

Revision/Revision	Description/Description	Date/Date
1	ISSUED FOR TENDER	2017.05.01

Client/client

CORRECTIONAL SERVICE CANADA

Project title/Titre du projet
MATSQUI INSTITUTION
33344 KING ROAD,
ABBOTSFORD, BC
LIVING UNIT M3
AHU REPLACEMENTS

Consultant Signature Box Only

Designed by/Concept par
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PREETIPAL PAUL

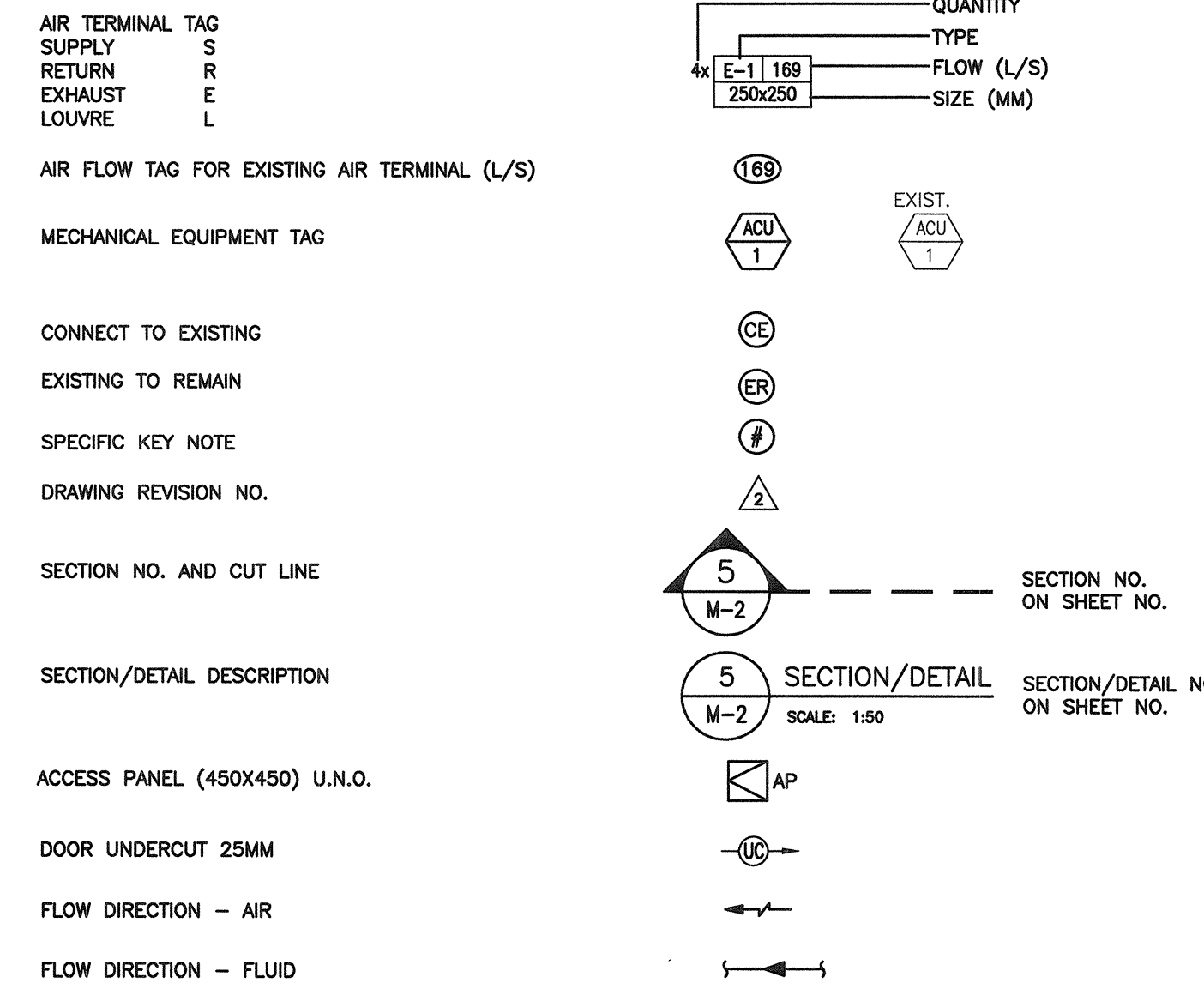
Drawing title/Titre du dessin

SITE PLAN, DRAWING LIST,
 GENERAL NOTES, AND
 MECHANICAL LEGEND

