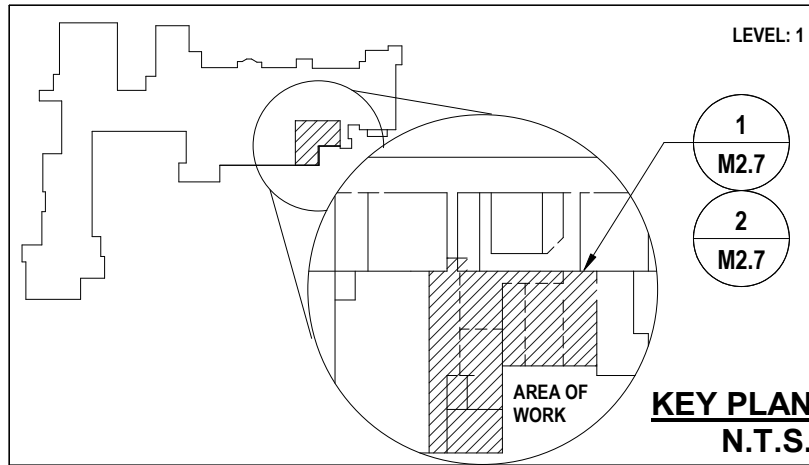
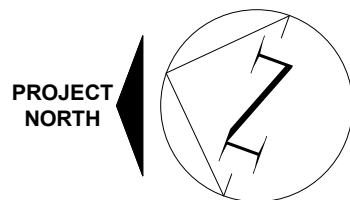


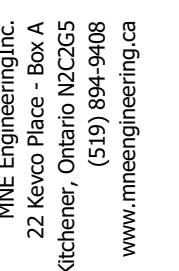
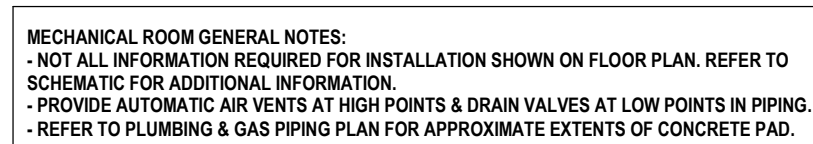
Galt Collegiate Institute
BOILER REPLACEMENT AND HAV UPGRADES - PHASE 2
200 Water Street North, Cambridge, ON

Project No.: 23053
Drawn By: J.S.
Checked By: C.J.C.

PROJECT A - BOILER 161/167 PLUMBING, GAS
PIPING & VENTILATION RENOVATION PLAN

M2.7

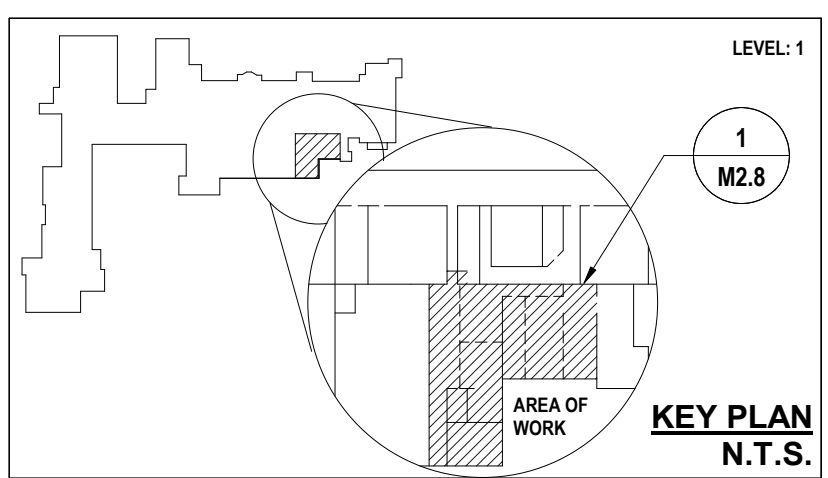
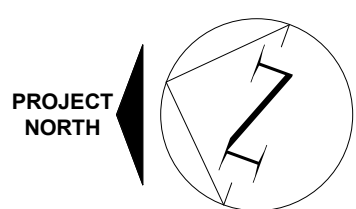


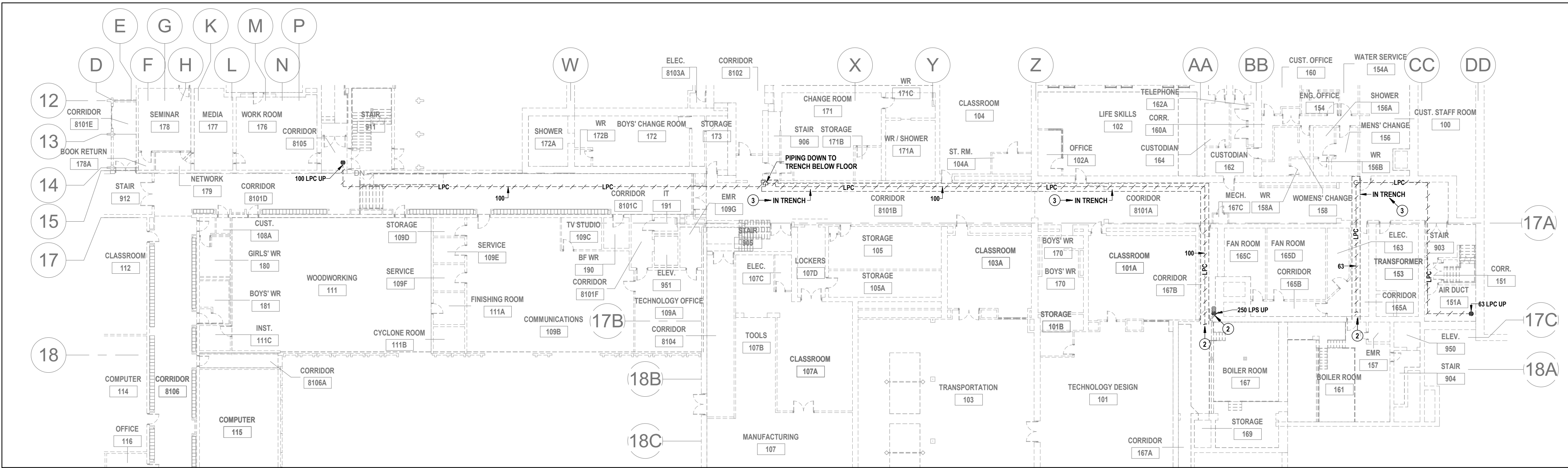


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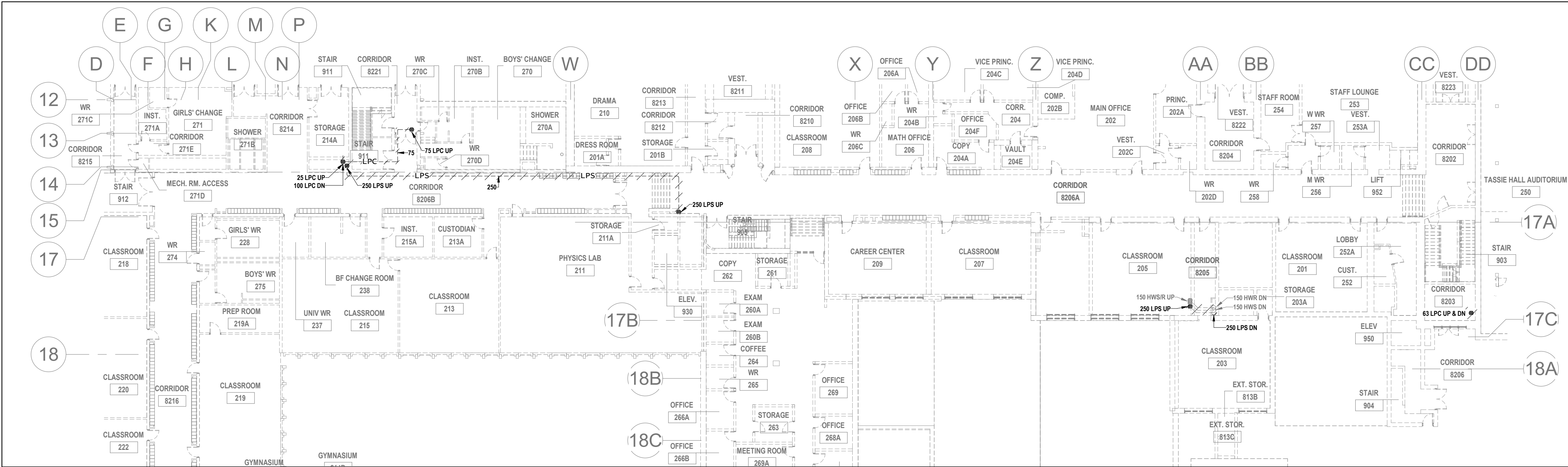
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M2.8

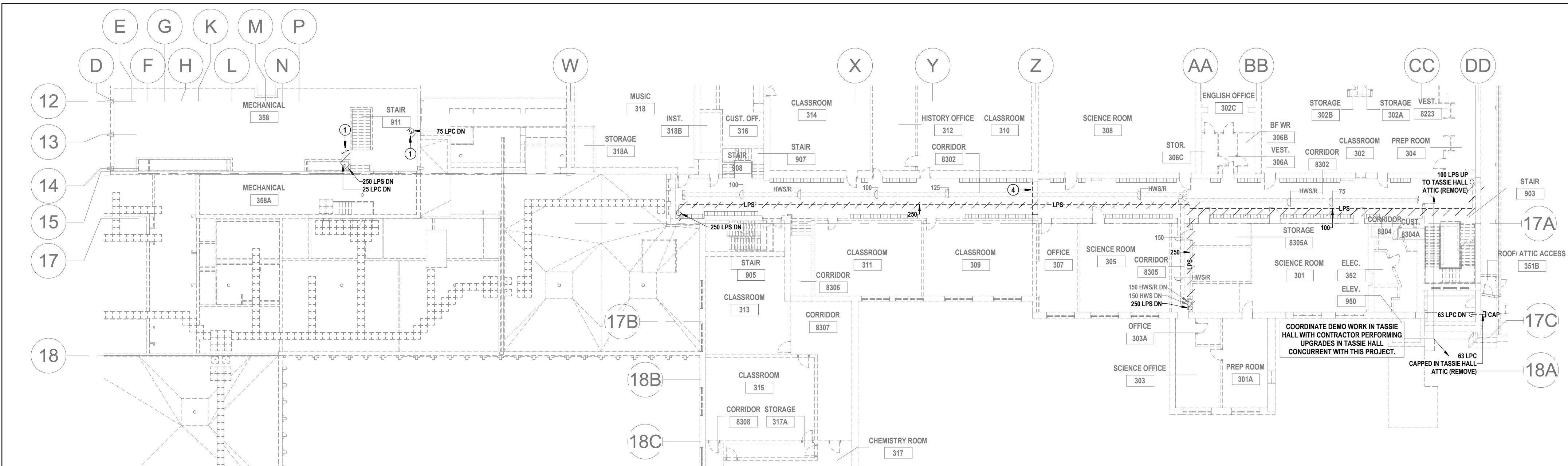




1 FIRST FLOOR CORRIDOR STEAM PIPING DEMOLITION PLAN
M2.9 SCALE: 1:250



2 SECOND FLOOR CORRIDOR STEAM PIPING DEMOLITION PLAN
M2.9 SCALE: 1:250



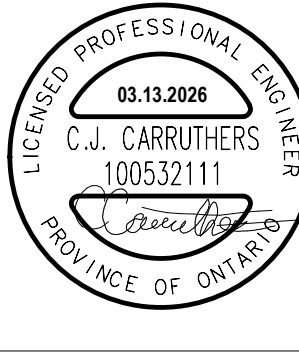
3 THIRD FLOOR CORRIDOR STEAM PIPING DEMOLITION PLAN
M2.9 SCALE: 1:250

GENERAL NOTES FOR THIS SHEET

- THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 01 35 43, "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.
- COMPLETELY REMOVE ALL STEAM & CONDENSATE RETURN PIPING. REMOVE & RE-INSTALL BUILDING FINISHES TO ACCOMMODATE REMOVAL. PROVIDE CUTTING & PATCHING TO MATCH EXISTING AS REQUIRED & ACCORDING TO ARCHITECTURAL DRAWINGS / SPECIFICATIONS.

NOTES FOR THIS SHEET

- REFER TO SHEET M2.1 FOR CONTINUATION.
- REFER TO SHEET M2.8 FOR CONTINUATION.
- LPC PIPING LOCATED BELOW FLOOR IN TRENCH. REMOVE TRENCH ACCESS COVER TO ACCESS PIPING TO BE REMOVED WITHIN. BACKFILL TRENCH & PATCH FLOOR ACCORDING TO ARCHITECTURAL DRAWINGS/SPECIFICATIONS.
- FORMER STONE EXTERIOR WALL. REFER TO ARCH DRAWINGS FOR ADDITIONAL INFO.



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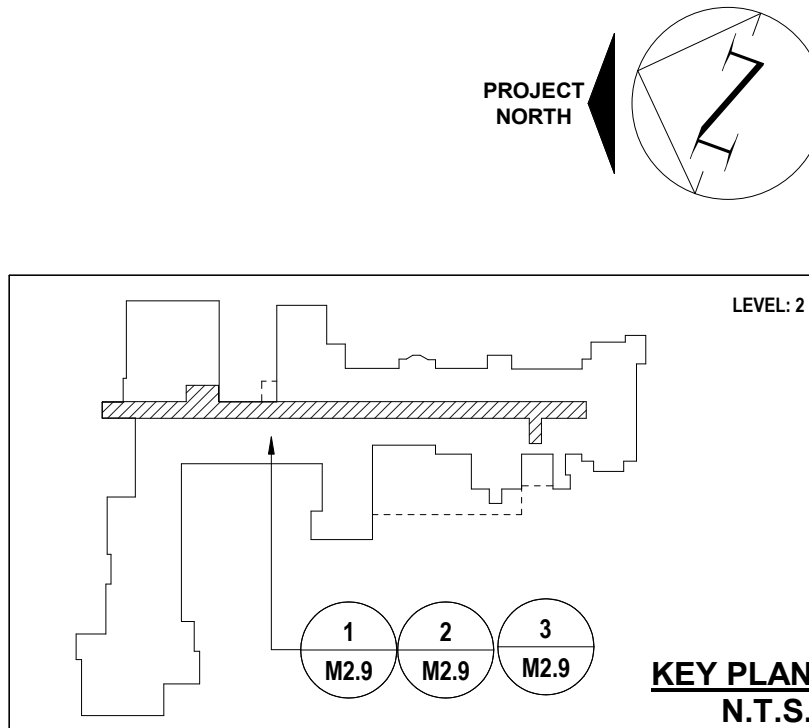


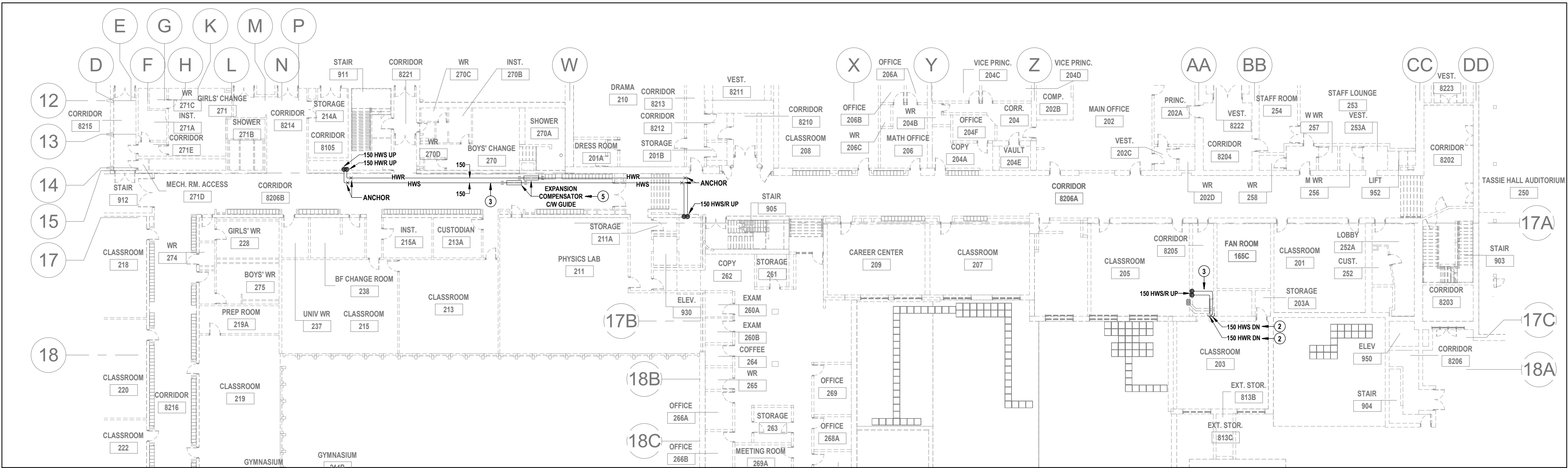
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200 Water Street North, Cambridge, ON

Project No.: 23053
Checked By: J.S.
Drawn By: C.J.C.

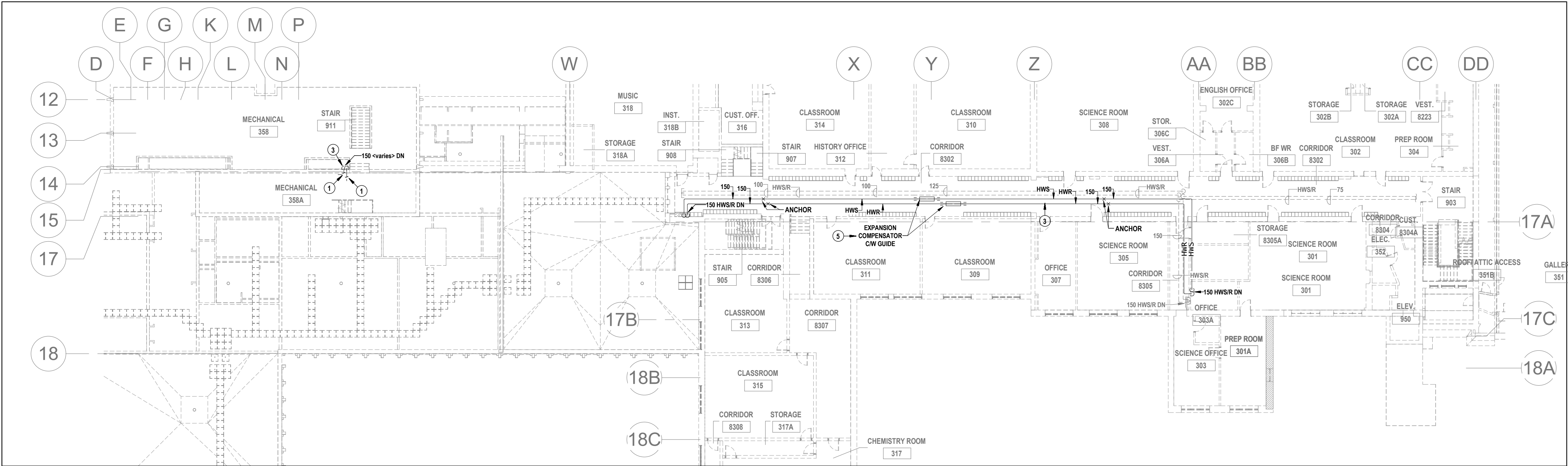
PROJECT A - CORRIDOR STEAM PIPING
DEMOLITION PLANS

M2.9





1 SECOND FLOOR CORRIDOR STEAM PIPING DEMOLITION PLAN
M2.10 SCALE: 1:250



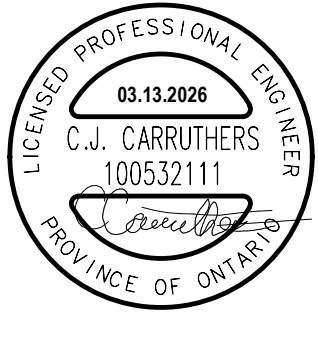
2 THIRD FLOOR CORRIDOR HYDRONIC PIPING RENOVATION PLAN
M2.10 SCALE: 1:250

GENERAL NOTES FOR THIS SHEET

THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 01 35 43, "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.

NOTES FOR THIS SHEET

- REFER TO SHEET M2.4 FOR CONTINUATION.
- REFER TO SHEET M2.11 FOR CONTINUATION.
- INSTALL HOT WATER HEATING SUPPLY & RETURN PIPING ALONG PATH OF REMOVED STEAM PIPING.
- FORMER STONE EXTERIOR WALL. REFER TO ARCH DRAWINGS FOR ADDITIONAL INFO.
- REFER TO SPEC FOR EXPANSION COMPENSATOR REQUIREMENTS.



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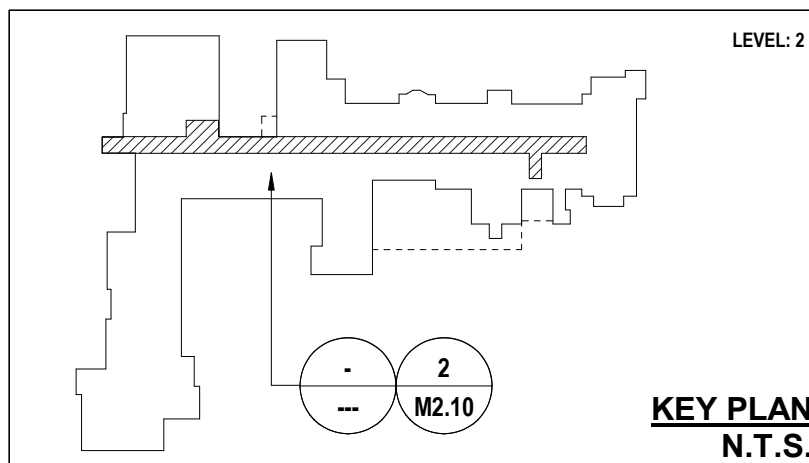
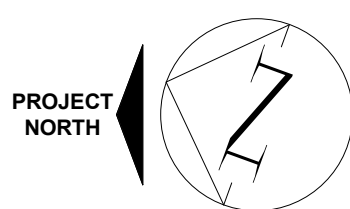


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PROJECT A - CORRIDOR HYDRONIC PIPING RENOVATION PLANS

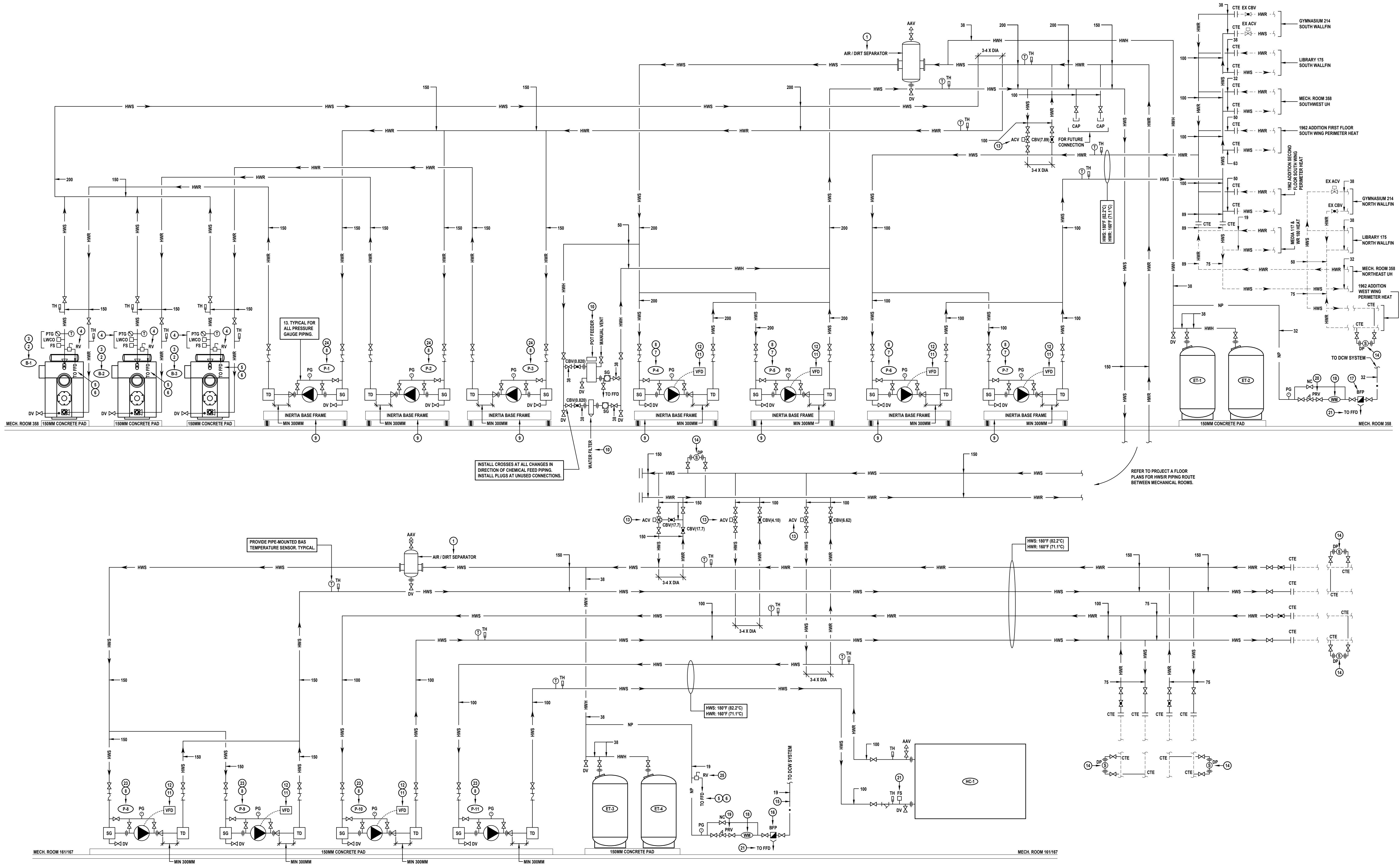
Project No.: 23053

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Checked By: C.J.C.



M2.10



HEATING PLANT PIPING SCHEMATIC

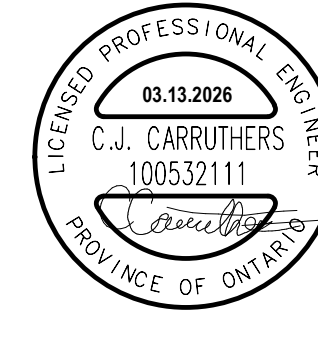
N.T.S.

NOTES FOR THIS SHEET:

1. PROVIDE TACO 480AD SERIES OR APPROVED EQUAL AIR & DIRT SEPARATOR C/W FLANGED CONNECTIONS & 125 PSIG (86 KPA) MAX PRESSURE. SELECT TO MATCH PIPE SIZE.
2. INSTALL BOILER C/W BURNER, GAS TRAIN & ASSOCIATED ACCESSORIES ACCORDING TO MANUFACTURER REQUIREMENTS.
3. PROVIDE BAS CONTROL OF BOILER & INTERLOCK OPERATION WITH ASSOCIATED BOILER PUMP. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
4. FIELD INSTALL EQUIPMENT / ACCESSORIES LOOSE SHIPPED WITH BOILER ACCORDING TO MANUFACTURER REQUIREMENTS. PROVIDE LOW VOLTAGE AND/OR LINE VOLTAGE INTERLOCK WIRING WHERE REQUIRED.
5. PROVIDE STEEL OR COPPER RELIEF PIPING.
6. EXTEND RELIEF PIPING TO NEAREST FLOOR DRAIN. DISCHARGE TO FLOOR DRAIN ACCORDING TO CODE REQUIREMENTS & WITHIN 300 MM OF DRAIN STRAINER. DO NOT DISCHARGE DIRECTLY TO FLOOR DRAIN.
7. PROVIDE KINETICS SERIES PS PUMP STAND TO MOUNT PUMP TO INERTIA BASE. PUMP STAND HEIGHT TO SUIT PIPING CONNECTIONS.
8. PROVIDE BAS CONTROL OF PUMP. REFER TO SPECIFICATIONS.
9. PROVIDE KINETICS CIB-L SERIES INERTIA BASE FRAME HAVING 6" (152 MM) THICKNESS C/W KINETICS FHS SERIES SPRING-TYPE ISOLATORS HAVING 1.5" (38 MM) DEFLECTION AT SUPPORT POINTS.
10. PROVIDE POT FEEDER / FILTER WHERE INDICATED ON FLOOR PLANS & WITH TOP AT APPROX 750 MM AFF. ENSURE FILTER HAS SUFFICIENT CLEARANCE FOR CARTRIDGE REPLACEMENT.

11. PROVIDE VFD FOR SPEED MODULATION WHERE INDICATED ON FLOOR PLAN.
12. COMMISSION VFD ACCORDING TO MANUFACTURER REQUIREMENTS. ENSURE START-UP SEQUENCE LOCKS OUT DRIVE OPERATION AT RESONANT FREQUENCIES.
13. PROVIDE MODULATING CONTROL VALVE C/W BAS CONTROL. SELECT VALVE TO SUIT SPECIFIED FLOW RATE. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION.
14. PROVIDE BAS DIFFERENTIAL PRESSURE SENSOR. INSTALL REMOTE SENSOR WHERE INDICATED ON FLOOR PLANS. REFER ALSO TO SPECIFICATIONS.
15. PROVIDE COPPER MAKE-UP WATER PIPING UPSTREAM OF BFP.
16. PROVIDE APOLLO MODEL 44LF2144AF (0.75" (19 MM) NPS) BFP C/W LEAD FREE CONSTRUCTION, ISOLATION VALVES, STRAINER, UNIONS & MODEL AG04A112 AIR GAP. INSTALL & TEST ACCORDING TO CODE REQUIREMENTS. MOUNT WITH CENTERLINE BETWEEN 750 MM & 1500 MM AFF.
17. PROVIDE APOLLO MODEL 44LF216A4 (1.25" (32 MM) NPS) BFP C/W LEAD FREE CONSTRUCTION, ISOLATION VALVES, STRAINER, UNIONS & MODEL AG04A112 AIR GAP. INSTALL & TEST ACCORDING TO CODE REQUIREMENTS. MOUNT WITH CENTERLINE BETWEEN 750 MM & 1500 MM AFF.
18. PROVIDE WATER METER. REFER TO SPECIFICATION FOR REQUIREMENTS.
19. PROVIDE APOLLO MODEL 36LF596G2 (0.75" (19 MM) NPS) BFP C/W LEAD FREE CONSTRUCTION, DOUBLE UNION SOLDIER CONNECTIONS, PRESSURE GAUGE, INTERNAL THERMAL BYPASS & 10-35 PSIG (69-241 KPA) ADJUSTMENT RANGE. SET DISCHARGE PRESSURE TO 15 PSIG.

20. PROVIDE APOLLO MODEL 36LF596G2 (1.25" (32 MM) NPS) BFP C/W LEAD FREE CONSTRUCTION, DOUBLE UNION SOLDIER CONNECTIONS, PRESSURE GAUGE, INTERNAL THERMAL BYPASS & 10-35 PSIG (69-241 KPA) ADJUSTMENT RANGE. SET DISCHARGE PRESSURE TO 15 PSIG.
21. EXTEND RP BFP DRAIN TO NEAREST FLOOR DRAIN.
22. PROVIDE FLOW SWITCH. 2-WAY VALVE SHALL REMAIN FULLY OPEN UNLESS WATER FLOW IS PROVEN. DE-ENERGIZE AHU FAN & CLOSE D/A DAMPER IF FLOW NOT PROVEN.
23. PROVIDE KINETICS PS SERIES PUMP STAND C/W FHS SERIES SPRING ISOLATOR OR EQUAL C/W 1.5" (38 MM) DEFLECTION FOR PUMP SUPPORT.
24. INTERLOCK PUMP WITH BOILER. PROVIDE WIRING BETWEEN PUMP STARTER / BOILER CONTROLLER.
25. SET RELIEF VALVE PRESSURE TO 50 PSIG (345 KPA). REFER TO SPEC FOR MODEL.



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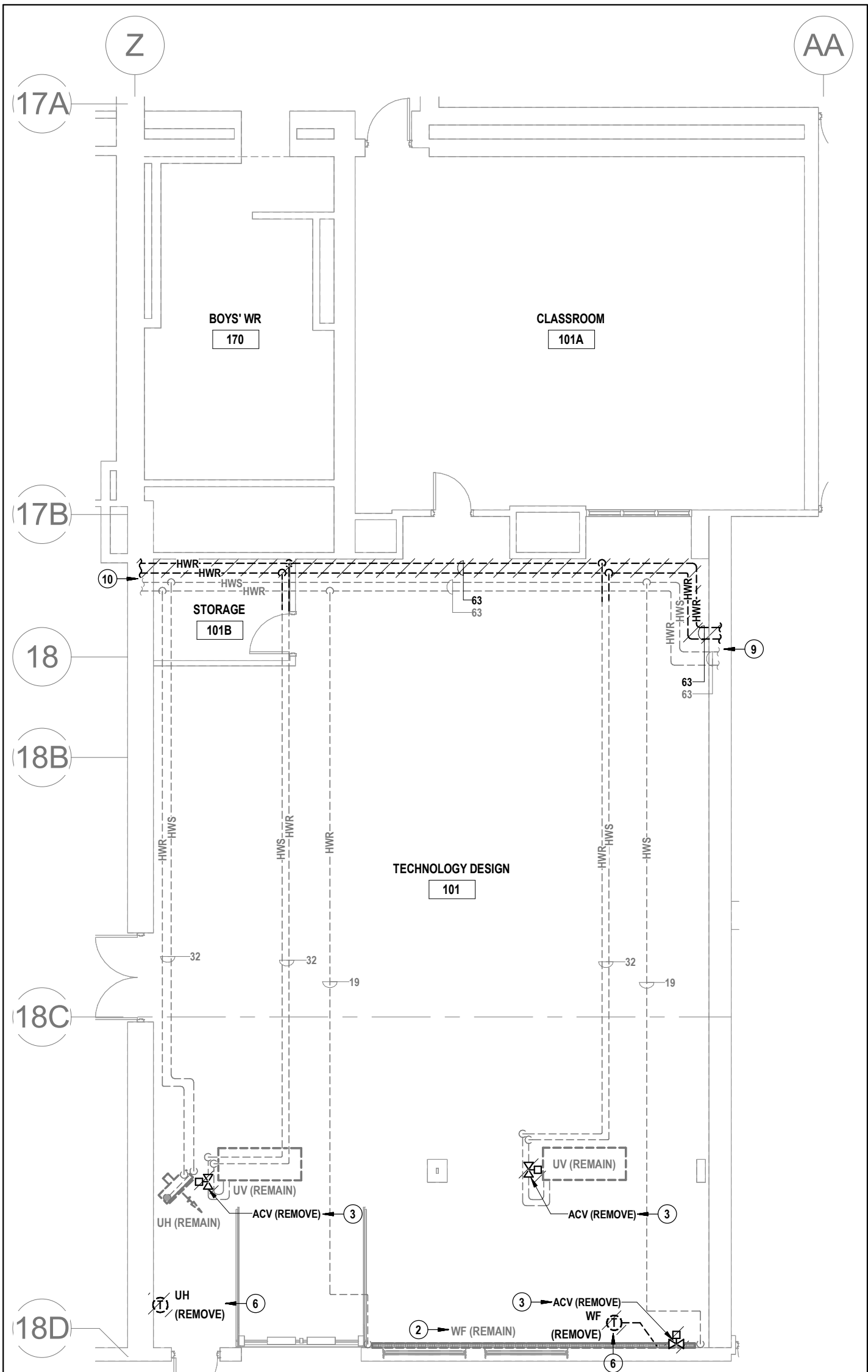
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200 Water Street North, Cambridge, ON

Project No.: 23053

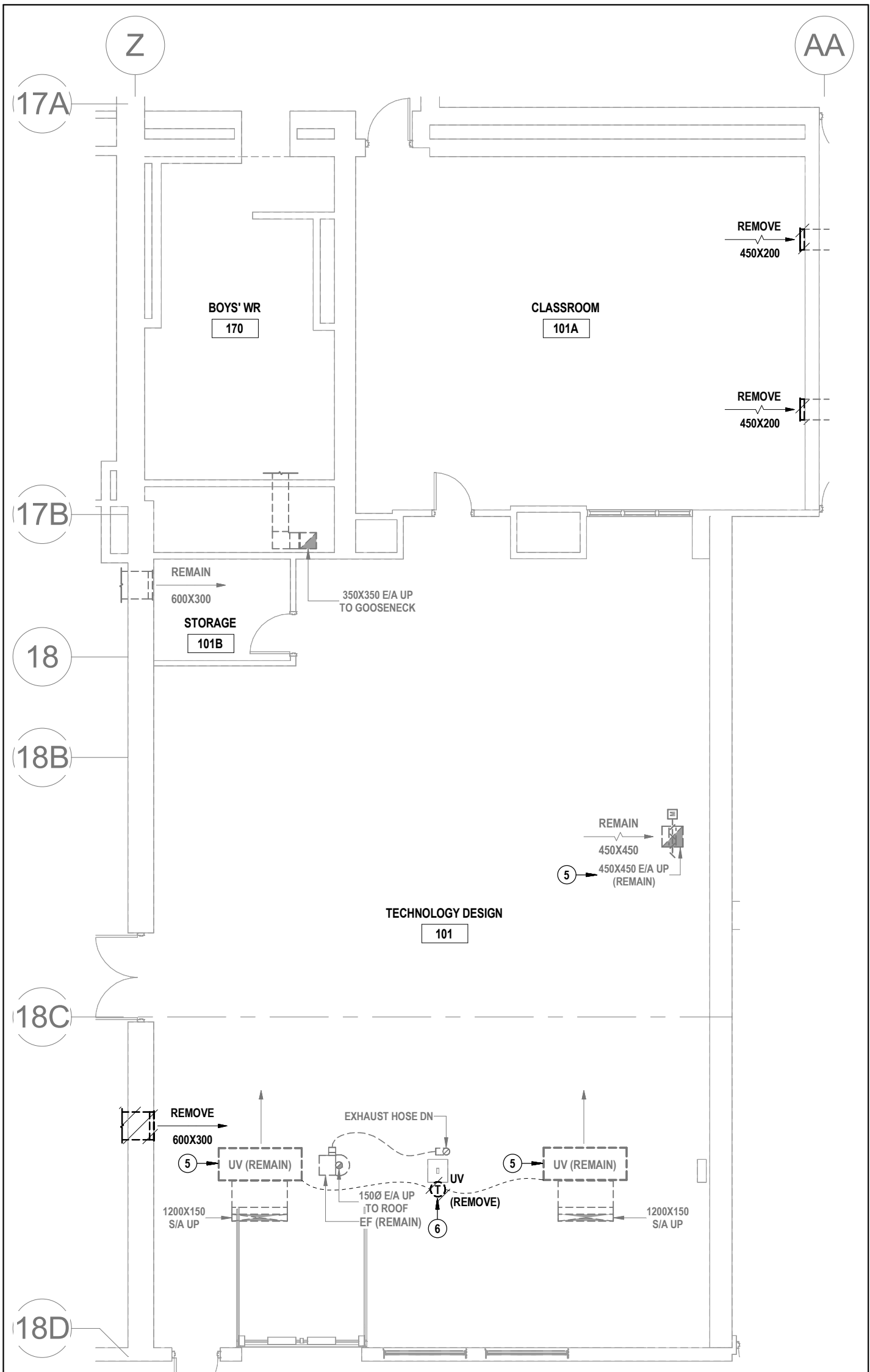
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Drawn By: C.J.C.

PROJECT A - MECHANICAL ROOM 358 HEATING
PLANT PIPING SCHEMATIC

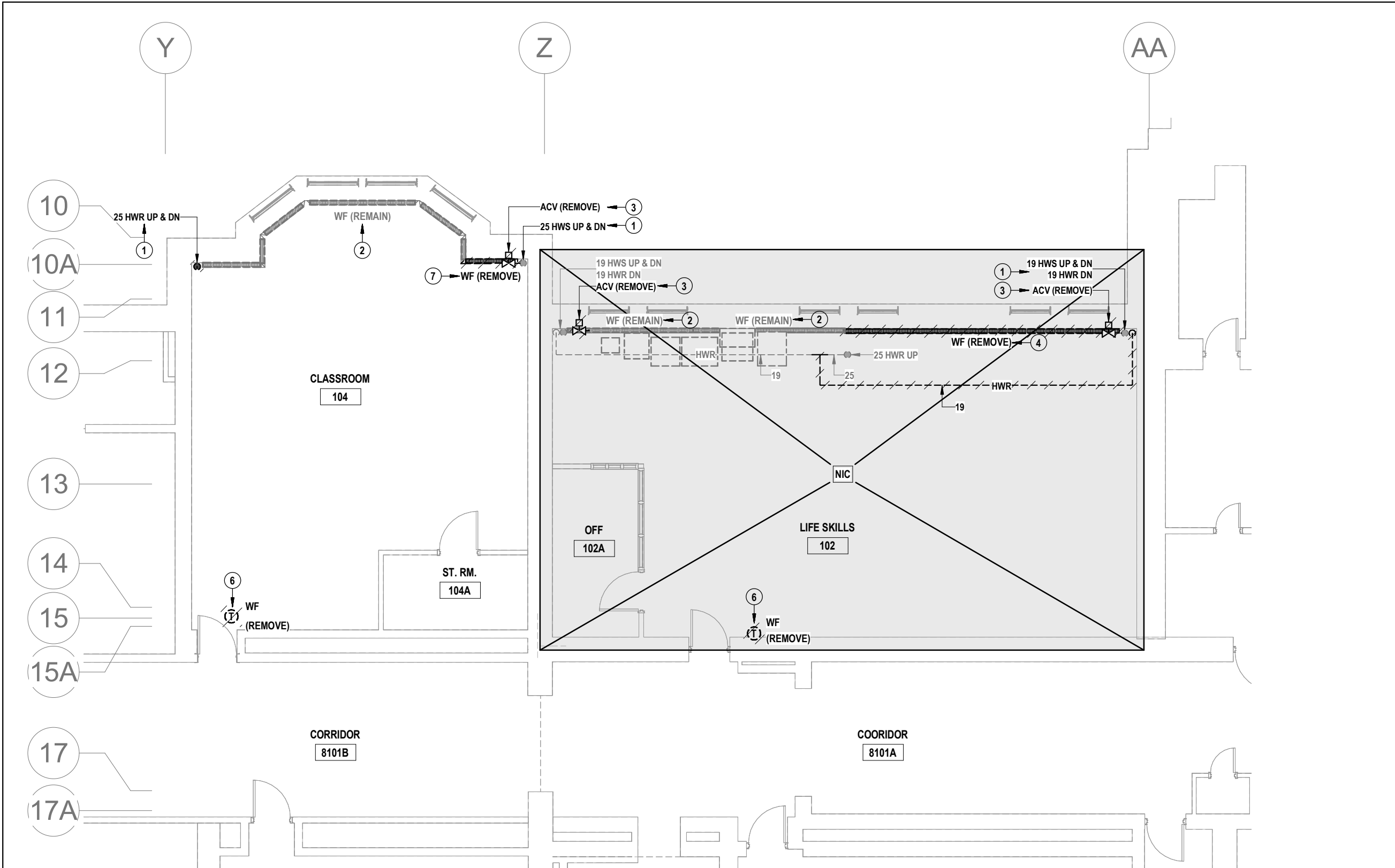
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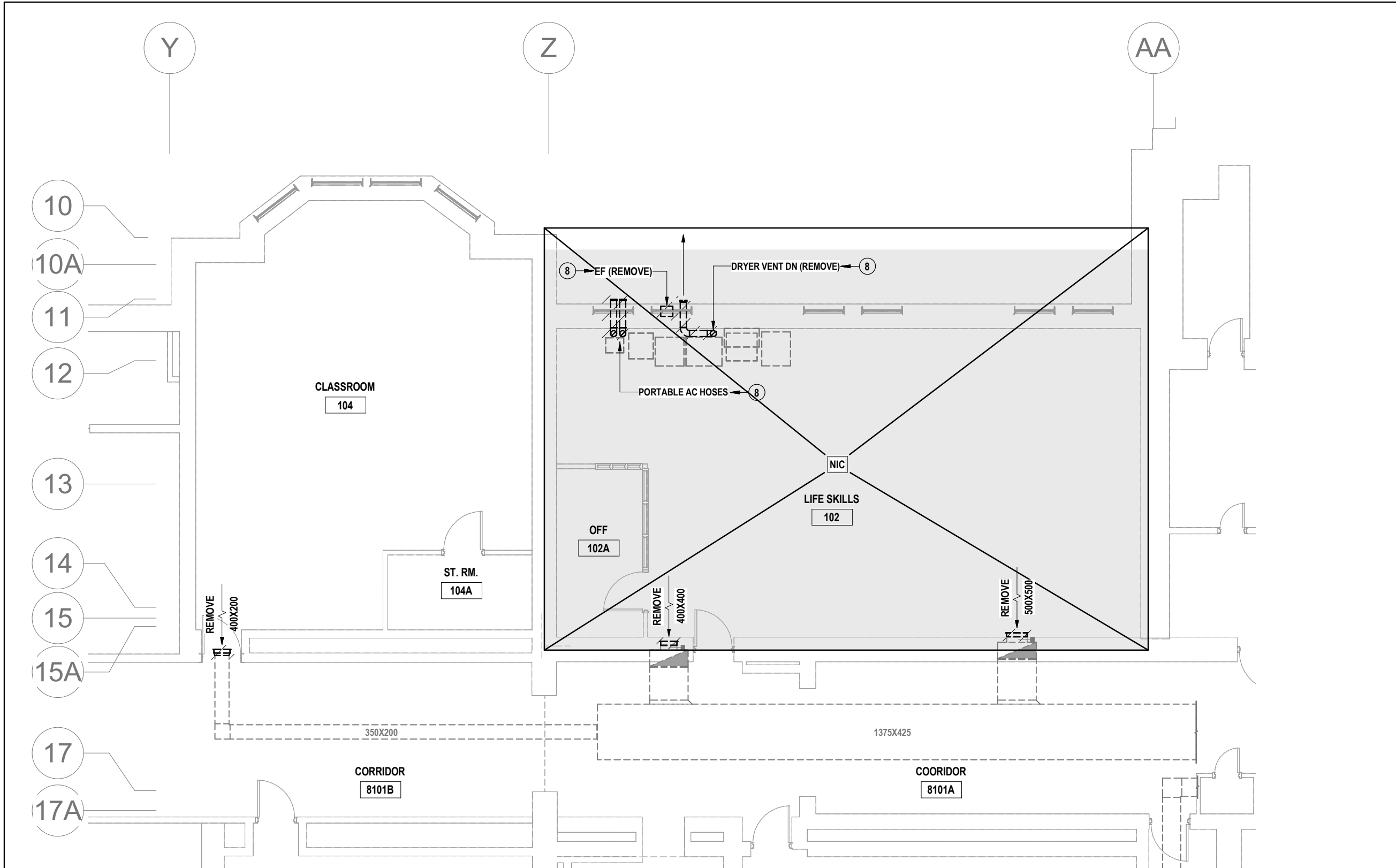
1 TECH DESIGN 101 PIPING DEMOLITION PLAN
M3.1 SCALE: 1:100



2 TECH DESIGN 101 DUCTWORK DEMOLITION PLAN
M3.1 SCALE: 1:100



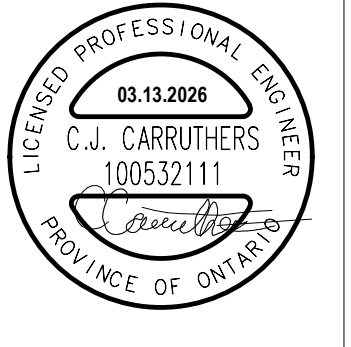
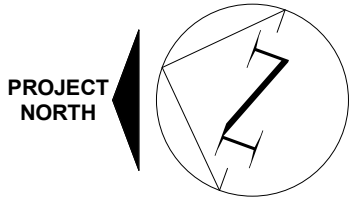
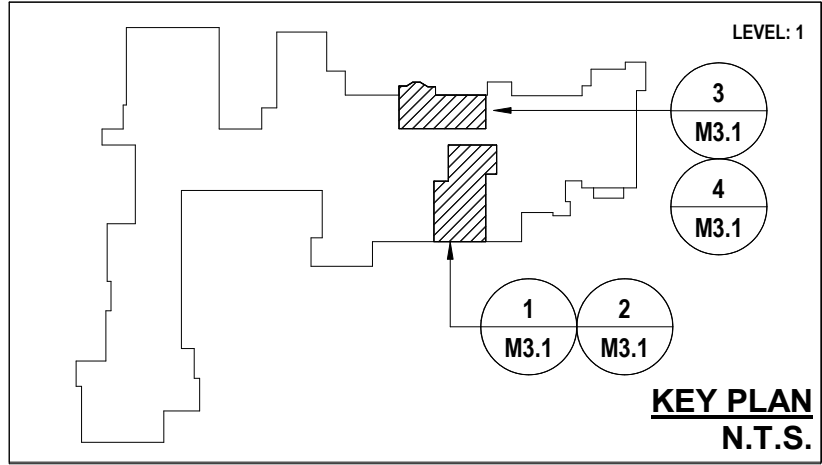
3 LIFE SKILLS 104 & 102 PIPING DEMOLITION PLAN
M3.1 SCALE: 1:100



4 LIFE SKILLS 104 & 102 DUCTWORK DEMOLITION PLAN
M3.1 SCALE: 1:100

- NOTES FOR THIS SHEET**
- CUT BACK RISER TO EXISTING 32 PIPE & CTE WITH NEW 25 PIPE.
 - TEMPORARILY REMOVE EXISTING WALLFIN COVERS TO PERMIT CLEANING OF FIN ELEMENT. ENSURE FINS REMAIN PROTECTED DURING CONSTRUCTION WHEN COVERS ARE REMOVED.
 - REMOVE EXISTING PNEUMATIC CONTROL VALVE C/W ASSOCIATED TUBING, DEVICES, ETC. CUT BACK & CAP PNEUMATIC TUBING IN CONCEALED AREA.
 - DISCONNECT & REMOVE EXISTING WALLFIN HEATER C/W PIPING CONNECTIONS, CONTROLS, SUPPORTS, ETC.
 - REMOVE PNEUMATIC CONTROLS ASSOCIATED WITH EQUIPMENT C/W TUBING, DEVICES, ETC. CUT BACK & CAP PNEUMATIC TUBING IN CONCEALED AREA.
 - REMOVE THERMOSTAT C/W ASSOCIATED WIRING, PNEUMATIC TUBING (AS APPLICABLE), ETC. CUT BACK & CAP PNEUMATIC TUBING IN CONCEALED AREA.
 - REMOVE INDICATED SECTION OF WALLFIN CABINET & PIPING. MODIFY PIPING ON EITHER SIDE ACCORDING TO RENOVATION PLAN.
 - ENSURE EXISTING EXHAUST MEETS THE MINIMUM REQUIRED DISTANCES TO UV-4 AIR INTAKE. ANY RELOCATION OF EXISTING EXHAUST SHALL BE BY THE OWNER.
 - REFER TO 'PROJECT A' FOR CONTINUATION.
 - REFER TO 'PROJECT C' FOR CONTINUATION.

- GENERAL NOTES**
- THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 01 35 43, "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.
 - REMOVE ALL REDUNDANT ACCESSIBLE PNEUMATIC TUBING BACK TO SOURCE & SOLDER / MECHANICALLY SEAL TO ENSURE NO LEAKS. REMOVE ACCESSIBLE BRANCH THAT IS NOT IN USE.



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BOILER REPLACEMENT AND HAVY UPGRADES - PHASE 2
PROJECT B - LEVEL 1 CLASSROOM DEMOLITION PLANS

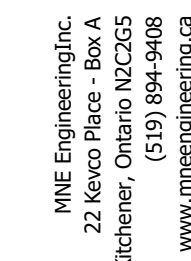
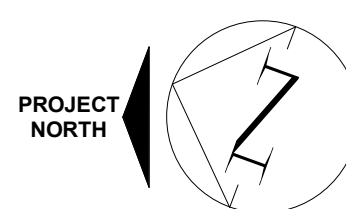
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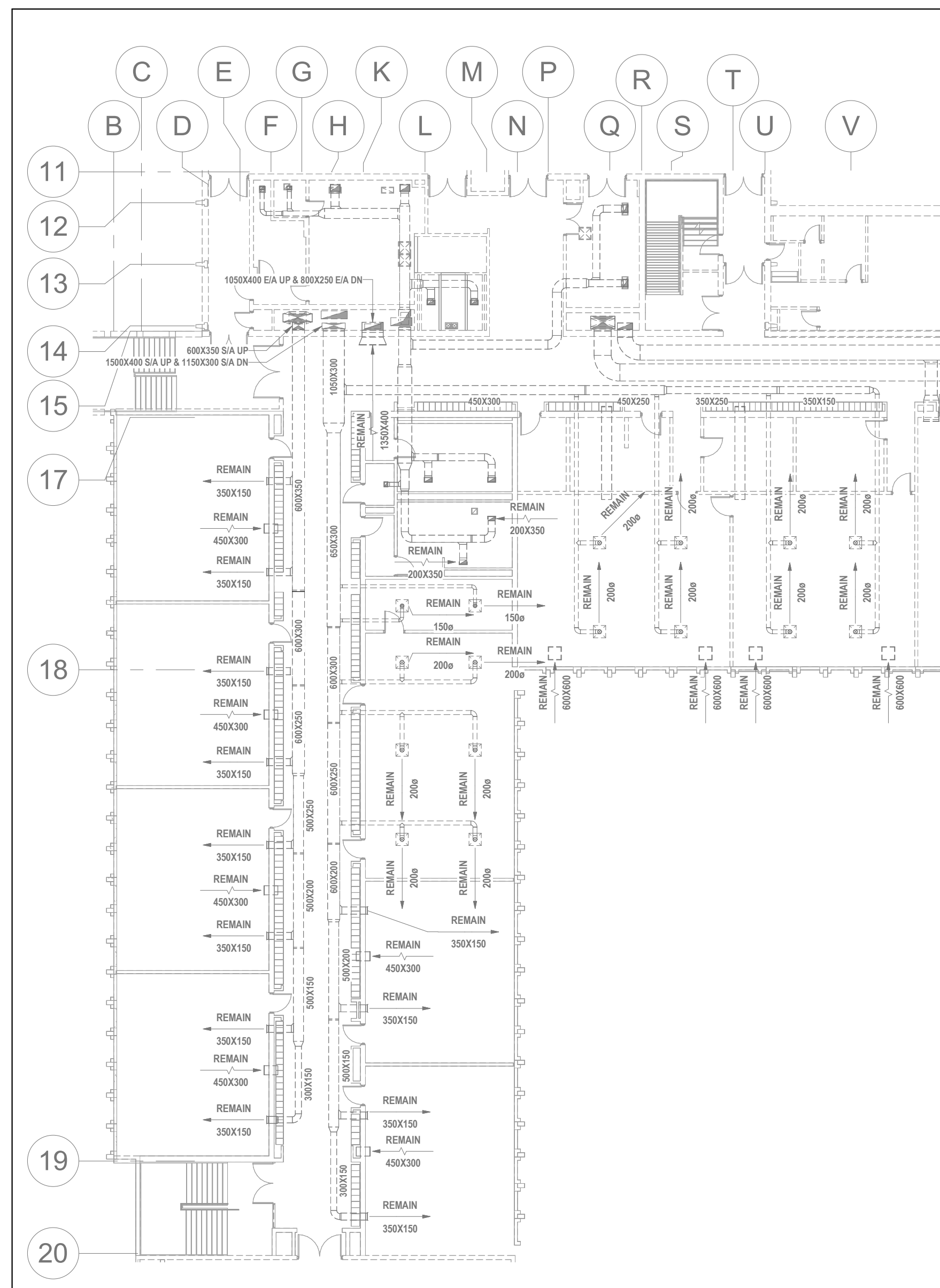
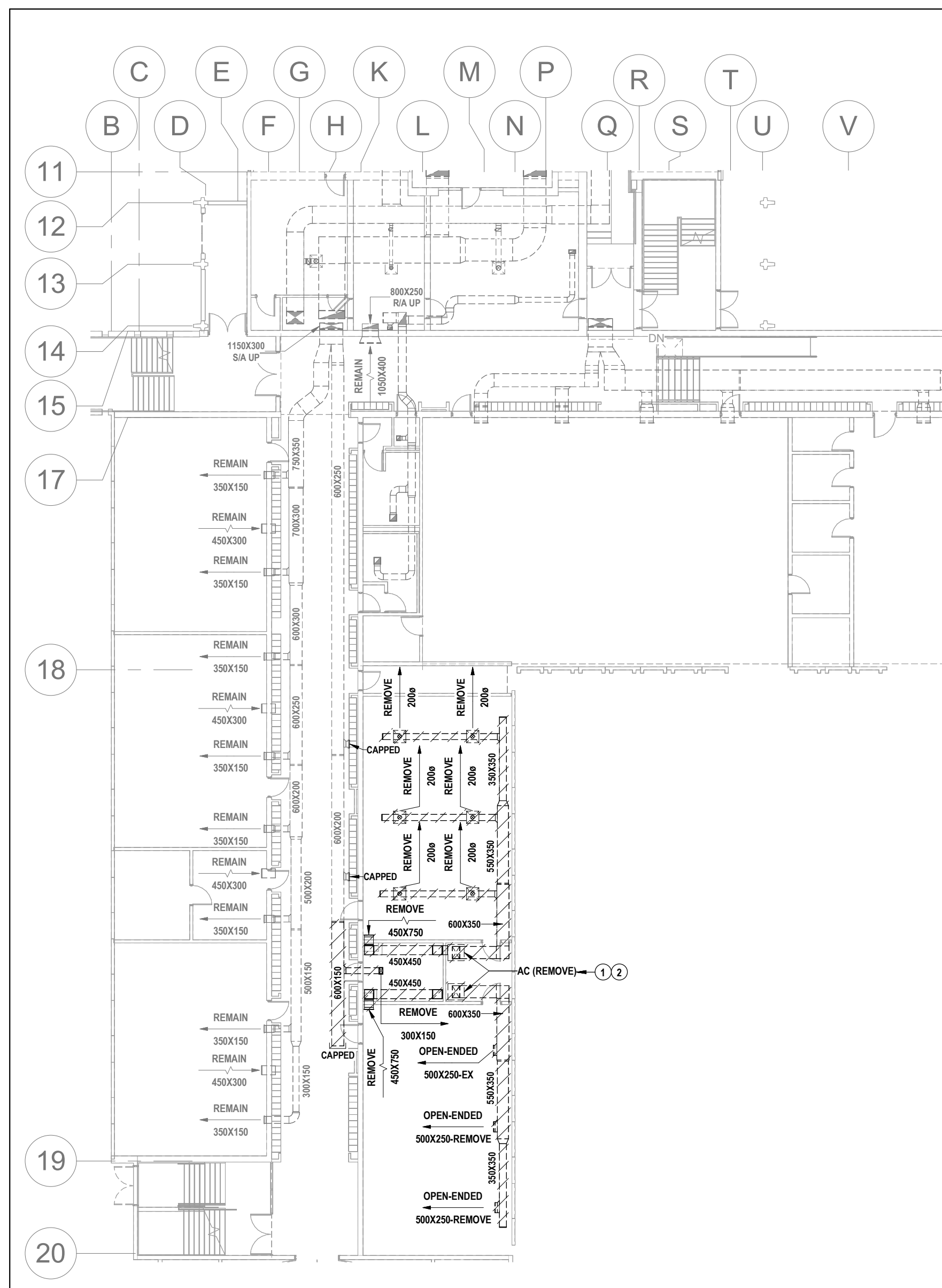
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Drawn By:	A.L.G.		

M3.1



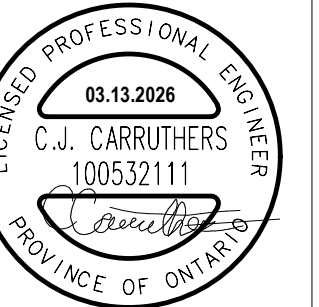
- ## GENERAL NOTES
- THIS AREA OF WORK CONTAINS ASBESTOS CONTAMINATING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 91.35.3, "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.
 - REMOVE ALL REDUNDANT ACCESSIBLE PNEUMATIC TUBING BACK TO SOURCE & SOLDER / MECHANICALLY SEAL TO ENSURE NO LEAKS. REMOVE ACCESSIBLE BRANCH THAT IS NOT IN USE.





NOTES FOR THIS SHEET

- ① REMOVE EXISTING AIR CONDITIONING UNITS C/W ASSOCIATED CONTROLS, POWER, SUPPORTS, REFRIGERANT PIPING, ROOF-MOUNTED CONDENSING UNITS, DUCTWORK, ETC.
- ② REMOVE SUPPLY & RETURN DUCTWORK EXTENDING FROM AIR CONDITIONING UNITS INCLUDING ALL CEILING / WALL MOUNTED GRILLES / DIFFUSERS. REMOVE DROP CEILINGS AS REQUIRED TO PERMIT DUCTWORK REMOVAL. PATCH OPENINGS IN WALLS RESULTING FROM REMOVAL OF GRILLES.



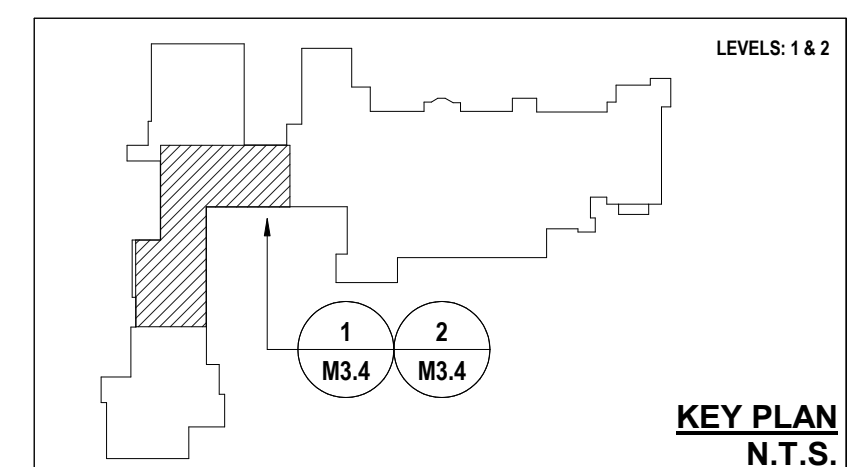
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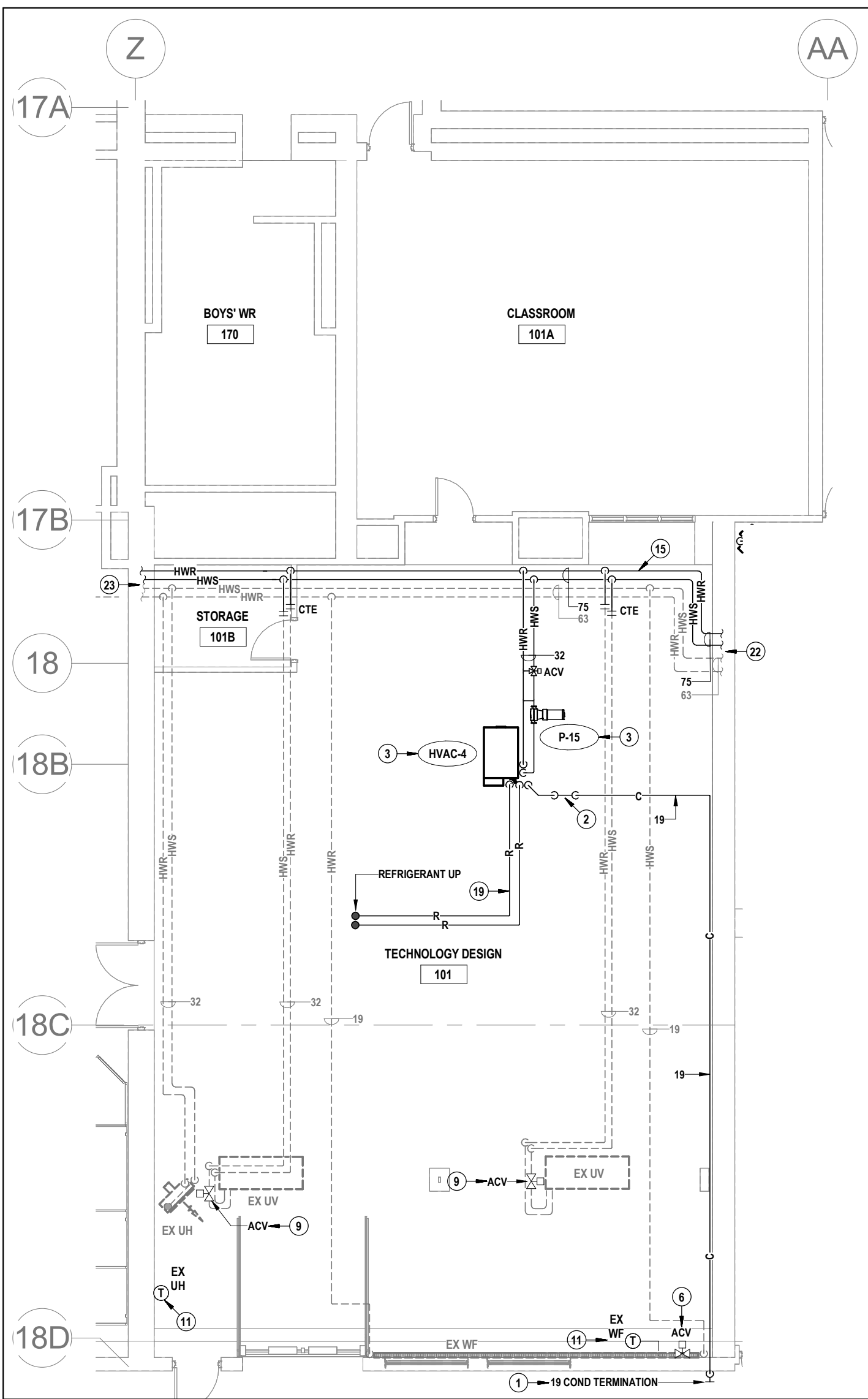
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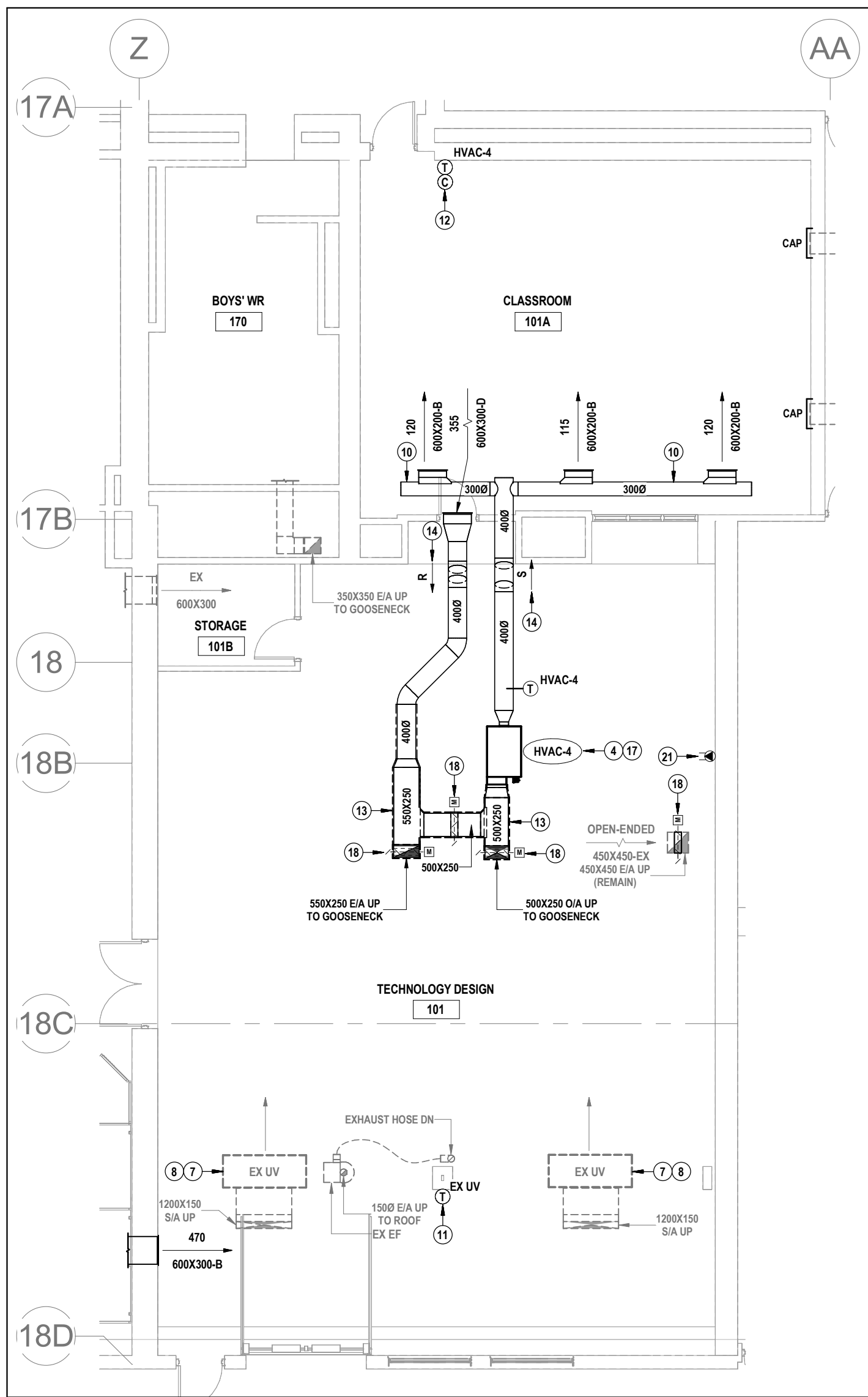
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23053	A.L.G.	C.J.C.
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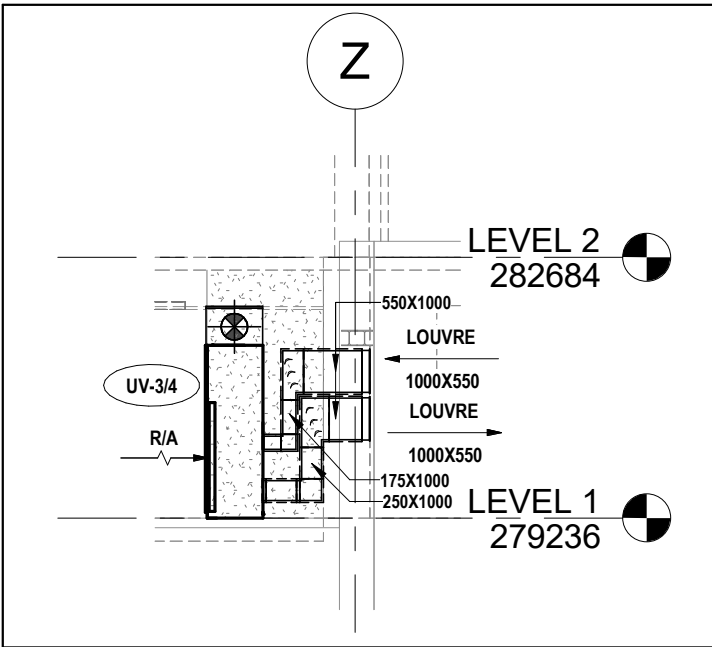




1 **TECH DESIGN 101 PIPING RENOVATION PLAN**
M3.5 SCALE: 1:100



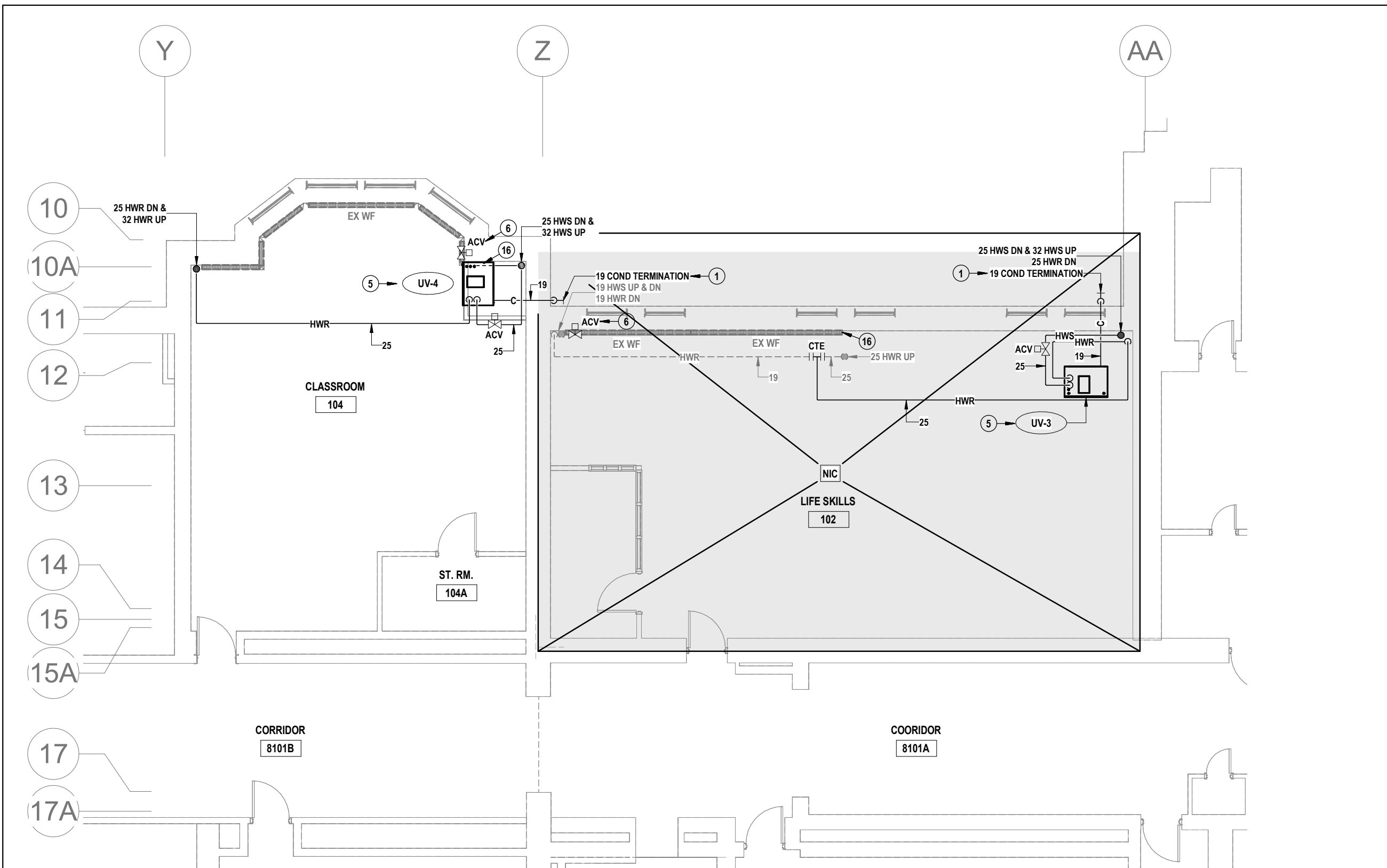
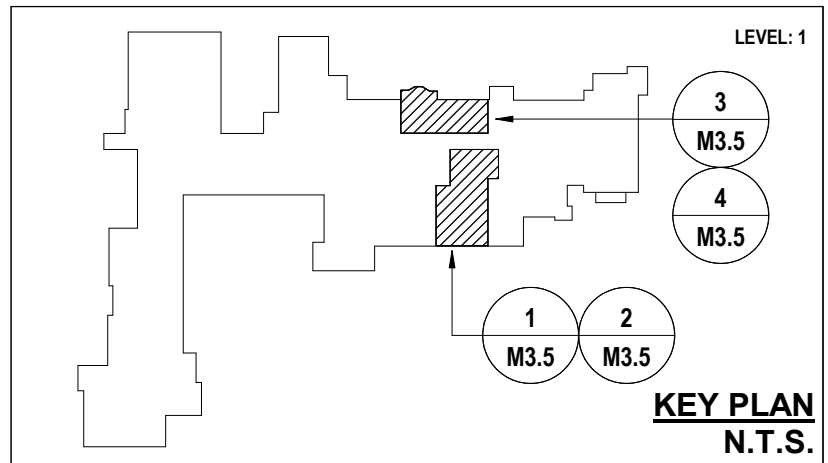
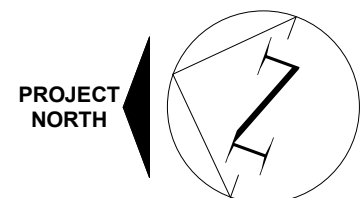
2 **TECH DESIGN 101 DUCTWORK RENOVATION PLAN**
M3.5 SCALE: 1:100



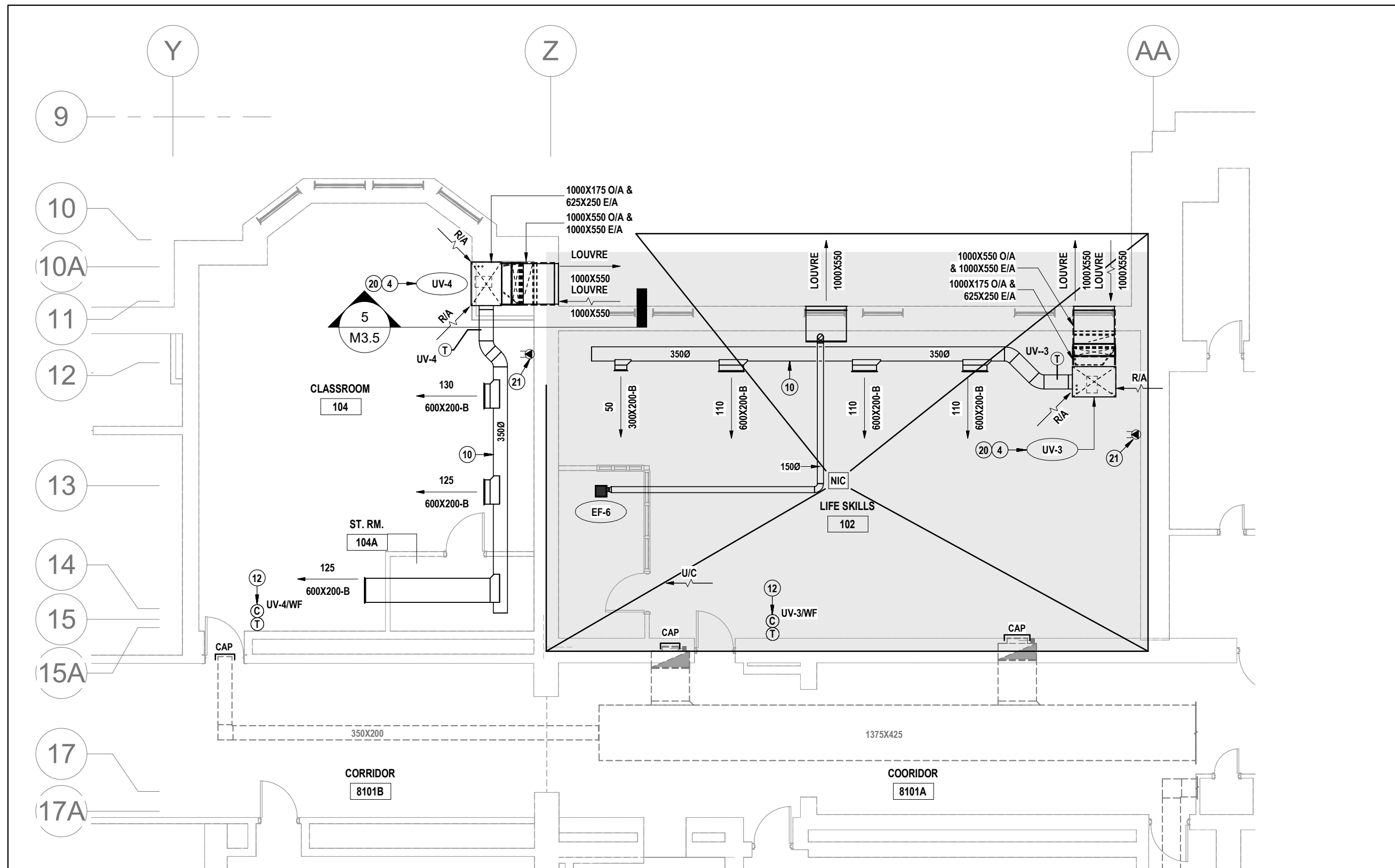
3 **UV-3/4 SECTION**
M3.5 SCALE: 1:100

- NOTES FOR THIS SHEET**
- TERMINATE CONDENSATE DRAIN AT EXTERIOR WALL ACCORDING TO DETAIL.
 - PROVIDE CONDENSATE DRAIN C/W TRAP (NOT SHOWN) FOR AHU & DRAIN TO ADJACENT FLOOR DRAIN. DRAIN SHALL BE SIZED ACCORDING TO MANUFACTURER RECOMMENDATIONS & TRAP SHALL BE SIZED TO SUIT FAN STATIC PRESSURE.
 - PROVIDE HWS / HWR CONNECTIONS TO HVAC-4 & P-15 ACCORDING TO DETAIL.
 - PROVIDE FLEXIBLE DUCT CONNECTORS AT ALL DUCT CONNECTIONS.
 - PROVIDE PIPING CONNECTIONS ACCORDING TO SCHEMATIC.
 - PROVIDE BAS DDC ACV & CBV FOR EXISTING WALL FIN. REFER TO DETAIL. CONFIRM EXACT LOCATION OF EXISTING VALVE ON SITE.
 - PROVIDE BAS DDC ACTUATORS FOR EX UV DAMPERS. O/A DAMPER SHALL FAIL CLOSED & R/A DAMPER SHALL FAIL OPEN.
 - PROVIDE BAS DDC CONTROL OF EQUIPMENT ACCORDING TO SPEC. PROVIDE NECESSARY WIRING, TRANSFORMERS, DEVICES, CONTROLLERS, SENSORS, ETC.
 - PROVIDE BAS DDC ACV C/W PIPING CONNECTIONS TO EX UV. INSTALL ACCORDING TO DETAIL.
 - ROUTE DUCTWORK BELOW CEILING SPACE.
 - PROVIDE DDC BAS TEMPERATURE SENSOR.
 - PROVIDE DDC BAS SPACE TEMPERATURE & CARBON DIOXIDE SENSORS IN THIS APPROXIMATE LOCATION C/W ALL REQUIRED DDC CONTROLS, WIRING ETC.
 - PROVIDE THERMAL INSULATION FOR INTERIOR PORTION OF DUCT RISER & FOR ALL DUCTWORK WITHIN 2.4M OF EXTERIOR TERMINATION.
 - OFFSET & TRANSITION DUCT AROUND OBSTRUCTION. CONTRACTOR TO DETERMINE REQUIRED DUCT ELEVATIONS.
 - ROUTE HWS/R PIPING IN LOCATION OF DEMOLISHED PIPING.
 - PROVIDE END CAP TO SUIT MODIFIED EXISTING ENCLOSURE.
 - SUSPEND FAN COIL UNIT AT MAX HEIGHT BELOW FLOOR SLAB / ROOF C/W KINETICS NPS SERIES VIBRATION ISOLATION PADS AT ALL SUPPORT POINTS. PADS SHALL BE SELECTED BY MANUFACTURER TO SUIT APPLICATION.
 - PROVIDE BAS MOTORIZED DAMPER. REFER TO SPEC FOR TYPE.
 - SIZE REFRIGERANT PIPING ACCORDING TO MANUFACTURER REQUIREMENTS.
 - PROVIDE FACTORY ACOUSTIC PLENUM AT UV DISCHARGE. CONNECT DUCTWORK TO PLENUM.
 - PROVIDE 120V POWER SOURCE C/W WIRING & TRANSFORMER FOR LOW VOLTAGE CONTROL DEVICES / SENSORS. REFER ALSO TO ELECTRICAL DRAWINGS.
 - REFER TO 'PROJECT A' FOR CONTINUATION.
 - REFER TO 'PROJECT C' FOR CONTINUATION.

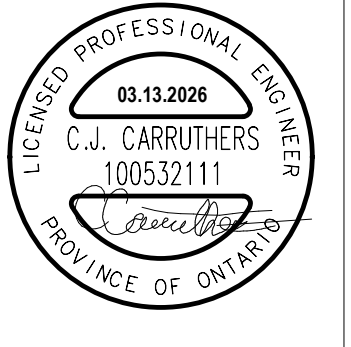
- GENERAL NOTES**
- THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 01 35 43, "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.
 - PROVIDE AUTOMATIC AIR VENTS IN PIPING AT HIGH POINTS & WHERE AIR CAN BE TRAPPED. PROVIDE DRAIN VALVES AT ALL LOW POINTS.
 - PROVIDE CONNECTIONS TO EQUIPMENT ACCORDING TO RELEVANT PIPING SCHEMATICS.



3 **LIFE SKILLS 104 & 102 PIPING RENOVATION PLAN**
M3.5 SCALE: 1:100



4 **LIFE SKILLS 104 & 102 DUCTWORK RENOVATION PLAN**
M3.5 SCALE: 1:100



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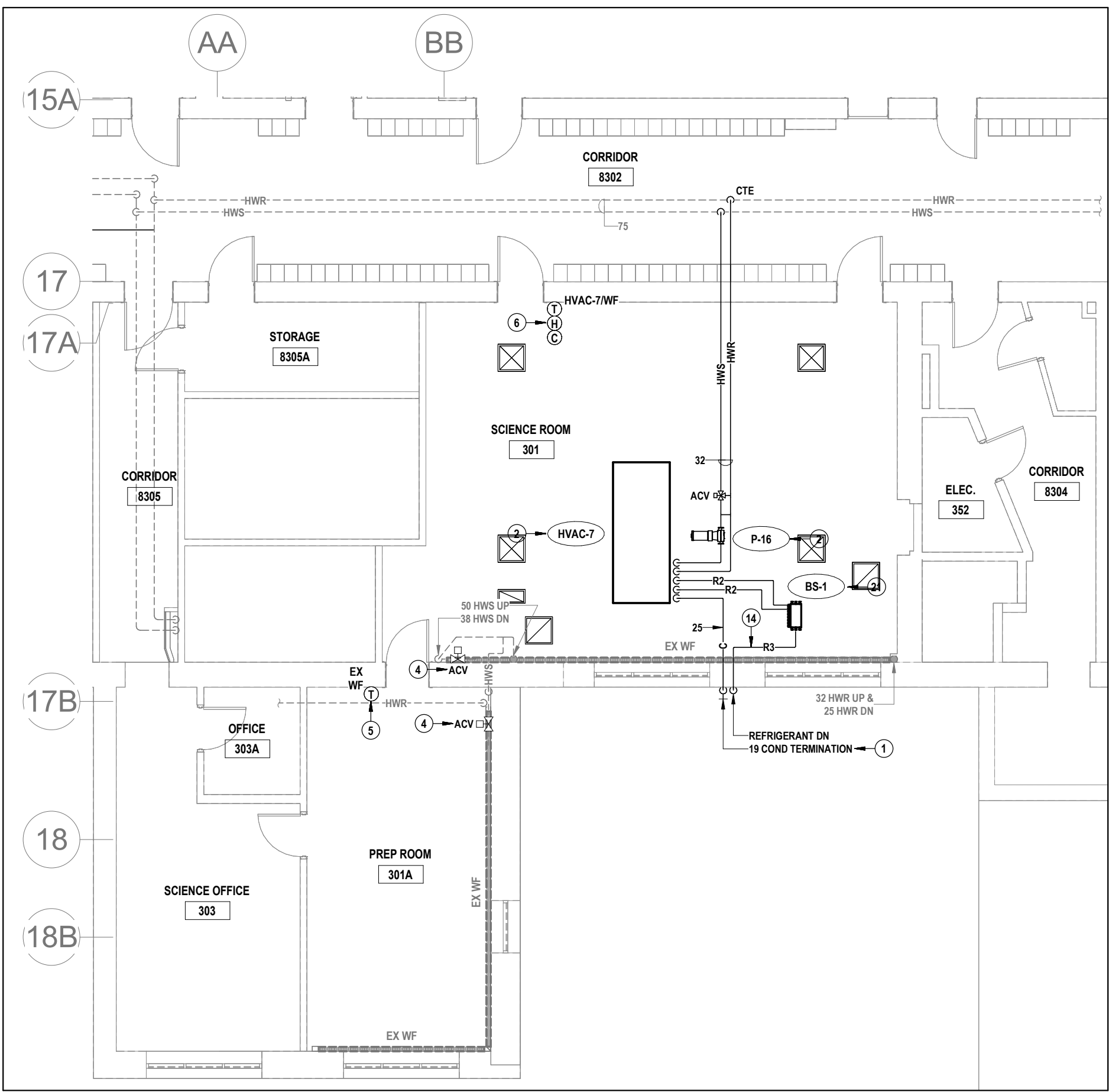
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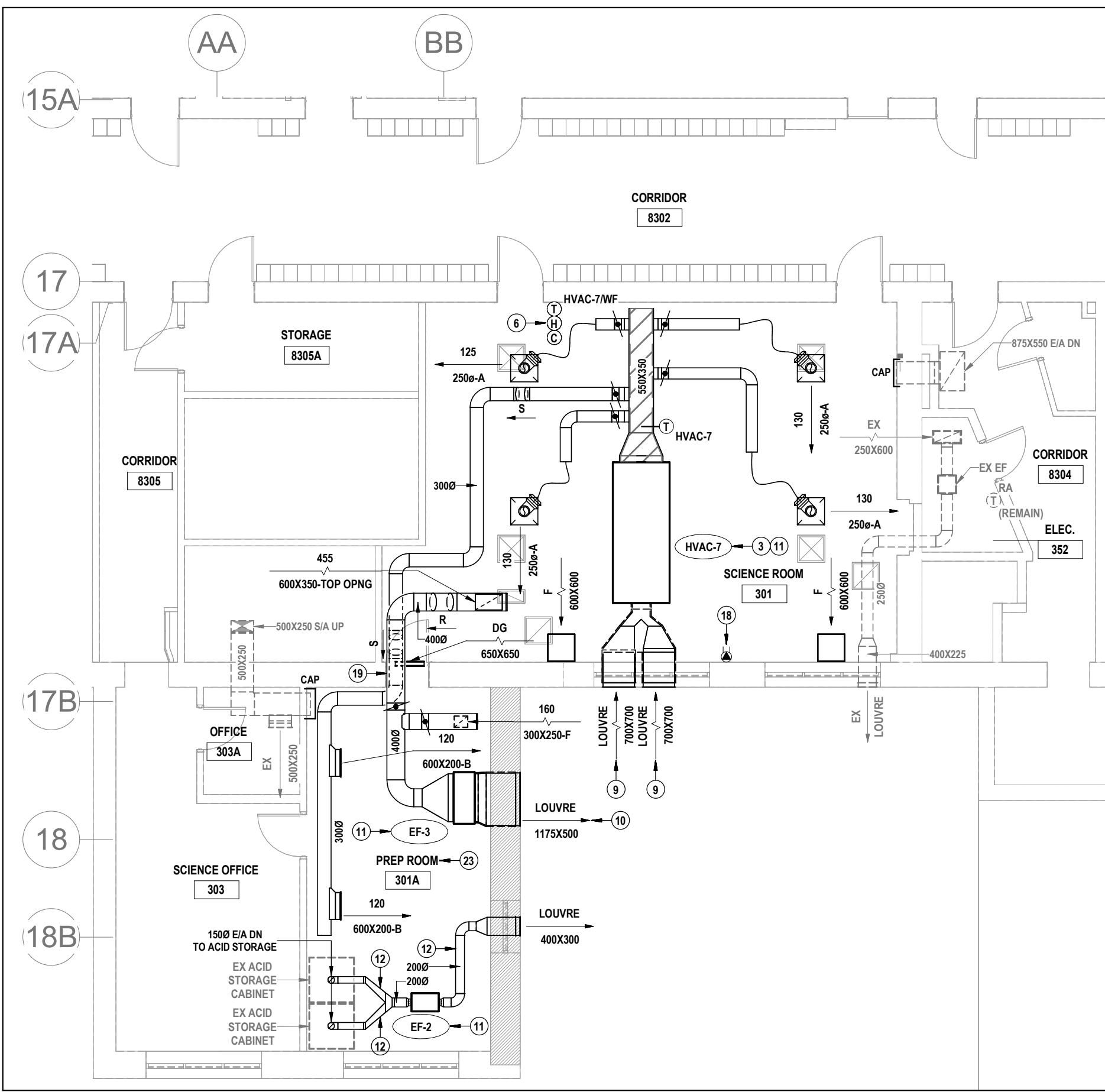
Galt Collegiate Institute
BOILER REPLACEMENT AND HAV UPGRADES - PHASE 2
PROJECT B - LEVEL 1 CLASSROOM RENOVATION PLANS

Project No.: 23053
Drawn By: A.L.G.
Checked By: C.J.C.

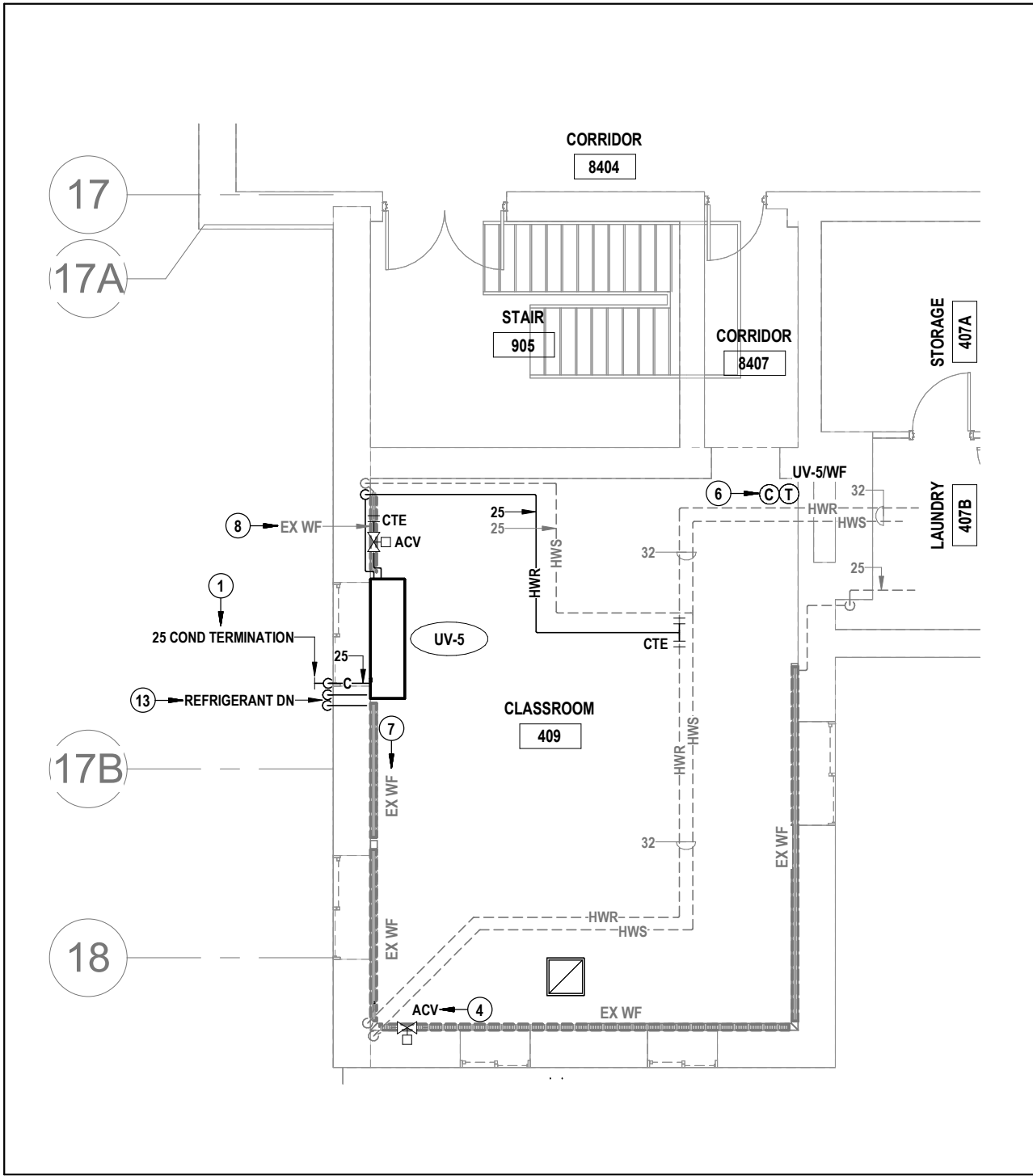
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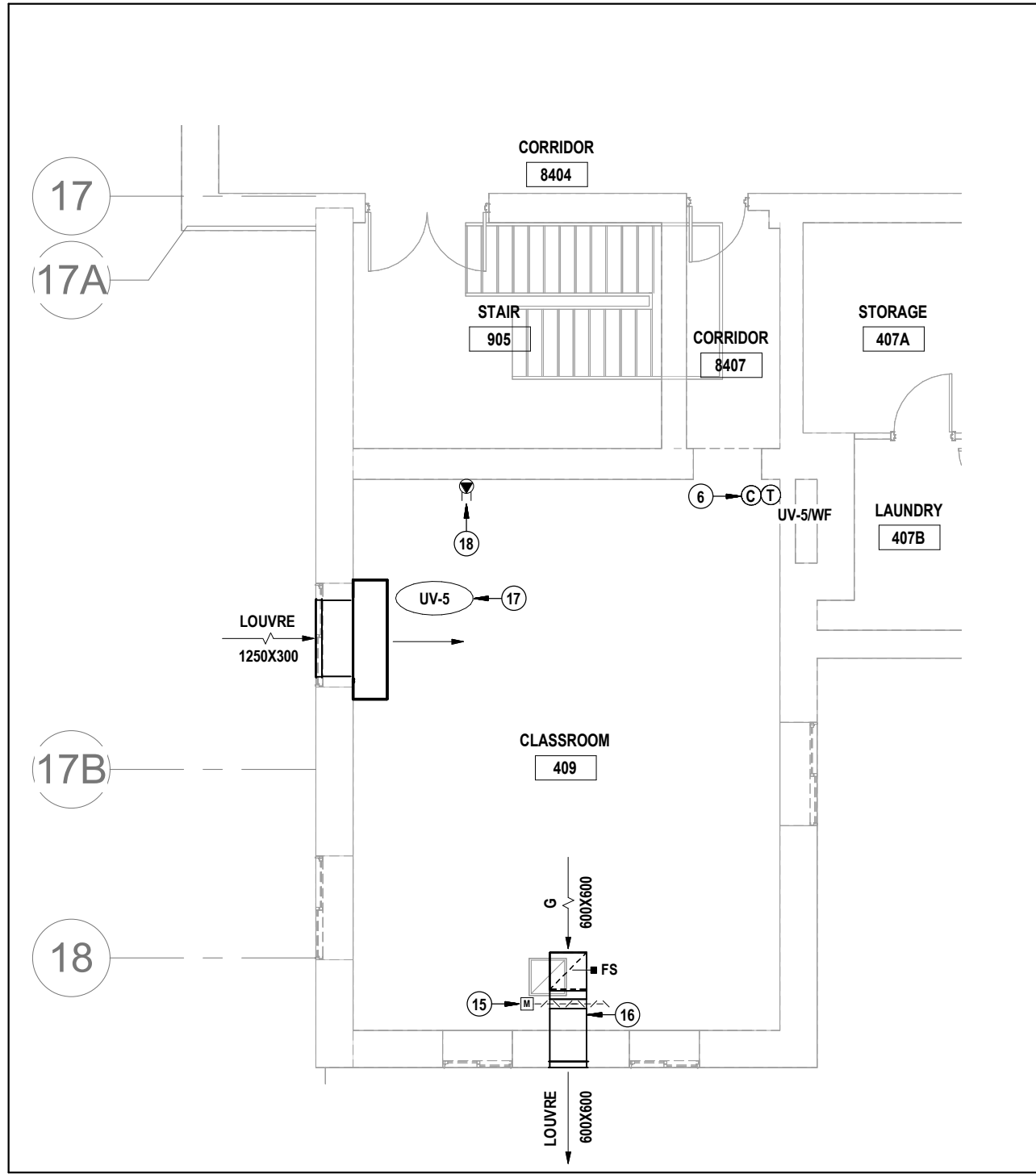
1 SCIENCE ROOM 301 PIPING RENOVATION PLAN
M3.6 SCALE: 1:100



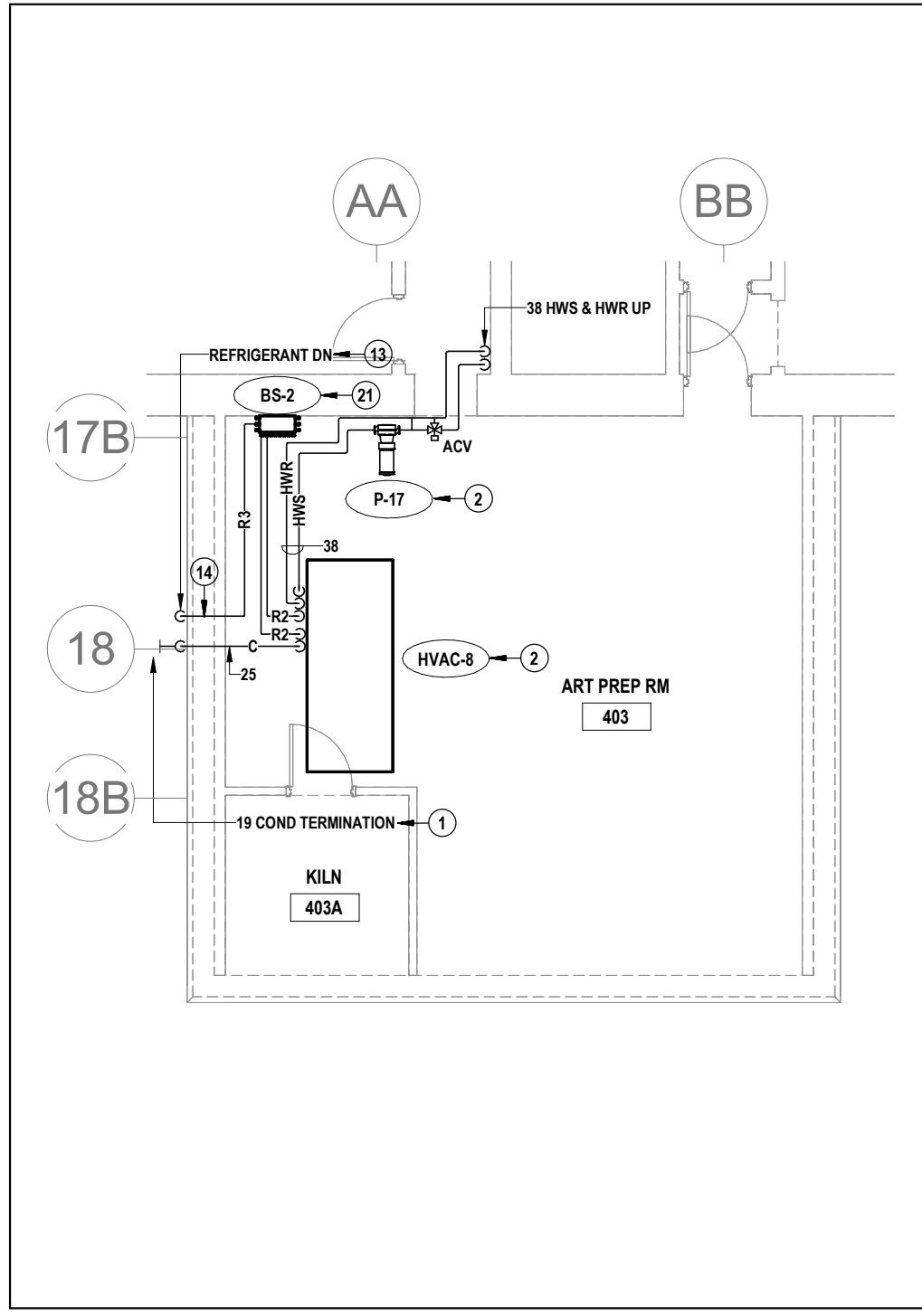
2 SCIENCE ROOM 301 DUCTWORK RENOVATION PLAN
M3.6 SCALE: 1:100



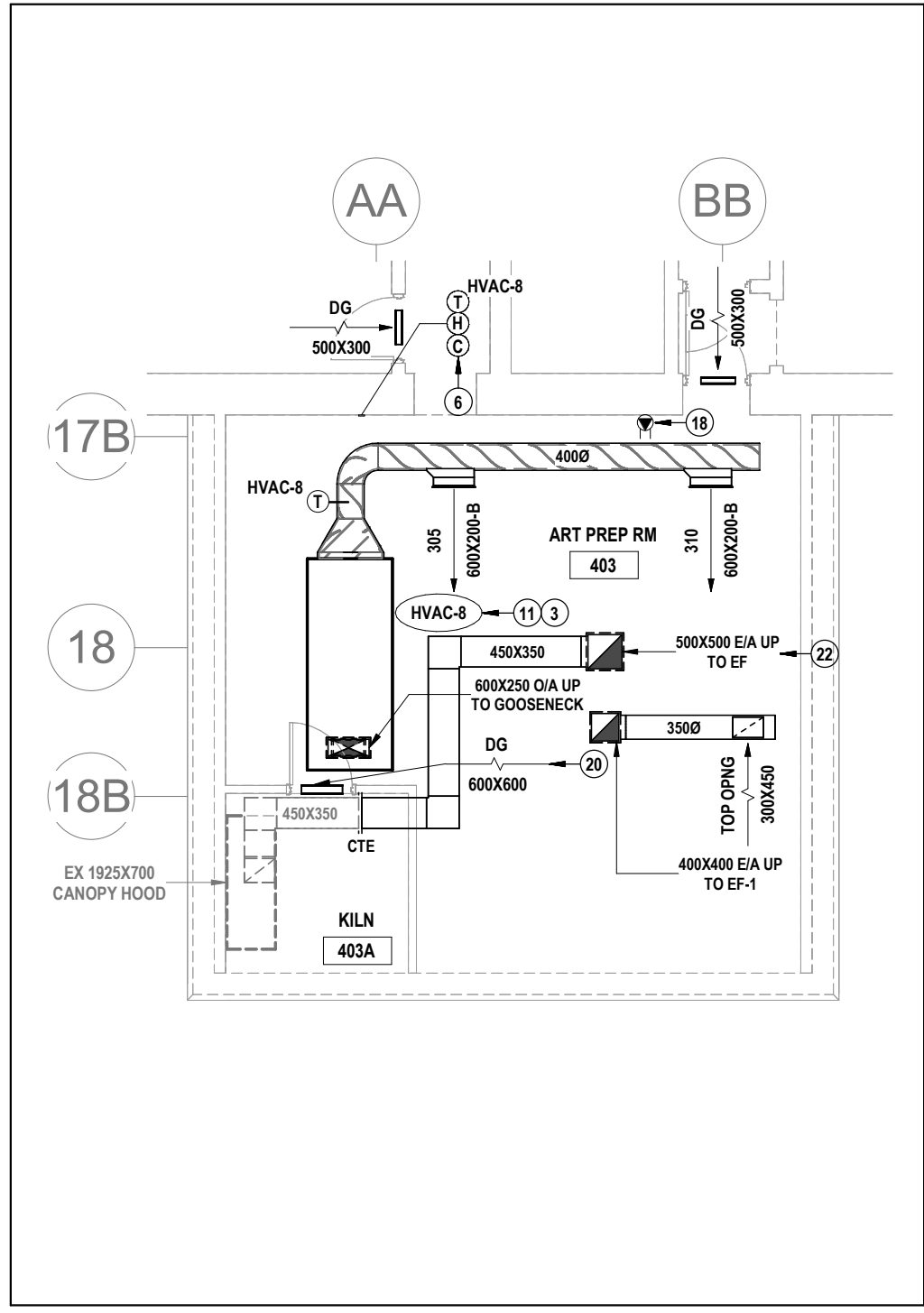
3 CLASSROOM 409 PIPING RENOVATION PLAN
M3.6 SCALE: 1:100



4 CLASSROOM 409 DUCTWORK RENOVATION PLAN
M3.6 SCALE: 1:100



5 ART PREP ROOM 403 PIPING RENOVATION PLAN
M3.6 SCALE: 1:100



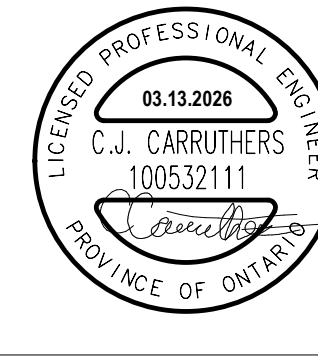
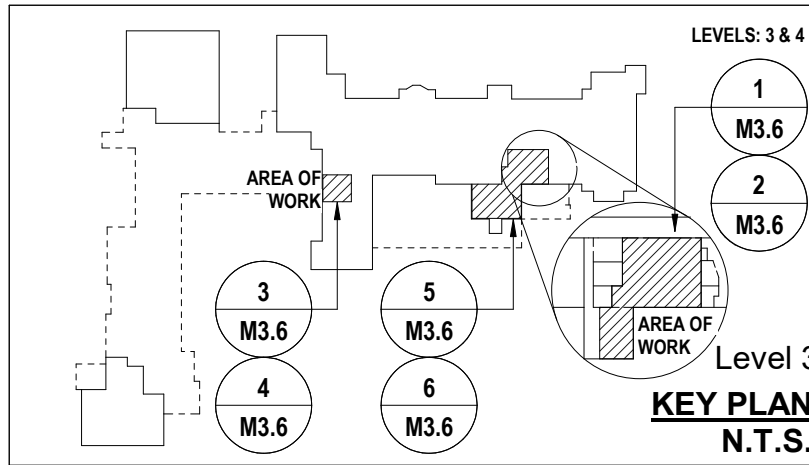
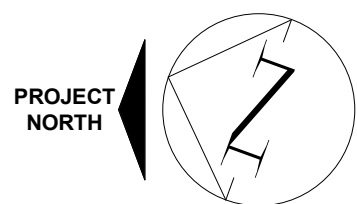
6 ART PREP ROOM 403 DUCTWORK RENOVATION PLAN
M3.6 SCALE: 1:100

NOTES FOR THIS SHEET

- 1 → TERMINATE CONDENSATE DRAIN AT EXTERIOR WALL ACCORDING TO DETAIL.
- 2 → PROVIDE HWS / HWR CONNECTIONS TO HVAC-7/HVAC-8 & P-16/P-17 ACCORDING TO DETAIL.
- 3 → PROVIDE FLEXIBLE DUCT CONNECTORS AT ALL DUCT CONNECTIONS.
- 4 → PROVIDE BAS DDC ACV & CBV FOR EXISTING WALL FIN. REFER TO DETAIL. CONFIRM EXACT LOCATION OF EXISTING VALVE ON SITE.
- 5 → PROVIDE DDC BAS TEMPERATURE SENSOR.
- 6 → PROVIDE DDC BAS SPACE TEMPERATURE, HUMIDITY & CARBON DIOXIDE SENSORS (AS APPLICABLE) IN THIS APPROXIMATE LOCATION C/W ALL REQUIRED DDC CONTROLS, WIRING ETC.
- 7 → PROVIDE END CAP TO SUIT MODIFIED EXISTING ENCLOSURE.
- 8 → RE-ROUTE HWR BRANCH BACK TO NEW RISER WITHIN EXISTING WALLFIN CABINET.
- 9 → LOUVRE SIZE TO MATCH SIZE OF EXISTING WINDOW PANE. CONFIRM EXACT SIZE PRIOR TO ORDERING.
- 10 → LOUVRE WIDTH TO MATCH WIDTH OF PREVIOUSLY REMOVED WINDOW TO SUIT EXISTING LINTEL. CONFIRM EXACT SIZE PRIOR TO ORDERING.
- 11 → SUSPEND FAN / FAN COIL UNIT AT MAX HEIGHT BELOW FLOOR SLAB / ROOF C/W KINETICS NPS SERIES VIBRATION ISOLATION PADS AT ALL SUPPORT POINTS. PADS SHALL BE SELECTED BY MANUFACTURER TO SUIT APPLICATION.
- 12 → PROVIDE STAINLESS STEEL DUCTWORK C/W WELDED JOINTS & LONGITUDINAL SEAMS ACCORDING TO SMACNA ACCEPTED INDUSTRY PRACTICE FOR INDUSTRIAL DUCT CONSTRUCTION FOR CLASS 5 AIR. PROVIDE ACCESS DOORS TO PERMIT CLEANING & INSPECTIONS OF ENTIRE DUCT SYSTEM. INSTALL ACCESS DOORS ON TOP OR SIDES OF DUCTWORK ONLY.
- 13 → SIZE REFRIGERANT PIPING ACCORDING TO MANUFACTURER REQUIREMENTS.
- 14 → REFER TO VRF PIPING & WIRING SCHEMATICS FOR ADDITIONAL INFO. PROVIDE PIPING & WIRING ACCORDING TO SCHEMATIC & MANUFACTURER REQUIREMENTS. CONFIRM PIPING LENGTHS PRIOR TO ORDERING VRF EQUIPMENT.
- 15 → PROVIDE BAS MOTORIZED DAMPER. REFER TO SPEC FOR TYPE.
- 16 → INSTALL DUCTWORK WITHIN ATTIC SPACE ABOVE CEILING.
- 17 → INSTALL UV ACCORDING TO DETAIL.
- 18 → PROVIDE 120V POWER SOURCE C/W WIRING & TRANSFORMER FOR LOW VOLTAGE CONTROL DEVICES / SENSORS. REFER ALSO TO ELECTRICAL DRAWINGS.
- 19 → STACK DUCTS OVER DOOR.
- 20 → PROVIDE NEW DOOR GRILLE IN PLACE OF REMOVED.
- 21 → INSTALL VRF BRANCH SELECTOR BOX AT MAX HEIGHT.
- 22 → INTERLOCK KILN WITH EXHAUST FAN SUCH THAT KILN CANNOT RUN UNLESS FAN IS ENERGIZED. REFER TO ELECTRICAL.
- 23 → THE INTENT FOR THE DUCTWORK IS TO BE INSTALLED BELOW THE CEILING.

GENERAL NOTES

- THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 01 35 43, "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.
- PROVIDE AUTOMATIC AIR VENTS IN PIPING AT HIGH POINTS & WHERE AIR CAN BE TRAPPED. PROVIDE DRAIN VALVES AT ALL LOW POINTS.
- PROVIDE CONNECTIONS TO EQUIPMENT ACCORDING TO RELEVANT PIPING SCHEMATICS.



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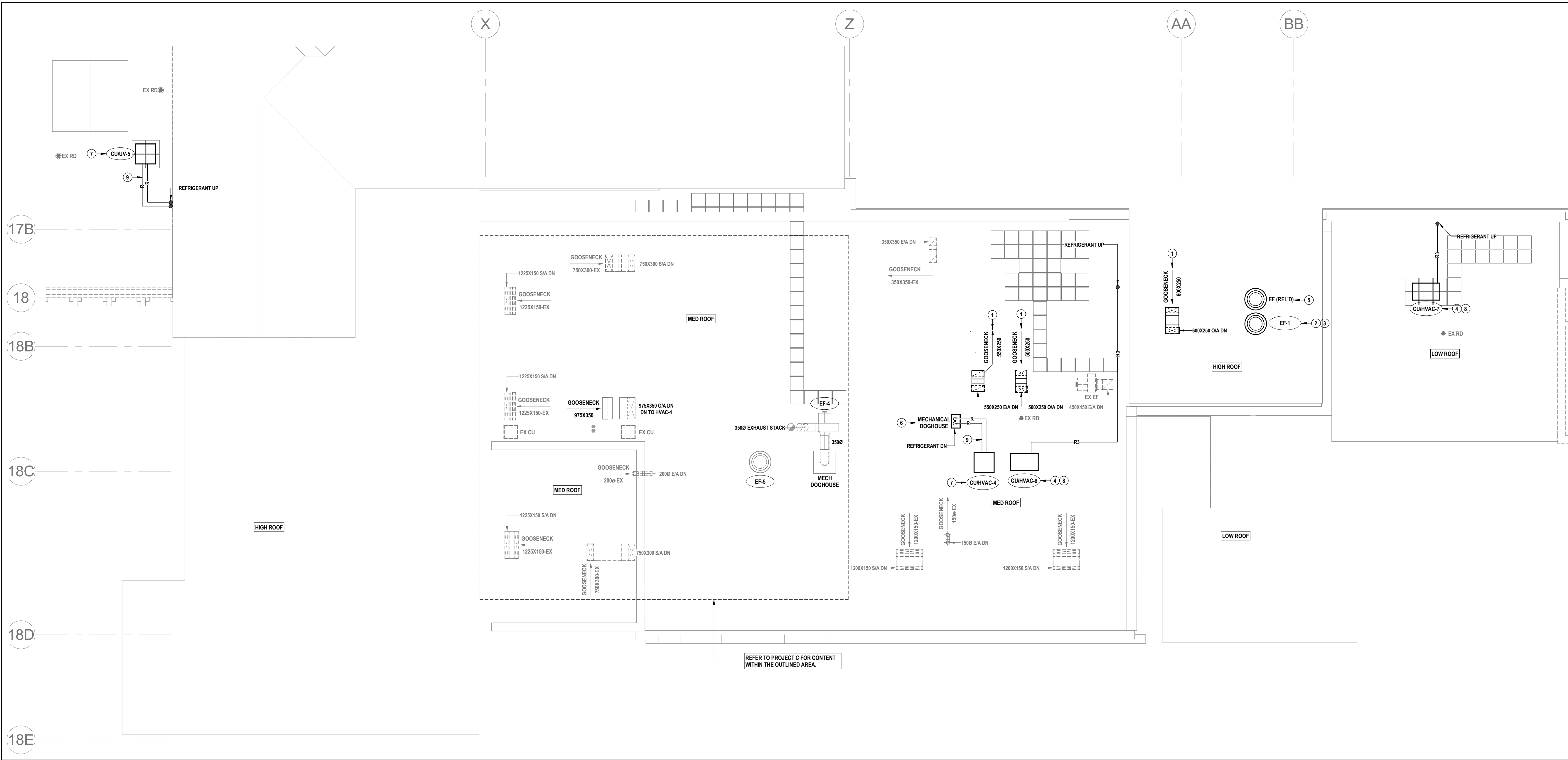
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Galt Collegiate Institute
BOILER REPLACEMENT AND HAV UPGRADES - PHASE 2
PROJECT B - LEVEL 3&4 CLASSROOM RENOVATION PLANS

Project No.: 23053
Checked By: C.J.C.
Drawn By: A.L.G.

M3.6



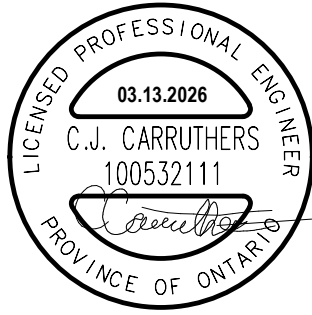
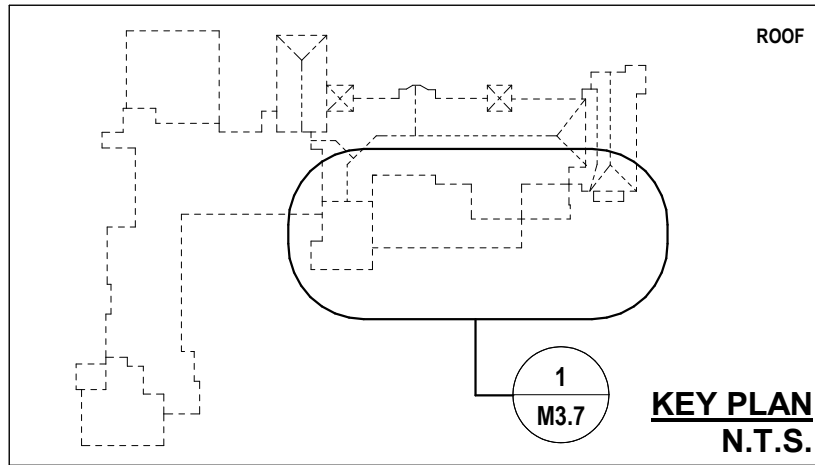
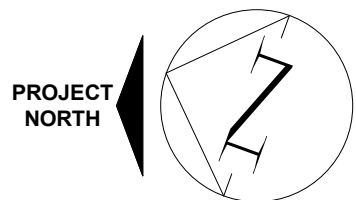
1 ROOF RENOVATION PLAN
M3.7 SCALE: 1:100

NOTES FOR THIS SHEET

- 1 PROVIDE GOOSENECK ACCORDING TO DETAIL.
- 2 MAINTAIN 6.0M CLEARANCE FROM ROOF EDGE.
- 3 MOUNT UNIT ON ROOF CURB ACCORDING TO DETAIL.
- 4 PROVIDE CONTROL & REFRIGERANT PIPING CONNECTIONS TO CU ACCORDING TO VRF WIRING & PIPING SCHEMATICS. PROVIDE POWER CONNECTIONS ACCORDING TO MANUFACTURER REQUIREMENTS.
- 5 REBALANCE EXISTING EF FAN TO 1850 CFM (870 L/S).
- 6 PROVIDE MECHANICAL DOGHOUSE. REFER TO DETAIL.
- 7 MOUNT CONDENSING UNIT ON CONCRETE PAVER & SECURE WITH CONCRETE SCREWS. PROVIDE 50MM RIGID BOARD INSULATION BELOW PAVER. INSULATION SHALL BE SUITABLE FOR EXTERIOR USE & NOT DETERIORATE IN DIRECT SUNLIGHT.
- 8 INSTALL CONDENSING UNIT ON ROOF C/W ECOFOOT SUPPORT SYSTEM. INSTALL ACCORDING TO MANUFACTURER REQUIREMENTS.
- 9 SIZE REFRIGERANT PIPING ACCORDING TO MANUFACTURER REQUIREMENTS.

GENERAL NOTES FOR THIS SHEET

- THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 01 35 43 "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.



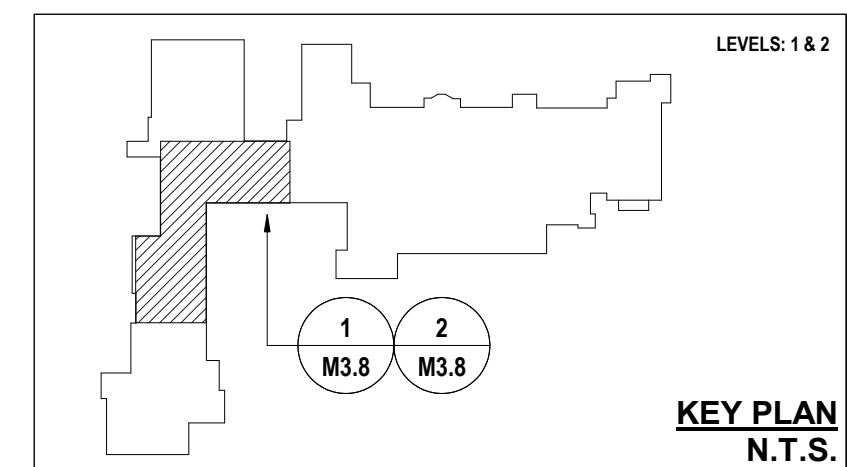
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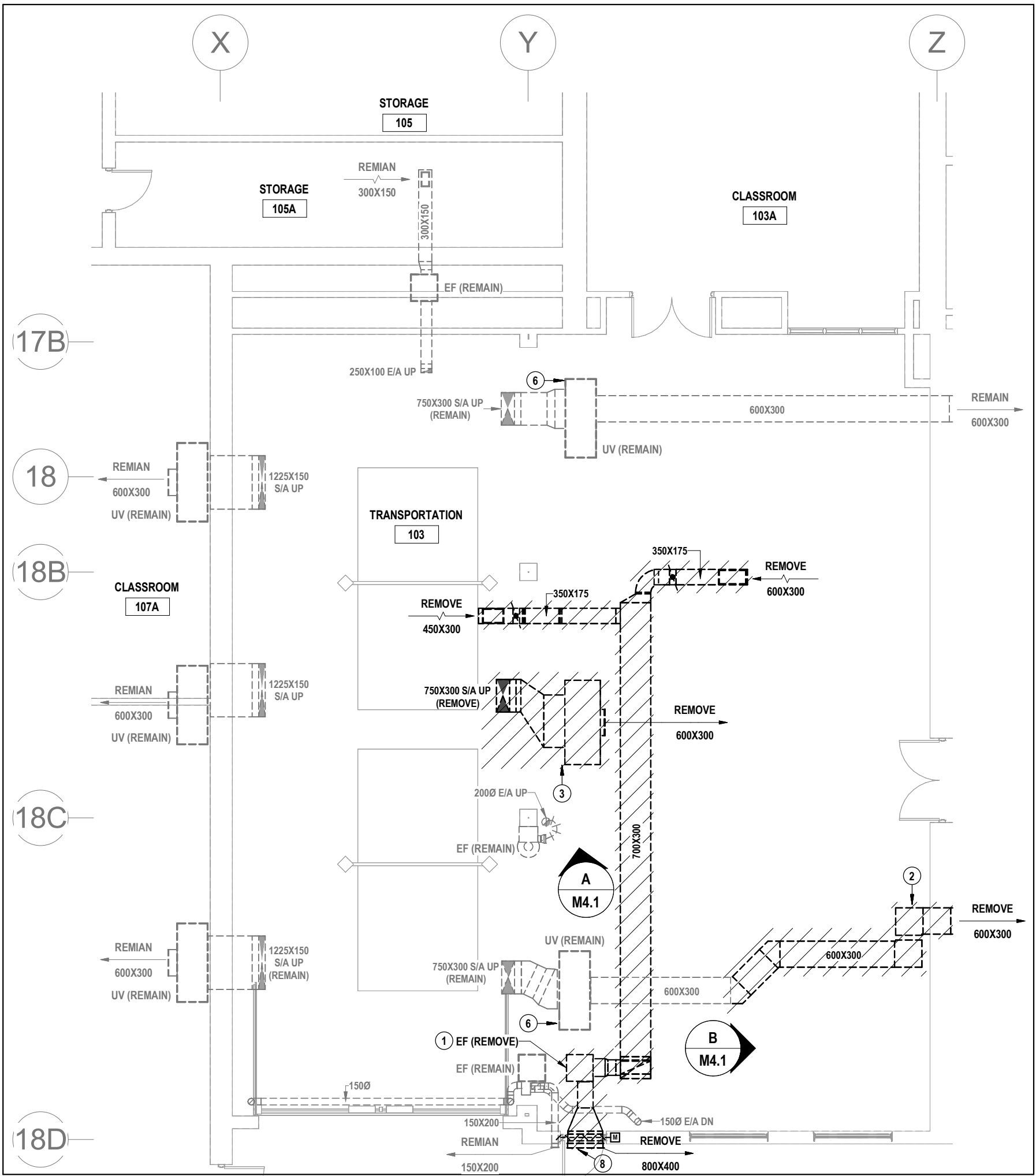


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PROJECT B - ROOF RENOVATION PLAN

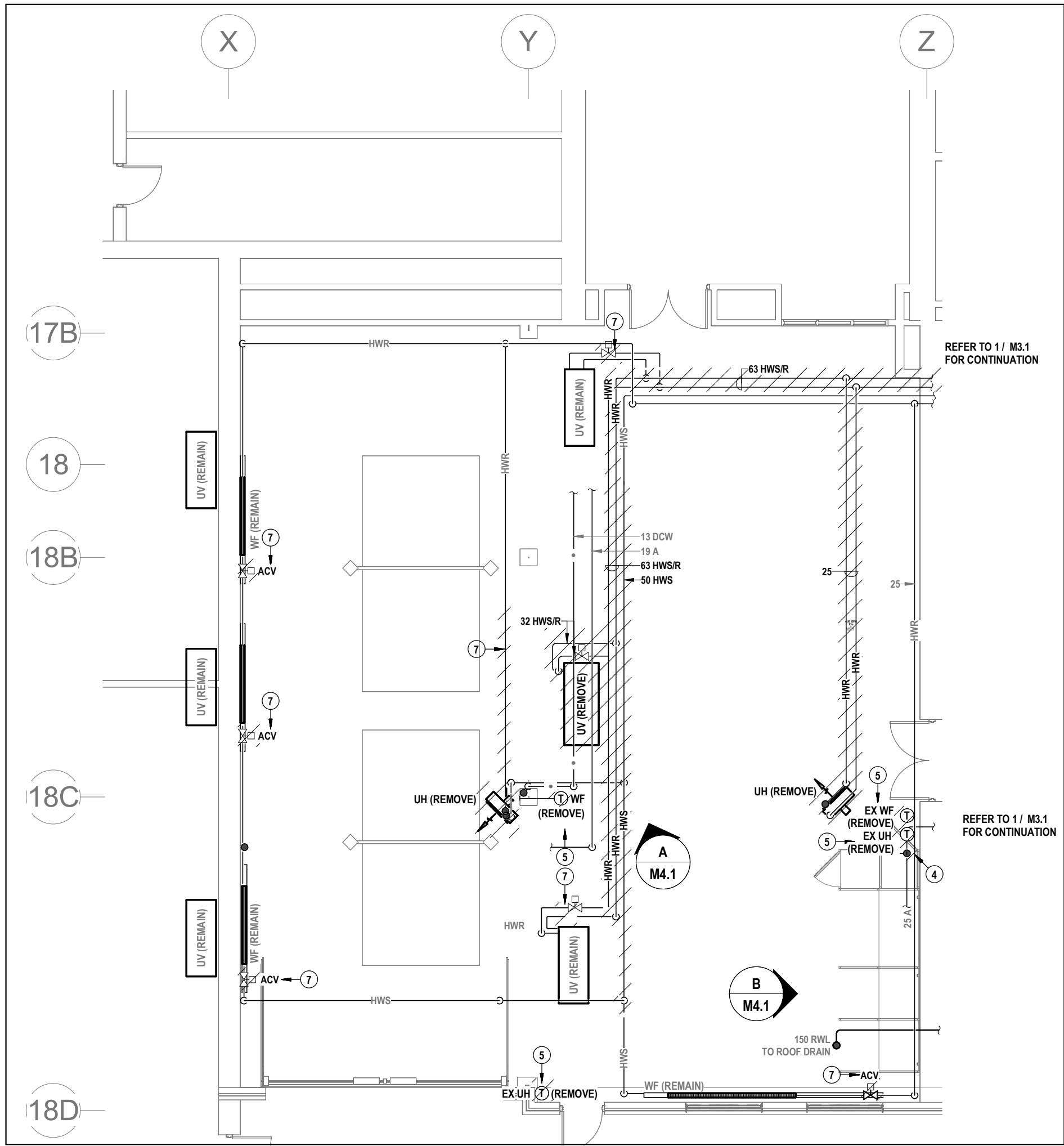
Project No.: 23053
Drawn By: A.L.G.
Checked By: C.J.C.

M3.7

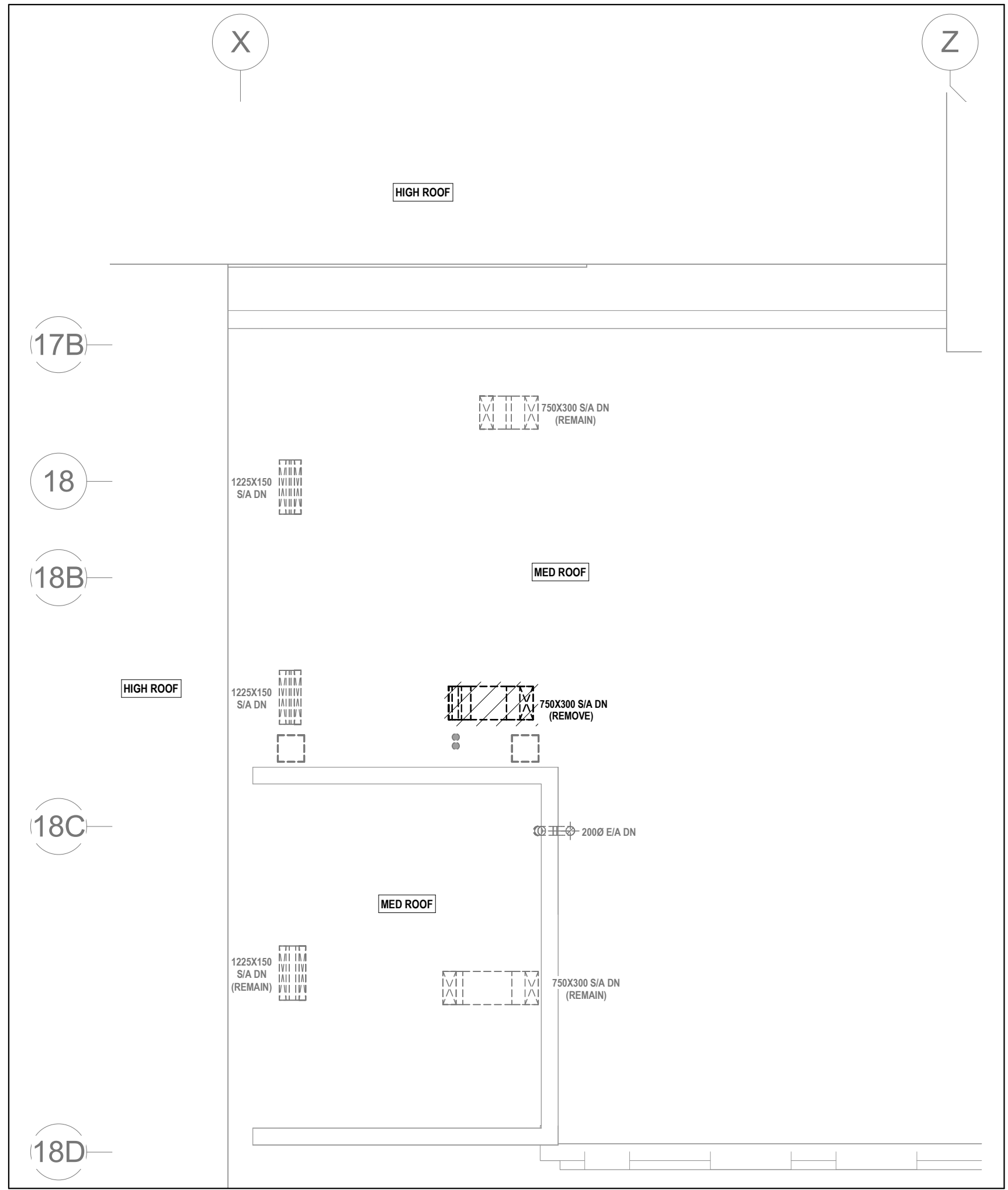




1 FIRST FLOOR TRANSPORTATION ROOM 103 HVAC DEMOLITION PLAN
M4.1 SCALE: 1:100



2 FIRST FLOOR TRANSPORTATION ROOM 103 PIPING DEMOLITION PLAN
M4.1 SCALE: 1:100



3 PARTIAL ROOF DEMOLITION PLAN
M4.1 SCALE: 1:100

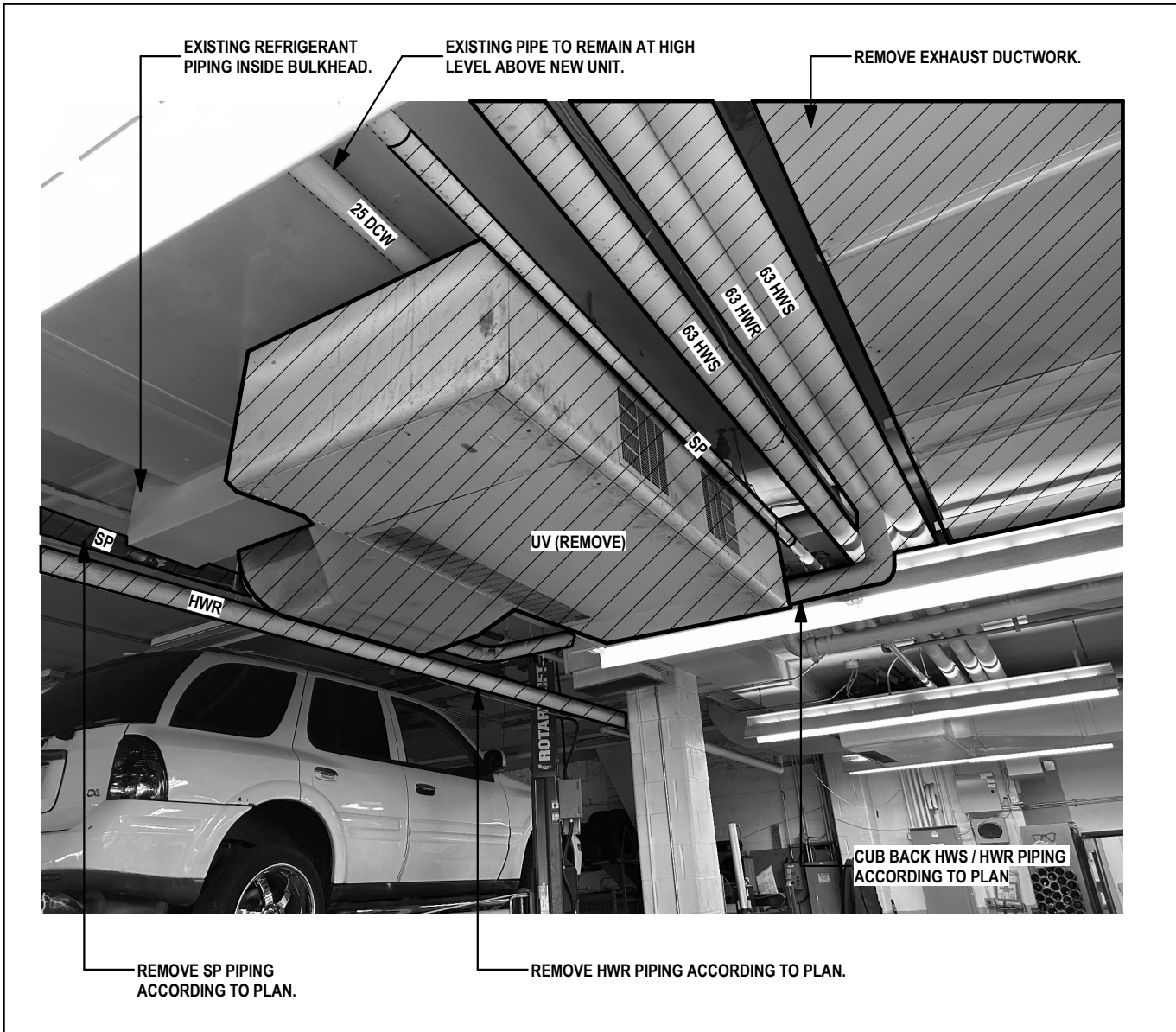


PHOTO DETAIL A: C-D-Photo Detail (UV)

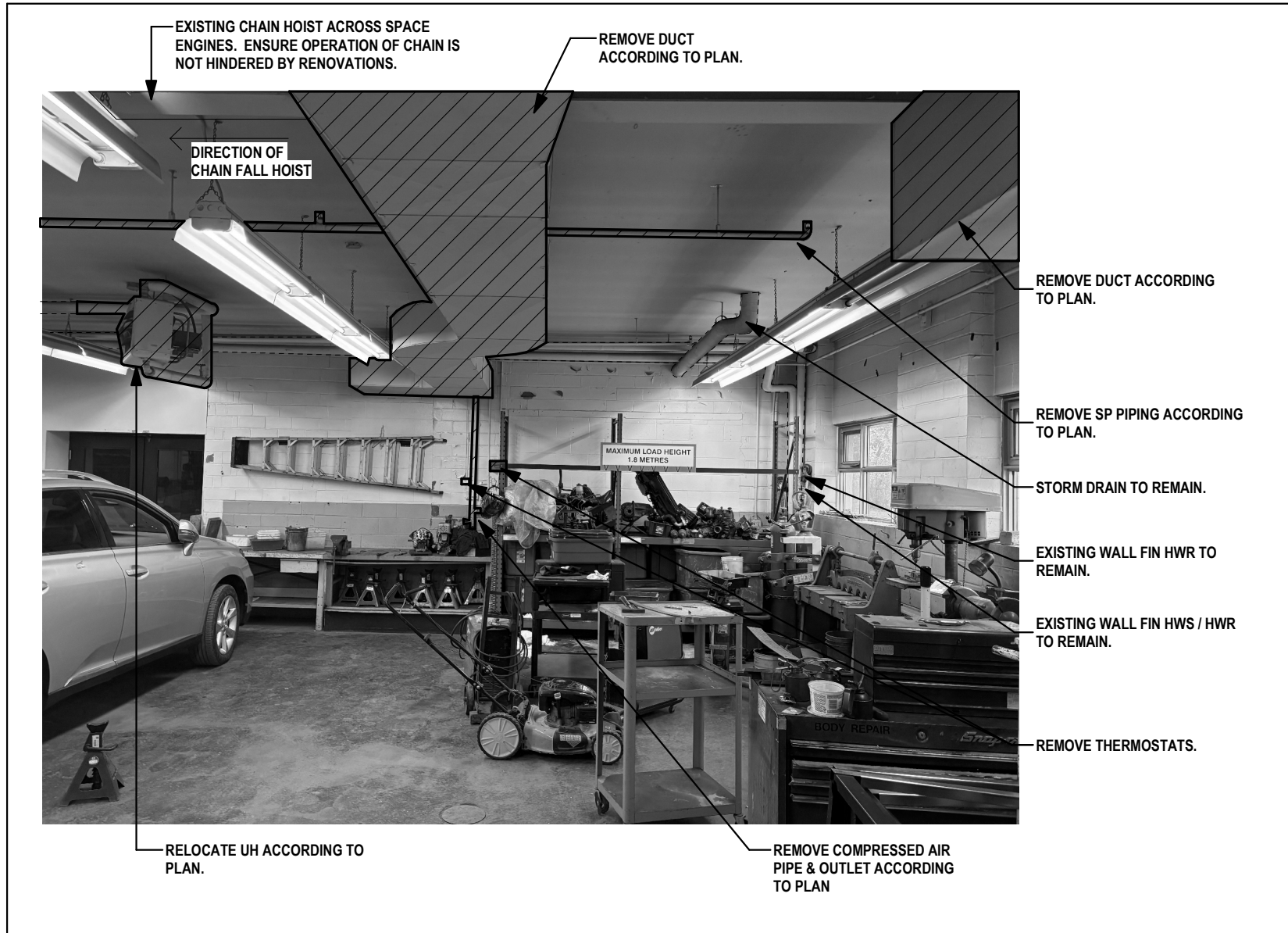


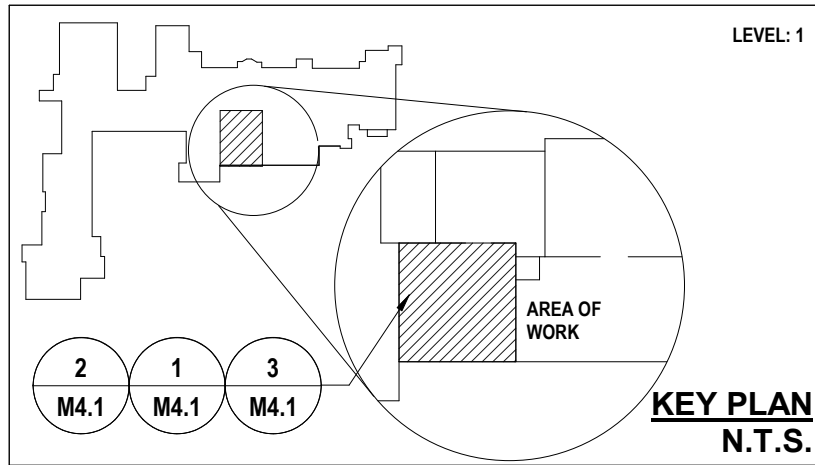
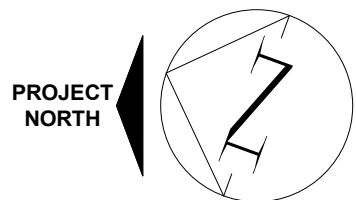
PHOTO DETAIL B: C-D-Photo Detail (Weld Booth)

GENERAL NOTES:

- THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 91 35 43, "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.
- REMOVE ALL REDUNDANT ACCESSIBLE PNEUMATIC TUBING BACK TO SOURCE & SOLDER / MECHANICALLY SEAL TO ENSURE NO LEAKS. REMOVE ACCESSIBLE BRANCH THAT IS NOT IN USE.

NOTES FOR THIS SHEET

- REMOVE FAN CW DUCT CONNECTIONS, POWER CONNECTIONS, SUPPORTS, ETC.
- REMOVE DUCTWORK AS NEEDED FOR REROUTING AROUND WELDING BOOTH & RELATED DUCTWORK AS PER RENOVATION PLANS. PATCH OPENING IN INTERIOR WALL RESULTING FROM REMOVAL TO MATCH EXISTING CONSTRUCTION.
- REMOVE EXISTING UNIT VENTILATOR CW PIPING CONNECTIONS, DUCT CONNECTIONS, POWER CONNECTIONS, PNEUMATIC CONTROLS, ACV, SUPPORTS, ETC. CUT BACK & CAP PNEUMATIC TUBING IN CONCEALED AREA (AS APPLICABLE).
- RELOCATE EXISTING COMPRESSED AIR OUTLET AS PER RENOVATION PLANS. CUT BACK AND CAP PIPING AS NEEDED.
- REMOVE THERMOSTAT CW ASSOCIATED WIRING, PNEUMATIC TUBING (AS APPLICABLE), ETC. CUT BACK & CAP PNEUMATIC TUBING IN CONCEALED AREA.
- REMOVE PNEUMATIC CONTROLS ASSOCIATED WITH EQUIPMENT CW TUBING, DEVICES, ETC. CUT BACK & CAP PNEUMATIC TUBING IN CONCEALED AREA.
- REMOVE EXISTING PNEUMATIC CONTROL VALVE CW ASSOCIATED TUBING, DEVICES, ETC. CUT BACK & CAP PNEUMATIC TUBING IN CONCEALED AREA.
- REMOVE LOUVRE CW DUCT CONNECTIONS, MOTORIZED DAMPER, PNEUMATIC CONTROLS, ETC. CUT BACK AND CAP PNEUMATIC TUBING IN CONCEALED LOCATION. PATCH OPENING IN EXTERIOR WALL RESULTING FROM LOUVRE REMOVAL TO MATCH EXISTING CONSTRUCTION OR AS OTHERWISE SPECIFIED IN ARCHITECTURAL DOCUMENTS.



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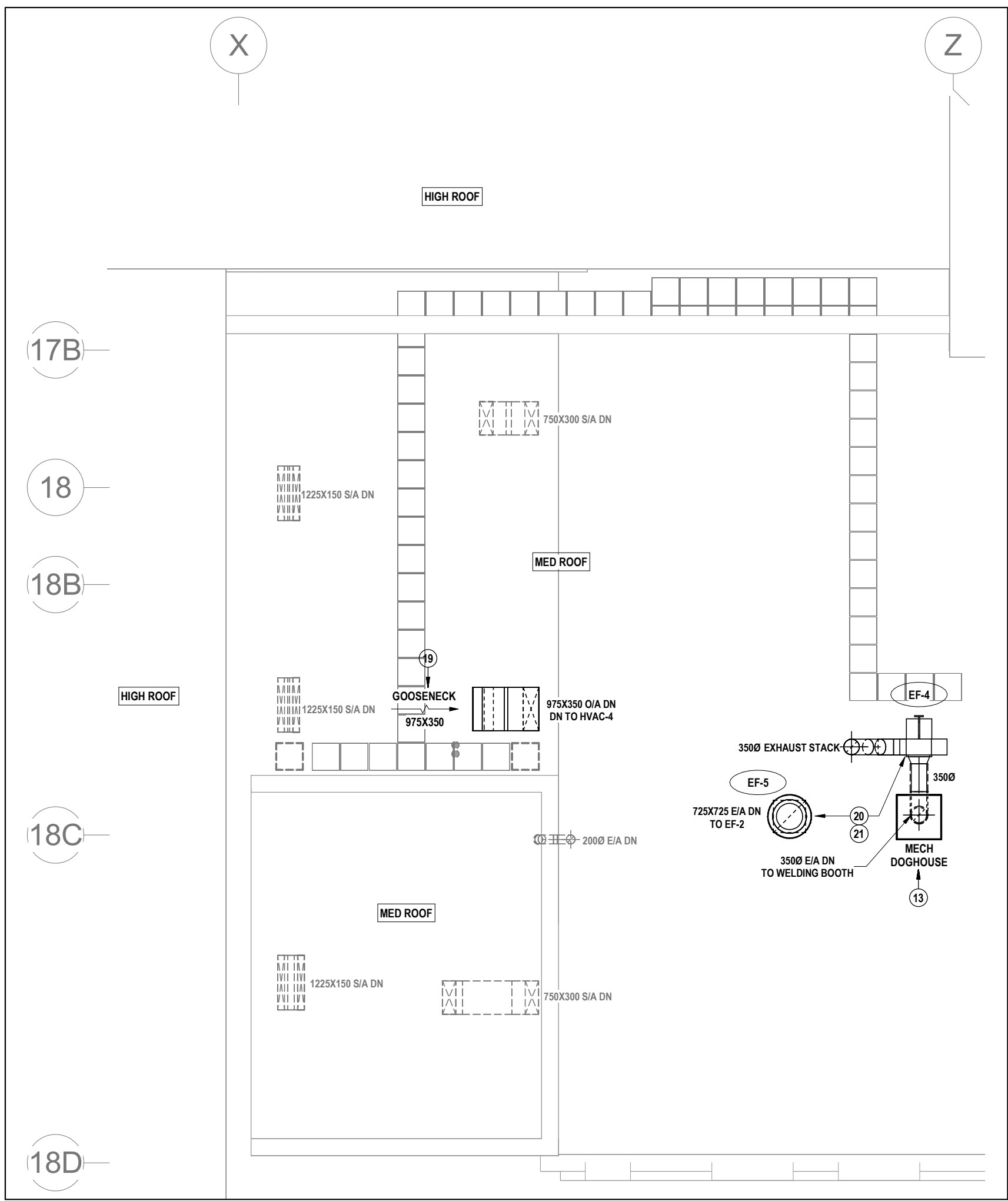
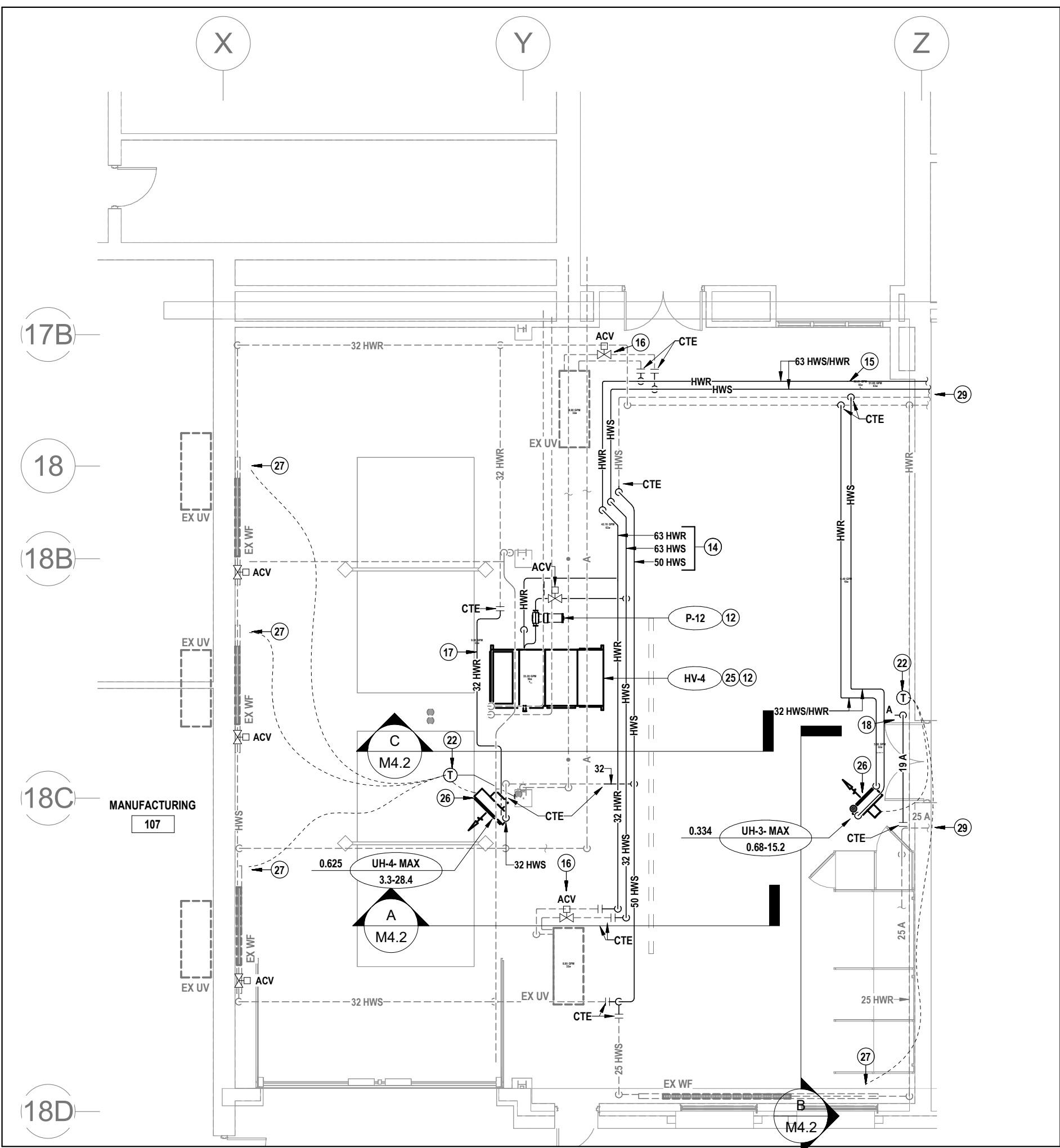
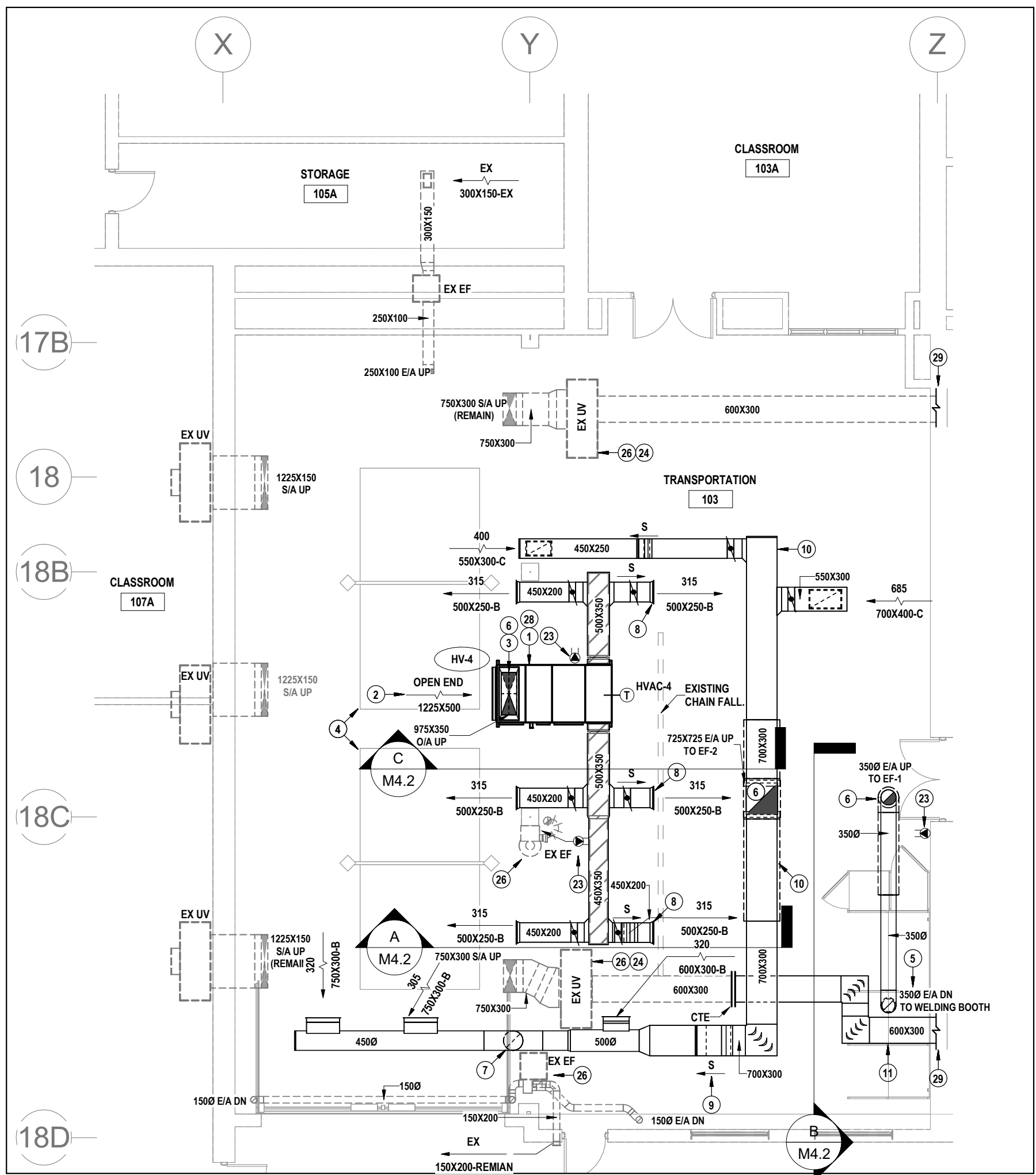
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Galt Collegiate Institute
BOILER REPLACEMENT AND HAV UPGRADES - PHASE 2
PROJECT C - MECHANICAL DEMOLITION PLANS

Checked By: C.J.C.
Drawn By: M.R.C.
Project No.: 23053

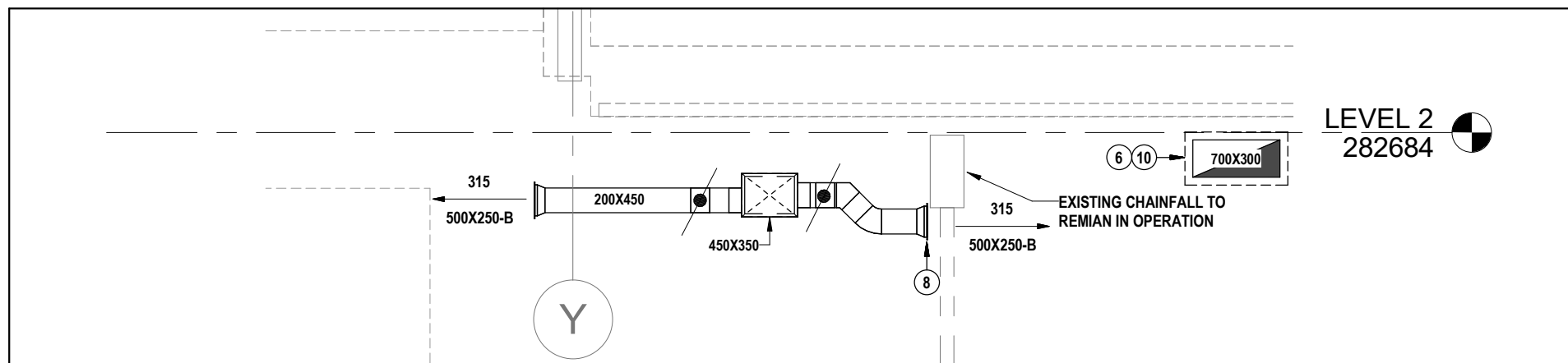
M4.1



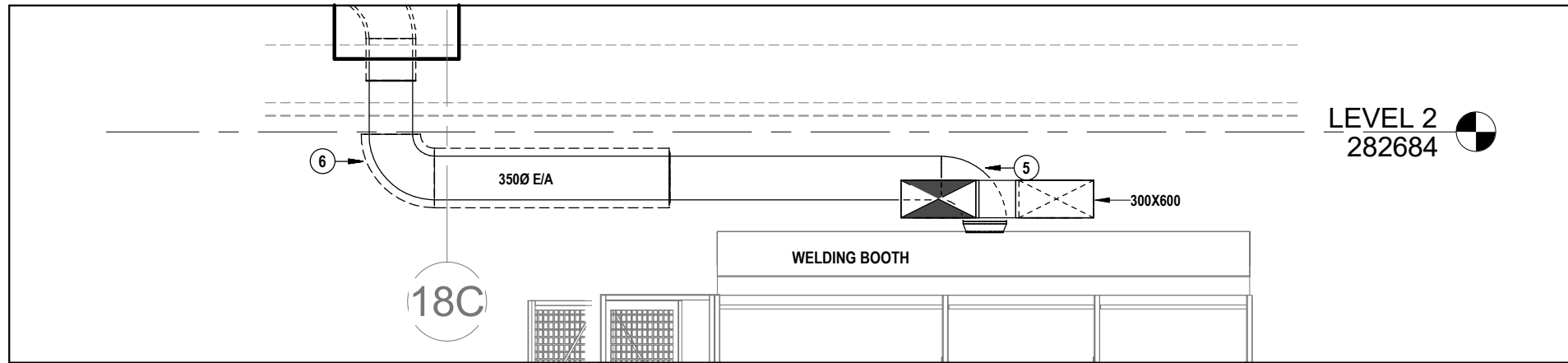
1 FIRST FLOOR TRANSPORTATION ROOM 103 HVAC RENOVATION PLAN
M4.2 SCALE: 1:100

2 FIRST FLOOR TRANSPORTATION ROOM 103 PIPING RENOVATION PLAN
M4.2 SCALE: 1:100

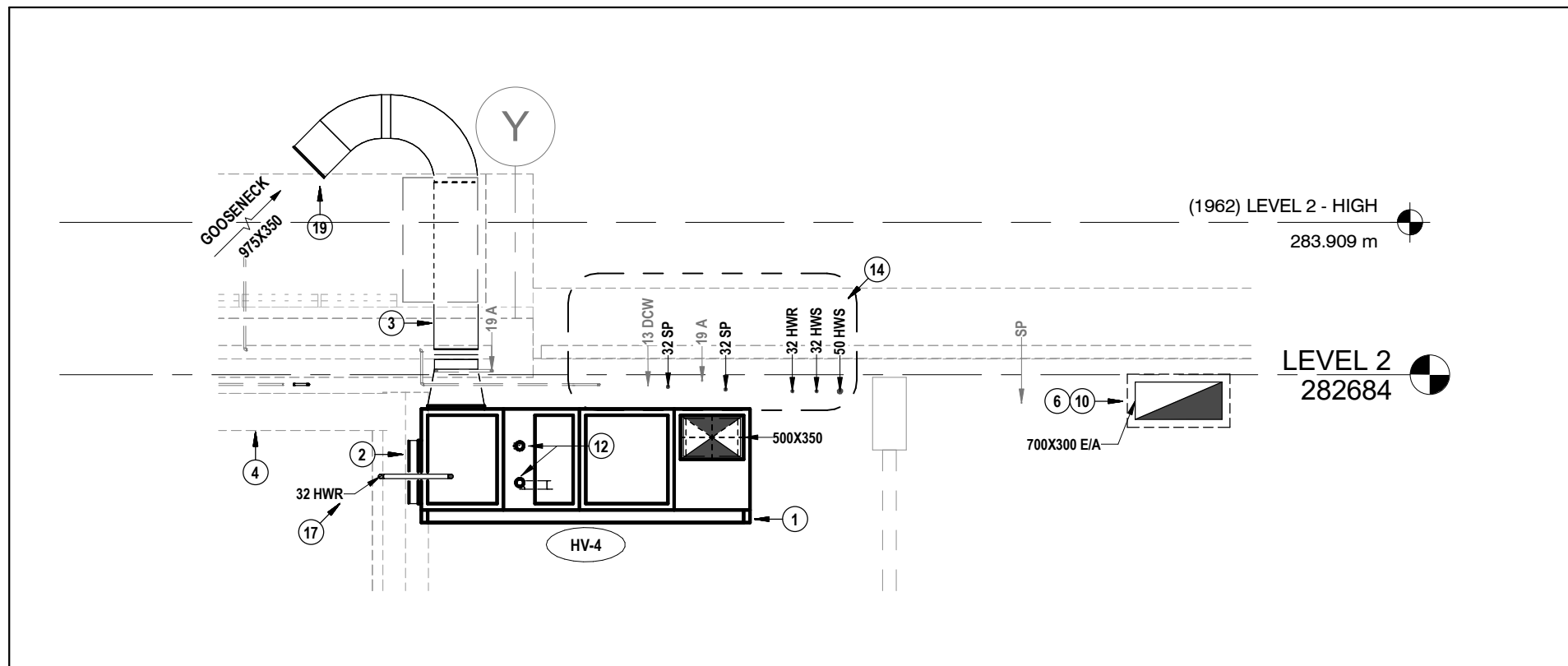
3 PARTIAL ROOF RENOVATION PLAN
M4.2 SCALE: 1:100



SECTION A: AHU-1 SUPPLY DUCTWORK AROUND CHAINFALL
SCALE: 1:30



SECTION B: WELDING BOOTH EXHAUST DUCTWORK
SCALE: 1:30



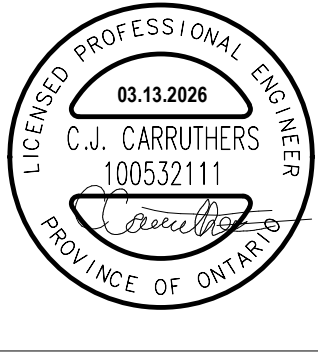
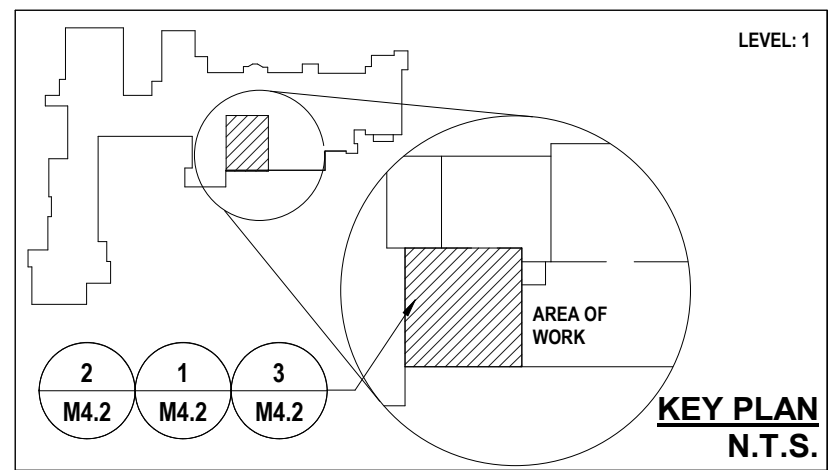
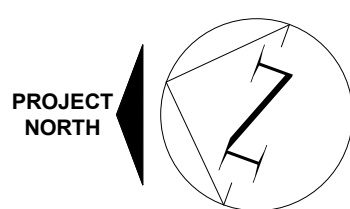
SECTION C: PIPE LAYOUT AROUND AHU-1
SCALE: 1:30

GENERAL NOTES:

- THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 01 35 43, "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.
- PROVIDE AUTOMATIC AIR VENTS IN PIPING AT HIGH POINTS & WHERE AIR CAN BE TRAPPED. PROVIDE DRAIN VALVES AT ALL LOW POINTS.
- PROVIDE CONNECTIONS TO EQUIPMENT ACCORDING TO RELEVANT PIPING SCHEMATICS.
- STAGE HEATING DEVICES IN SPACE VIA GAS TO MAINTAIN SPACE TEMPERATURE. REFER TO SPEC.

NOTES FOR THIS SHEET

- SUSPEND AHU AT MAX HEIGHT BELOW ROOF WHILE ALLOWING CLEARANCE FOR EXISTING SERVICES ABOVE HVAC UNIT. PROVIDE KINETICS SPRING TYPE VIBRATION ISOLATION HANGERS AT ALL SUPPORT POINTS. VIBRATION ISOLATION HANGERS SHALL BE SELECTED BY MANUFACTURER TO SUIT APPLICATION.
- AHU RETURN INTAKE SHALL TERMINATE OPEN-ENDED C/W GALVANIZED BIRD SCREEN. MAINTAIN MIN 450MM CLEARANCE FROM INLET TO ANY OBSTRUCTION.
- ROUTE OUTDOOR AIR DUCTWORK THRU EXISTING OPENING IN ROOF IN THIS APPROX LOCATION. ADJUST ROOF PENETRATION SIZE AS NEEDED & PATCH ANY REMAINING OPENING. REFER TO STRUCTURAL PLANS FOR ADDITIONAL INFO.
- EXISTING AUTO SHOP VEHICLE LIFT. ENSURE WORK DOES NOT INTERFERE WITH OPERATION OF LIFT.
- INSTALL WELDING BOOTH CONNECTION IN THIS APPROXIMATE LOCATION. CONFIRM EXACT LOCATION WITH OWNER / ARCHITECT PRIOR TO INSTALLATION TO SUIT WELDING BOOTH.
- PROVIDE THERMAL INSULATION FOR INTERIOR PORTION OF DUCT RISER & FOR ALL DUCTWORK WITHIN 2.4M OF EXTERIOR TERMINATION.
- DUCT SHALL RISE TO MAX HEIGHT IN HIGH CEILING AREA.
- POSITION SUPPLY GRILLES BELOW CHAIN FALL BEAM FOR CLEAR AIRFLOW. ENSURE GRILLE LOCATION DOES NOT IMPEDE OPERATION OF LIFT. REFER ALSO TO SECTION.
- DROP DUCT BELOW OBSTRUCTION & PROVIDE TRANSITION.
- INSTALL EXHAUST DUCTWORK AT MAX HEIGHT.
- REROUTE EXISTING SUPPLY DUCTWORK AROUND WELDING BOOTH.
- PROVIDE HWS / HWR CONNECTION TO HVAC-4 & P-1 ACCORDING TO DETAIL ON M-1.1.
- PROVIDE MECHANICAL DOGHOUSE AROUND DUCT. REFER TO DETAIL.
- REROUTE EXISTING PIPES AT HIGH LEVEL OVER NEW AHU UNIT ACCORDING TO SECTION DETAIL. ADJUST AS NECESSARY FOR SITE CONDITION.
- ROUTE HWS/R PIPING IN LOCATION OF DEMOLISHED PIPING.
- PROVIDE BAS DDC ACV C/W PIPING CONNECTIONS TO EX UV. INSTALL ACCORDING TO DETAIL.
- REROUTE HWR TO FACILITATE NEW AHU INSTALLATION. ENSURE PIPE DOES NOT CLASH WITH EXISTING VEHICLE LIFTS.
- PROVIDE COMPRESSED AIR DROP ACCORDING TO DETAIL.
- PROVIDE GOOSENECK ACCORDING TO DETAIL.
- MAINTAIN 3.0M CLEARANCE TO ROOF EDGE.
- MOUNT UNIT ON ROOF CURB ACCORDING TO DETAIL.
- PROVIDE DDC BAS TEMPERATURE SENSOR.
- PROVIDE 120V POWER SOURCE C/W WIRING & TRANSFORMER FOR LOW VOLTAGE CONTROL DEVICES / SENSORS. REFER ALSO TO ELECTRICAL DRAWINGS.
- PROVIDE BAS DDC ACTUATORS FOR EX UV DAMPERS. DAMPERS SHALL FAIL OPEN. REFER TO SPEC FOR ADDITIONAL INFO.
- REROUTE EXISTING SPRINKLER TO ACCOMMODATE NEW AHU & DUCTWORK LOCATION. REFER TO FIRE PROTECTION PLAN.
- PROVIDE BAS DDC CONTROL OF EQUIPMENT ACCORDING TO SPEC. PROVIDE NECESSARY WIRING, TRANSFORMERS, DEVICES, CONTROLLERS, SENSORS, ETC.
- PROVIDE BAS DDC ACV & CBV FOR EXISTING WALL FIN. REFER ALSO TO DETAIL. CONFIRM EXACT LOCATION OF EXISTING VALVE ON SITE.
- PROVIDE FLEXIBLE DUCT CONNECTORS AT ALL DUCT CONNECTIONS.
- REFER TO PROJECT B FOR CONTINUATION.



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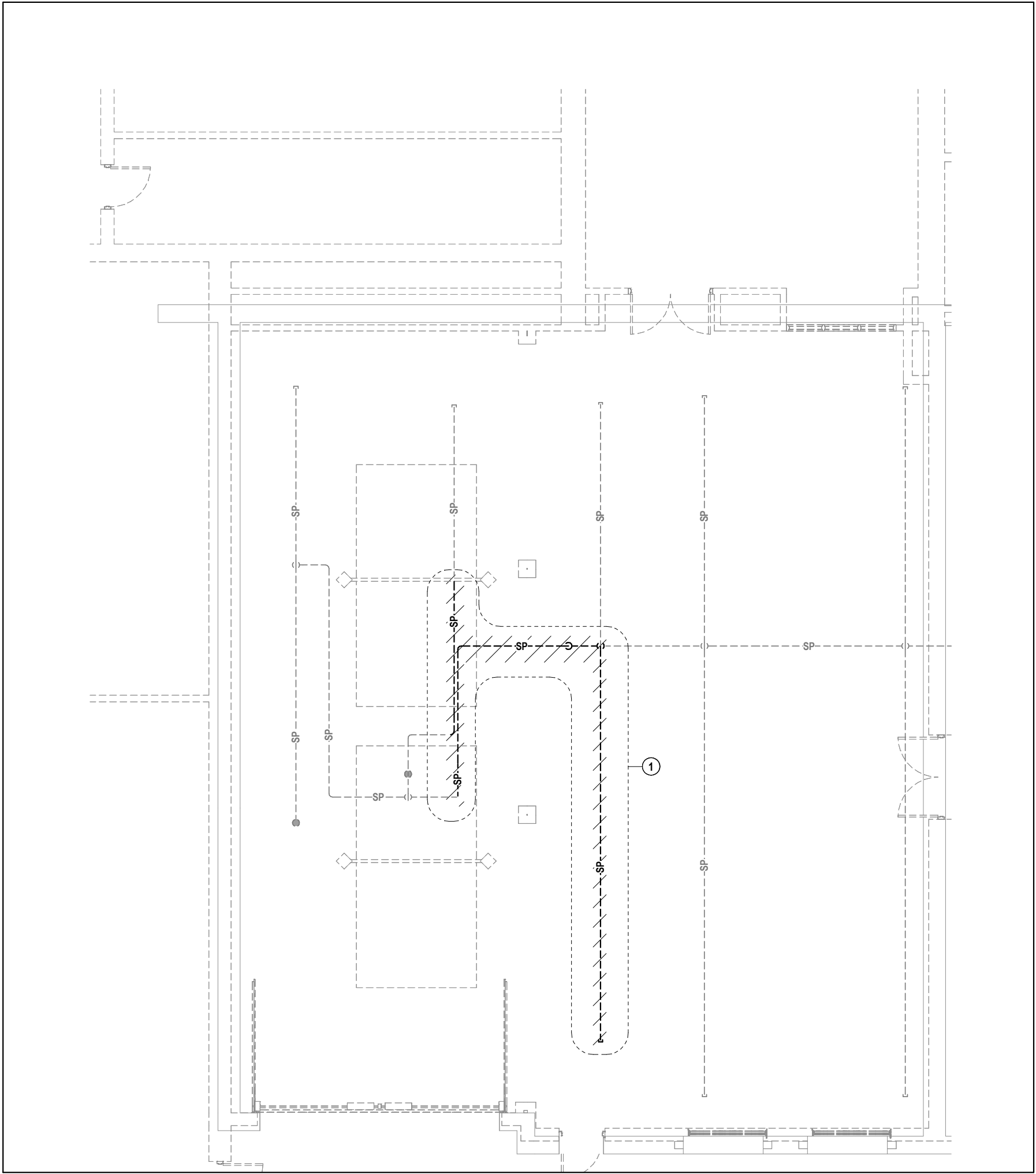
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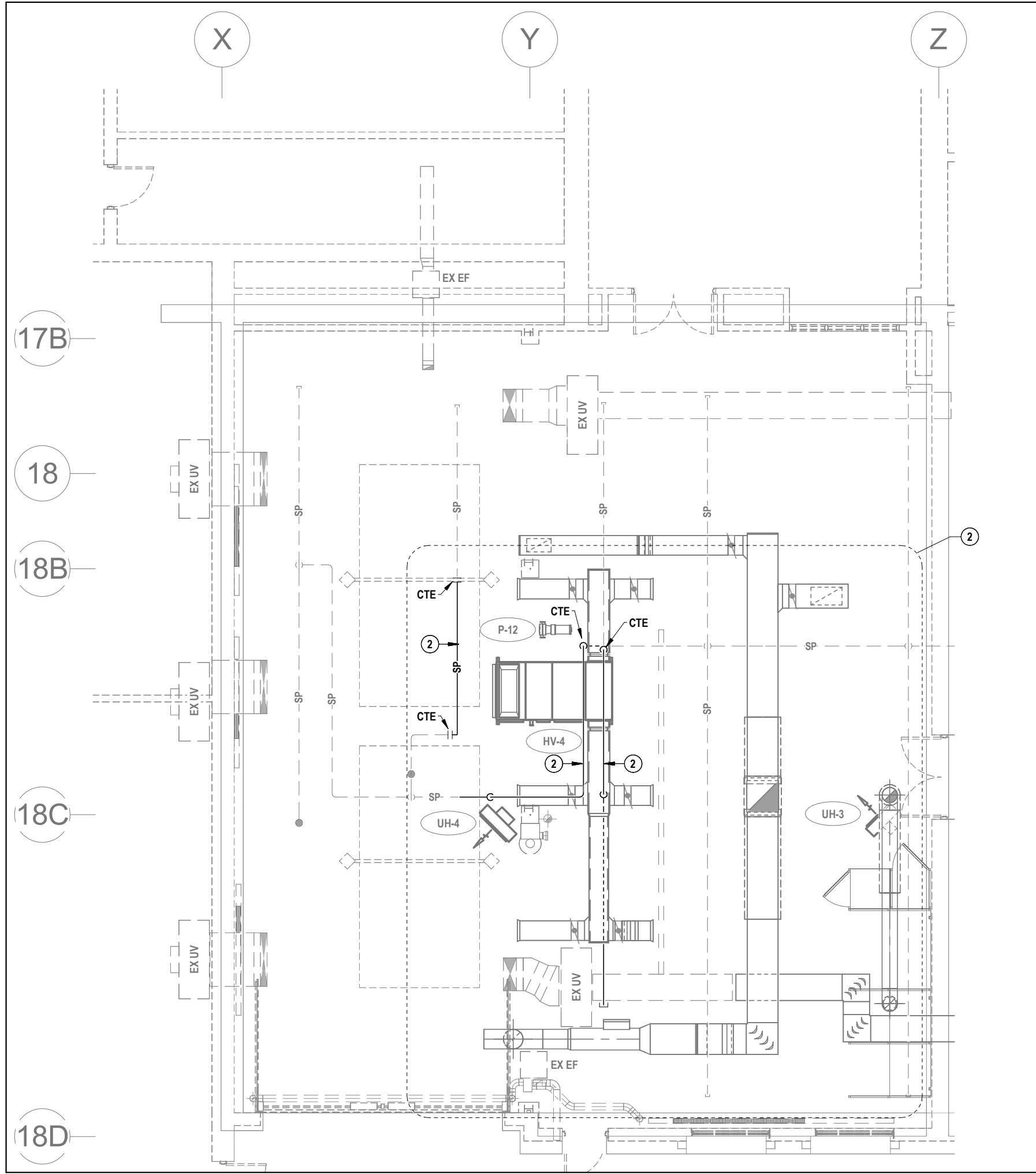
Galt Collegiate Institute
BOILER REPLACEMENT AND HAV UPGRADES - PHASE 2
PROJECT C - MECHANICAL RENOVATION PLANS

Checked By: C.J.C.
Drawn By: M.R.C.
Project No.: 23053

M4.2



1 FIRST FLOOR TRANSPORTATION ROOM SPRINKLER DEMOLITION PLAN
M4.3 SCALE: 1:100



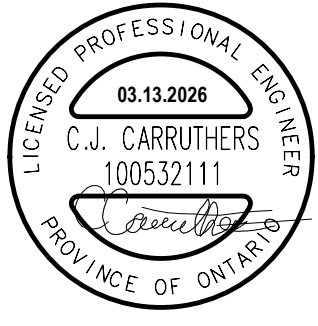
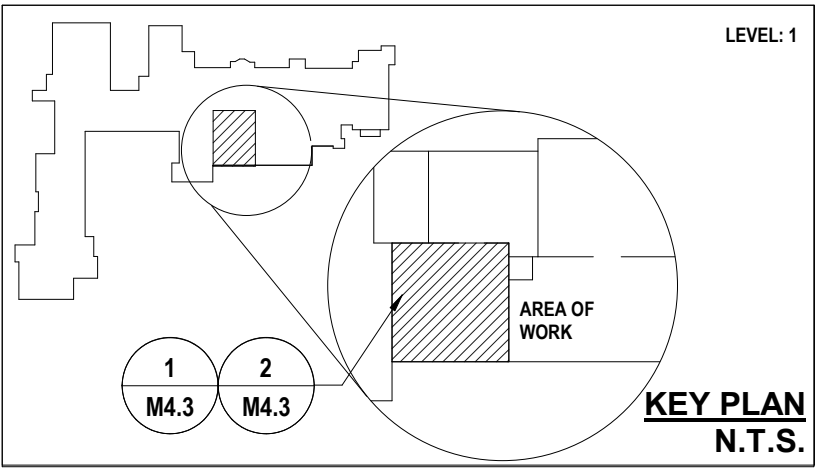
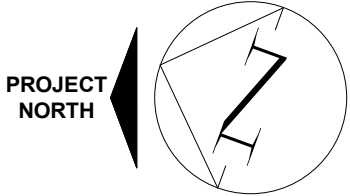
2 FIRST FLOOR TRANSPORTATION ROOM SPRINKLER RENOVATION PLAN
M4.3 SCALE: 1:100

GENERAL NOTES:

- THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 01 35 43, "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.
- COORDINATE SPRINKLER SHUT OFF TIME & EXTENTS WITH BUILDING OWNER.
- COORDINATE ALL WORK WITH AMULTANEOUS SPRINKLER WORK IN TASSIE HALL.

NOTES FOR THIS SHEET

- REMOVE SPRINKLER PIPING TO ACCOMMODATE NEW DUCTWORK & EQUIPMENT.
- PROVIDE SPRINKLER PIPING TO ACCOMMODATE NEW DUCTWORK & EQUIPMENT. MATCH EXISTING SPRINKLER DESIGN INTENT & PROVIDE COVERAGE IN ACCORDANCE WITH NFPA 13. INSTALL SPRINKLER PIPING AT MAX HEIGHT.



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BOILER REPLACEMENT AND HAV UPGRADES - PHASE 2
200 Water Street North, Cambridge, ON

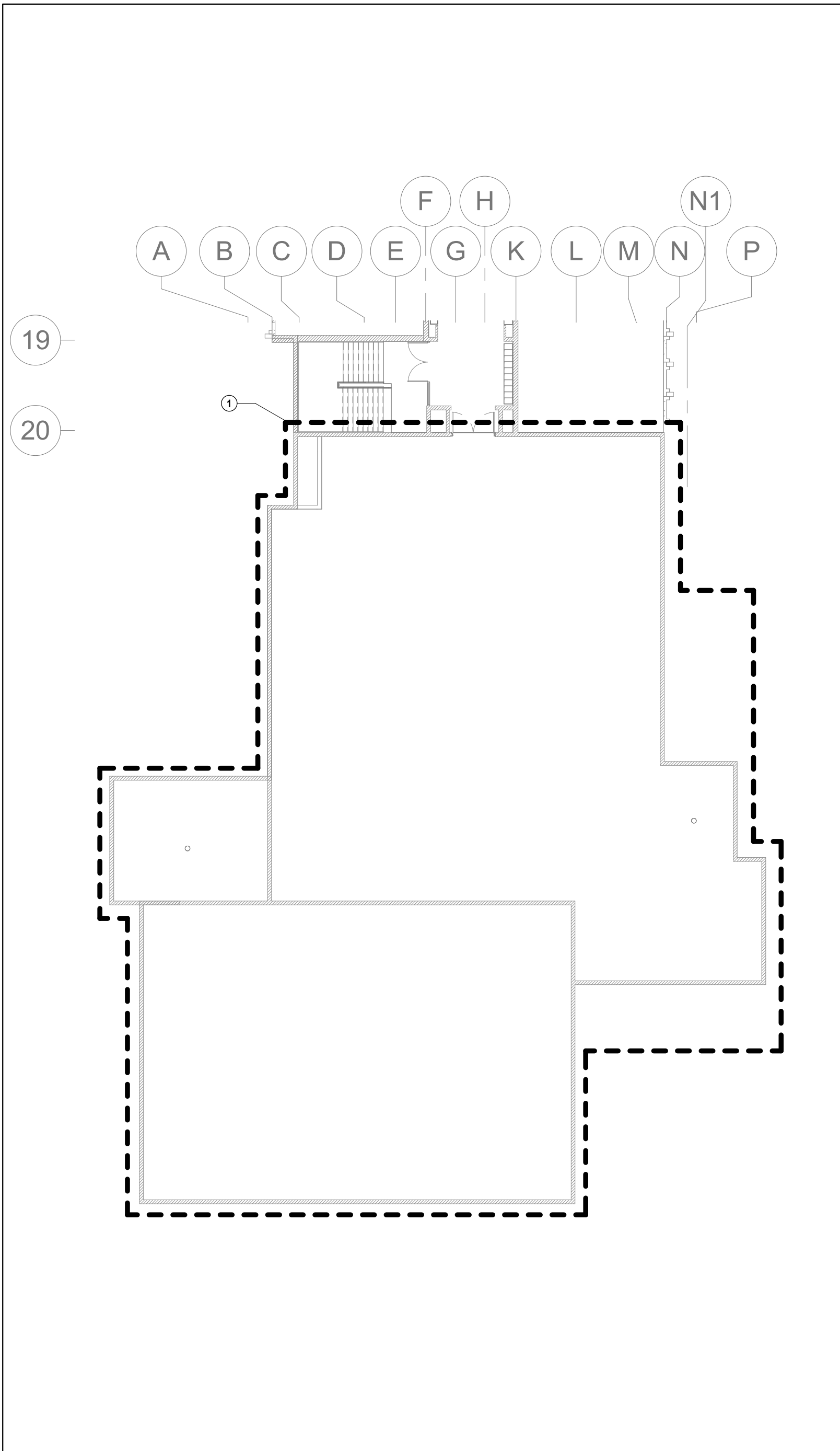
Project No.: 23053

Drawn By: M.R.C.

Checked By: C.J.C.

PROJECT C - SPRINKLER PLANS

M4.3



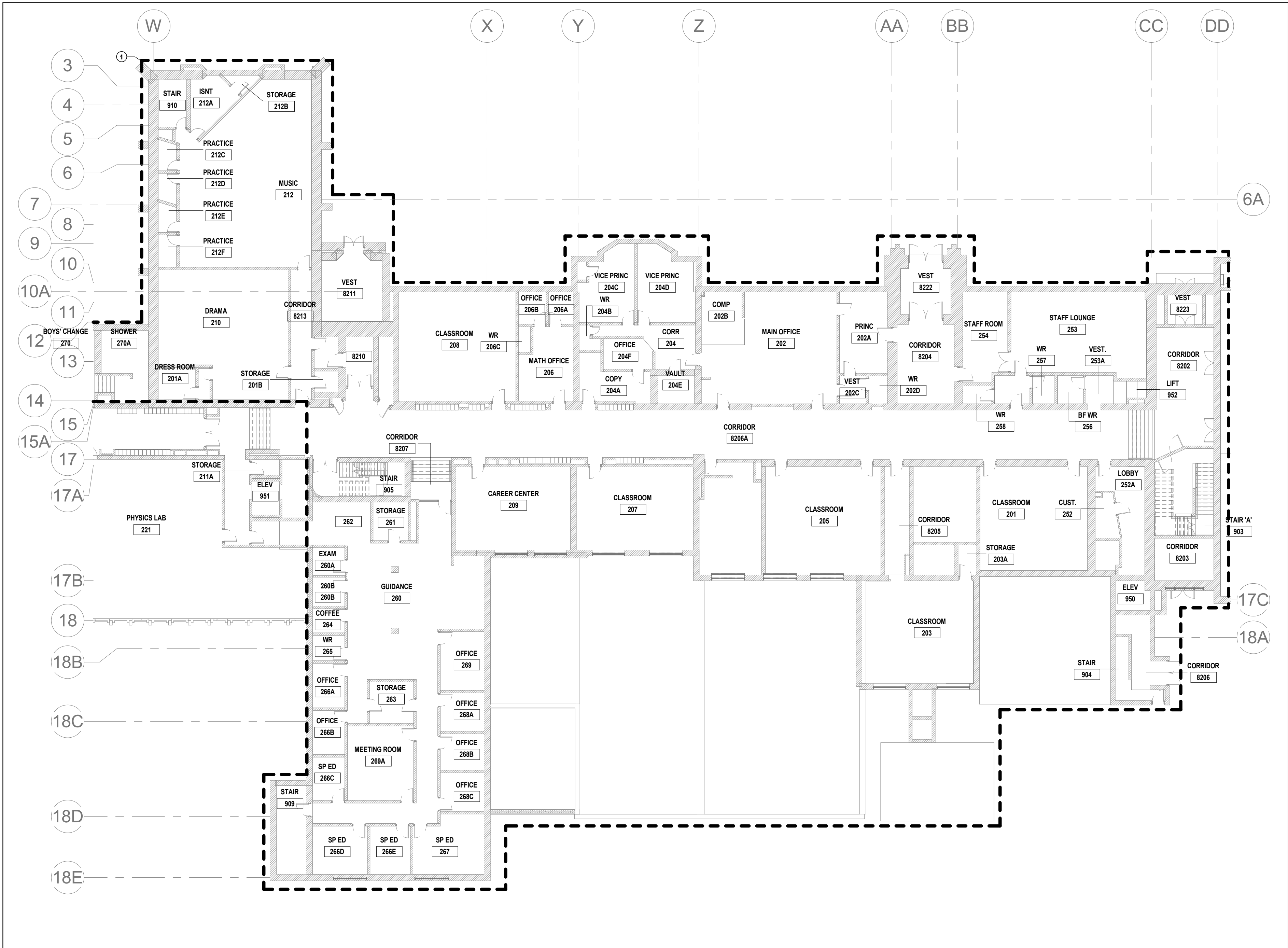
2 HVAC CONTROLS UPGRADES & BUILDING AUTOMATION SYSTEM EXPANSION (SECOND FLOOR WEST)
M5.2 SCALE: 1" = 20'

GENERAL NOTES FOR THIS SHEET

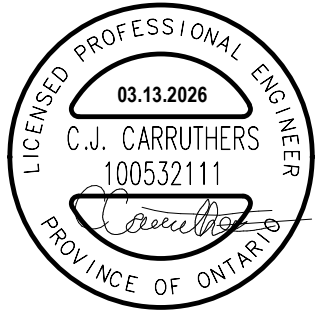
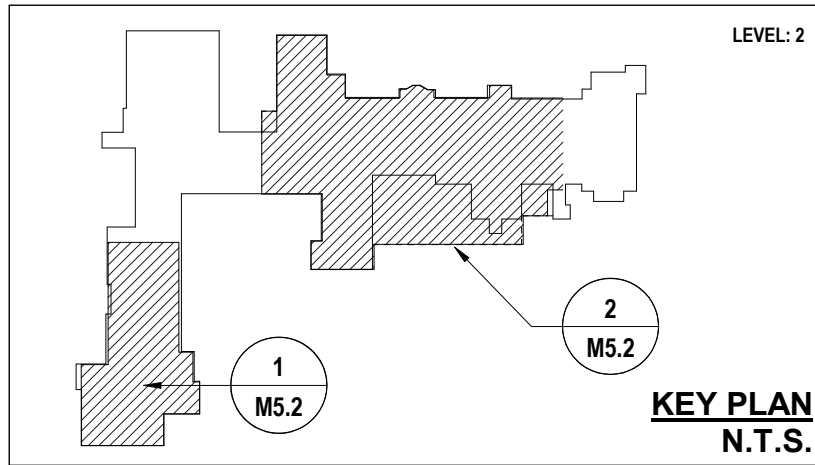
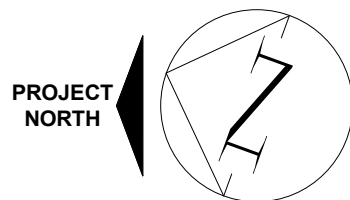
- THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 01 35 43 "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.

NOTES FOR THIS SHEET

- 1 → REPLACE ALL EXISTING HVAC CONTROLS WITH BAS DIGITAL CONTROLS.



1 HVAC CONTROLS UPGRADES & BUILDING AUTOMATION SYSTEM EXPANSION (SECOND FLOOR EAST)
M5.2 SCALE: 1" = 20'



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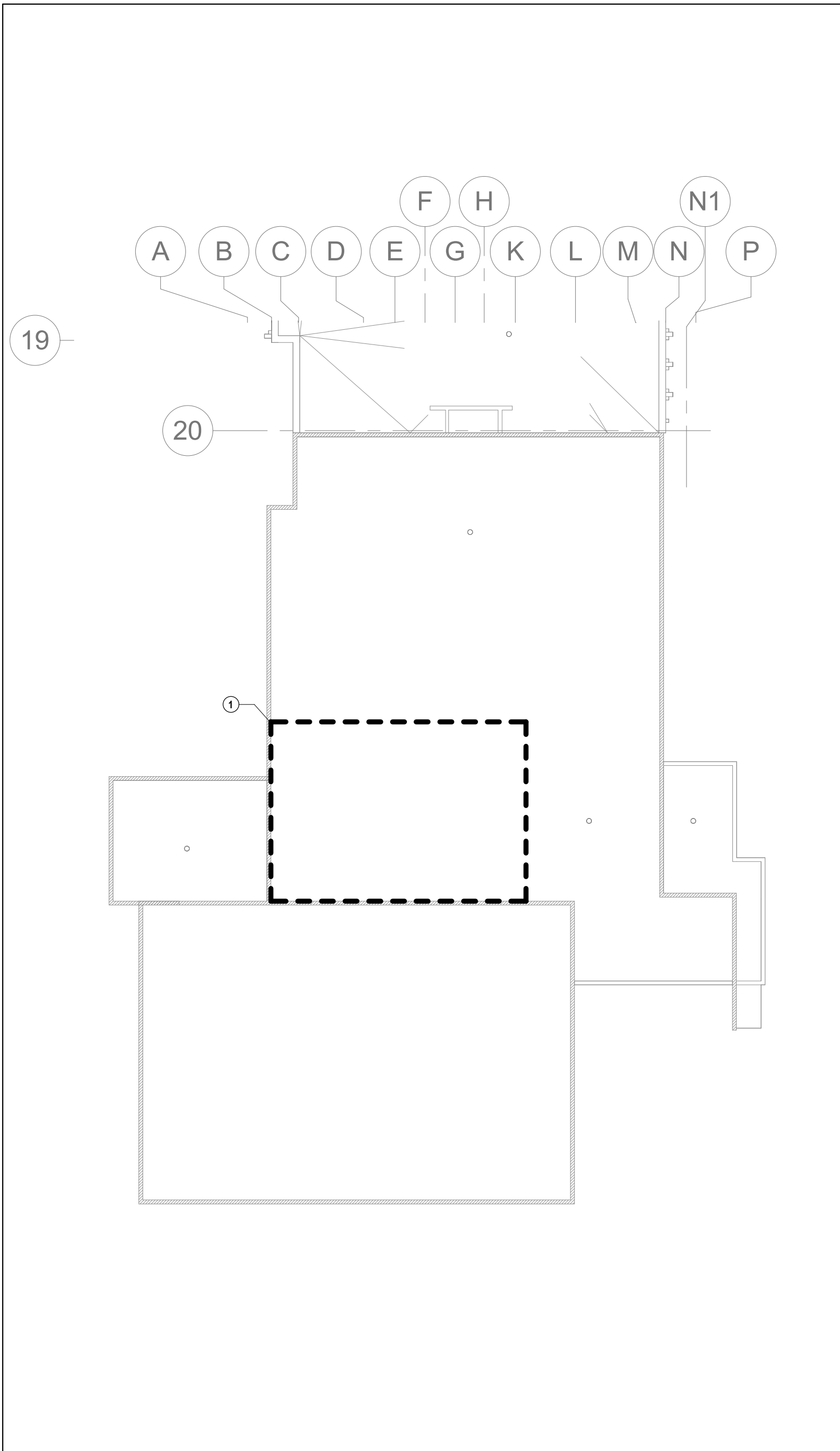
Project No.: 23053

Checked By: C.J.C.

Drawn By: J.S.

PROJECT D - HVAC CONTROLS UPGRADES & BUILDING AUTOMATION SYSTEM EXPANSION (SECOND FLOOR)

M5.2



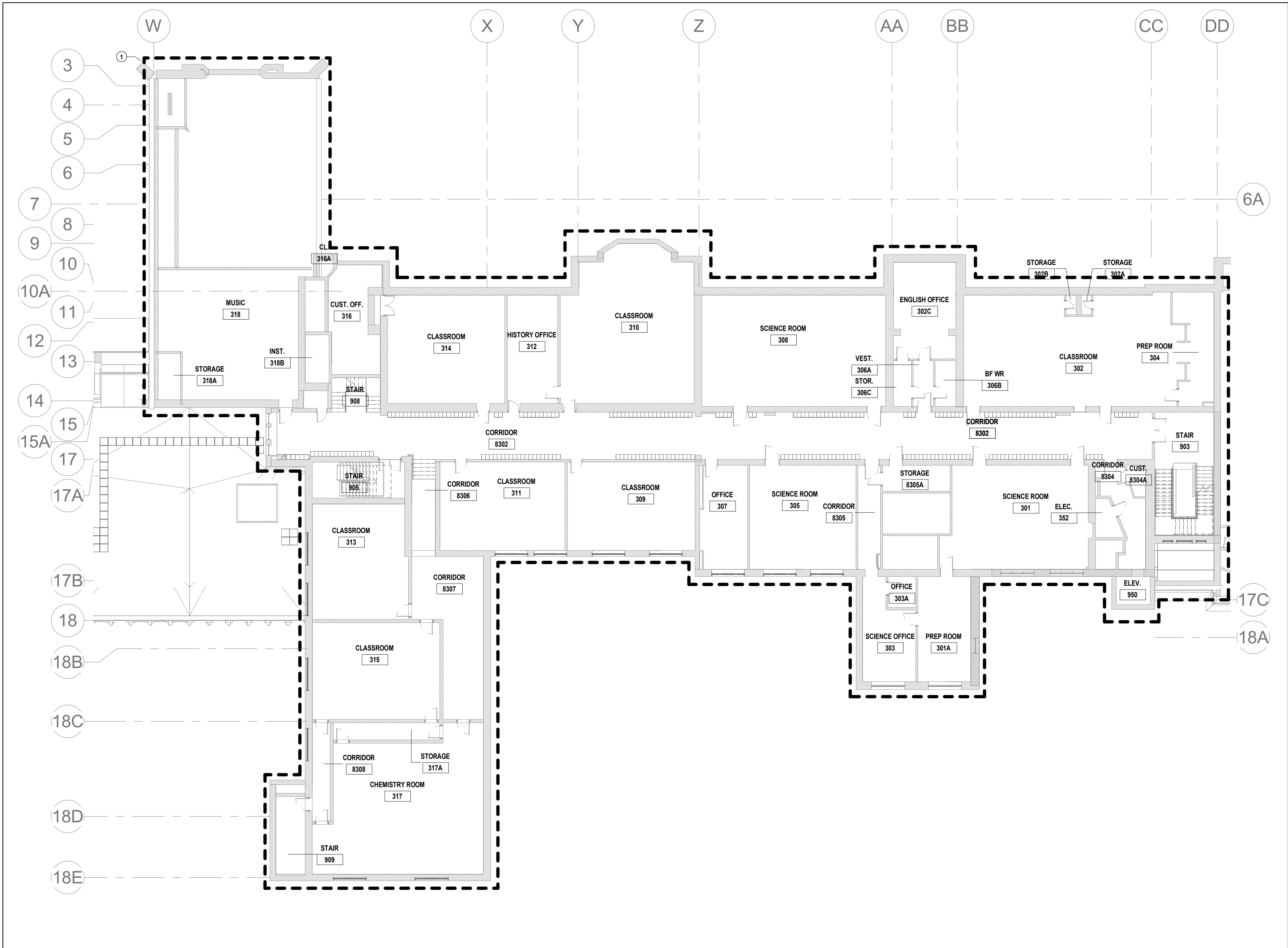
1 HVAC CONTROLS UPGRADES & BUILDING AUTOMATION SYSTEM EXPANSION (THIRD FLOOR WEST)
M5.3 SCALE: 1:200

GENERAL NOTES FOR THIS SHEET

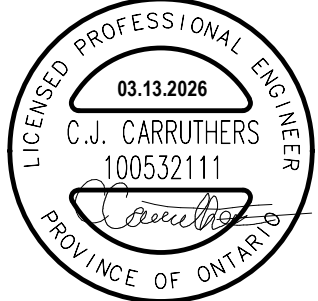
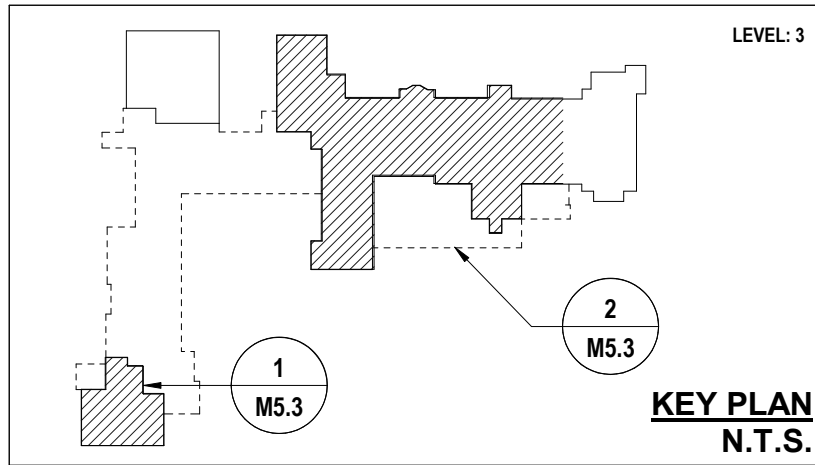
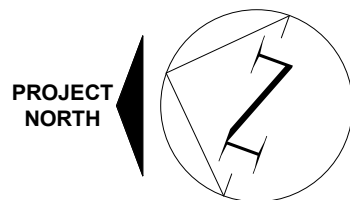
- THIS AREA OF WORK CONTAINS ASBESTOS CONTAINING MATERIALS (ACM). ALL CONTRACTORS SHALL REFER TO THE ASBESTOS AUDIT AND SECTION 01 35 43, "HAZARDOUS MATERIALS" FOR APPROPRIATE PROTOCOLS THAT MUST BE FOLLOWED, REGARDLESS OF ABATEMENT OPERATIONS BEING CONDUCTED OR NOT.

NOTES FOR THIS SHEET

- 1 REPLACE ALL EXISTING HVAC CONTROLS WITH BAS DIGITAL CONTROLS.



2 HVAC CONTROLS UPGRADES & BUILDING AUTOMATION SYSTEM EXPANSION (THIRD FLOOR EAST)
M5.3 SCALE: 1:200



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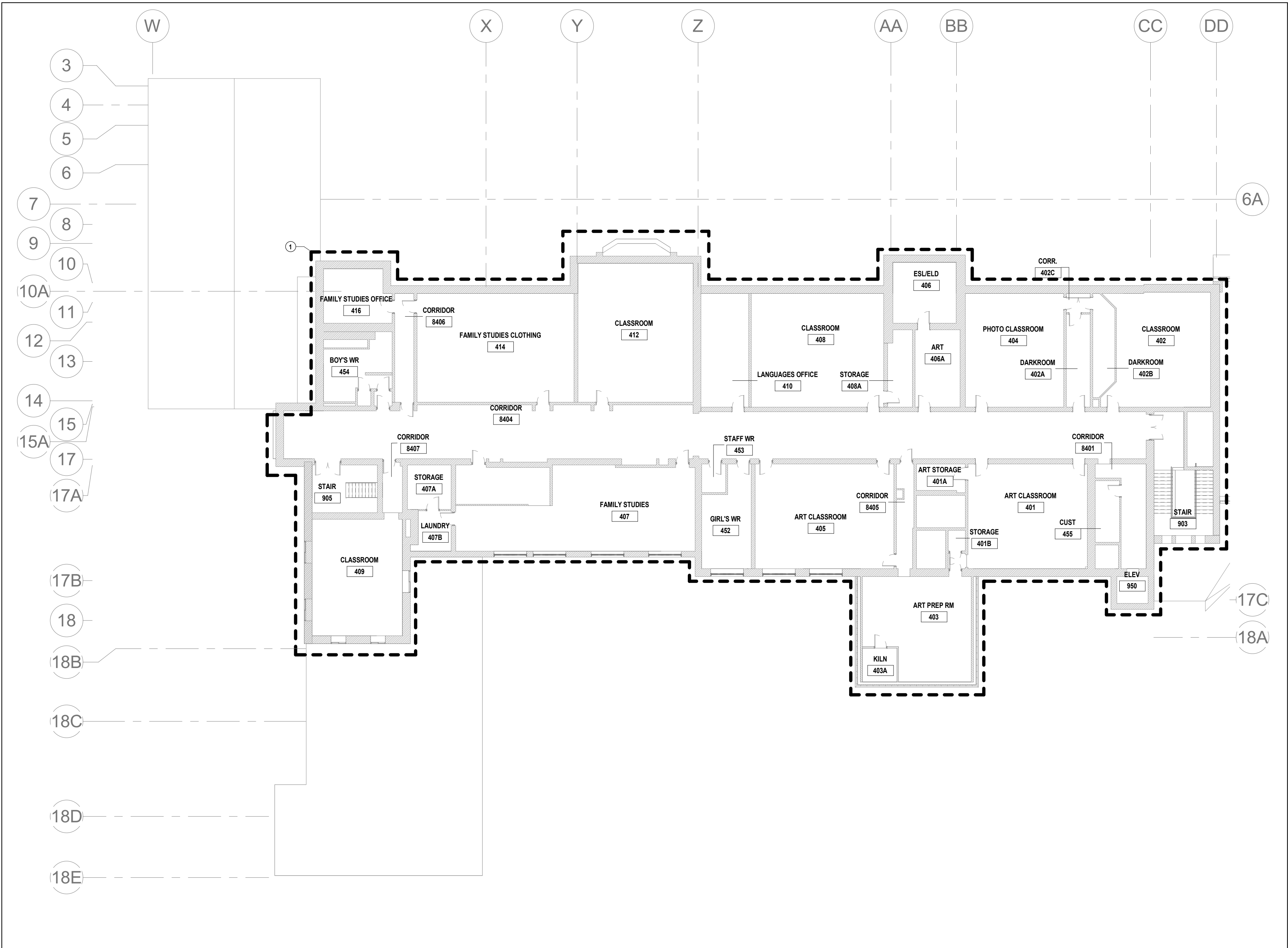
Project No.: 23053

Drawn By: J.S.

Checked By: C.J.C.

PROJECT D - HVAC CONTROLS UPGRADES & BUILDING AUTOMATION SYSTEM EXPANSION (THIRD FLOOR)

M5.3



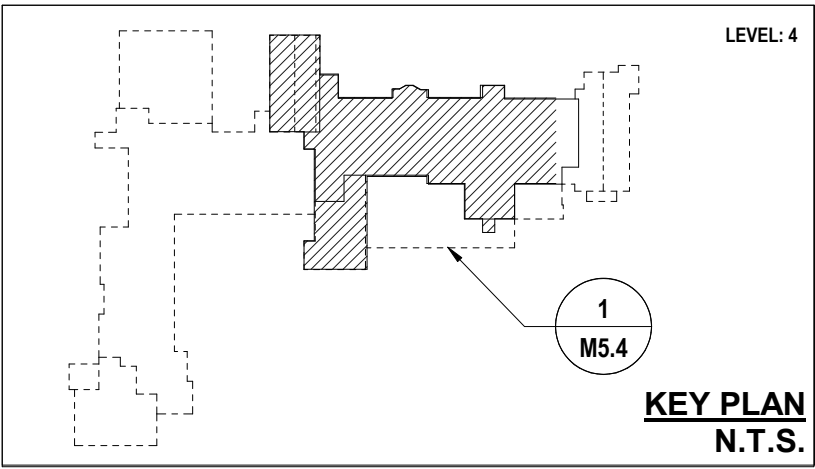
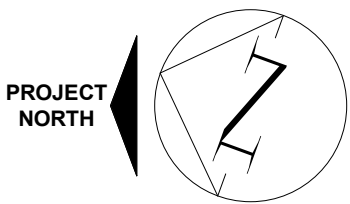
1 HVAC CONTROLS UPGRADES & BUILDING AUTOMATION SYSTEM EXPANSION (FOURTH FLOOR EAST)
M5.4 SCALE: 1/200

GENERAL NOTES FOR THIS SHEET

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NOTES FOR THIS SHEET

1 → REPLACE ALL EXISTING HVAC CONTROLS WITH BAS DIGITAL CONTROLS.



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PROJECT D - HVAC CONTROLS UPGRADES & BUILDING AUTOMATION SYSTEM EXPANSION (FOURTH FLOOR)

Project No.:	23053	Drawn By:	J.S.	Checked By:	C.J.C.
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M5.4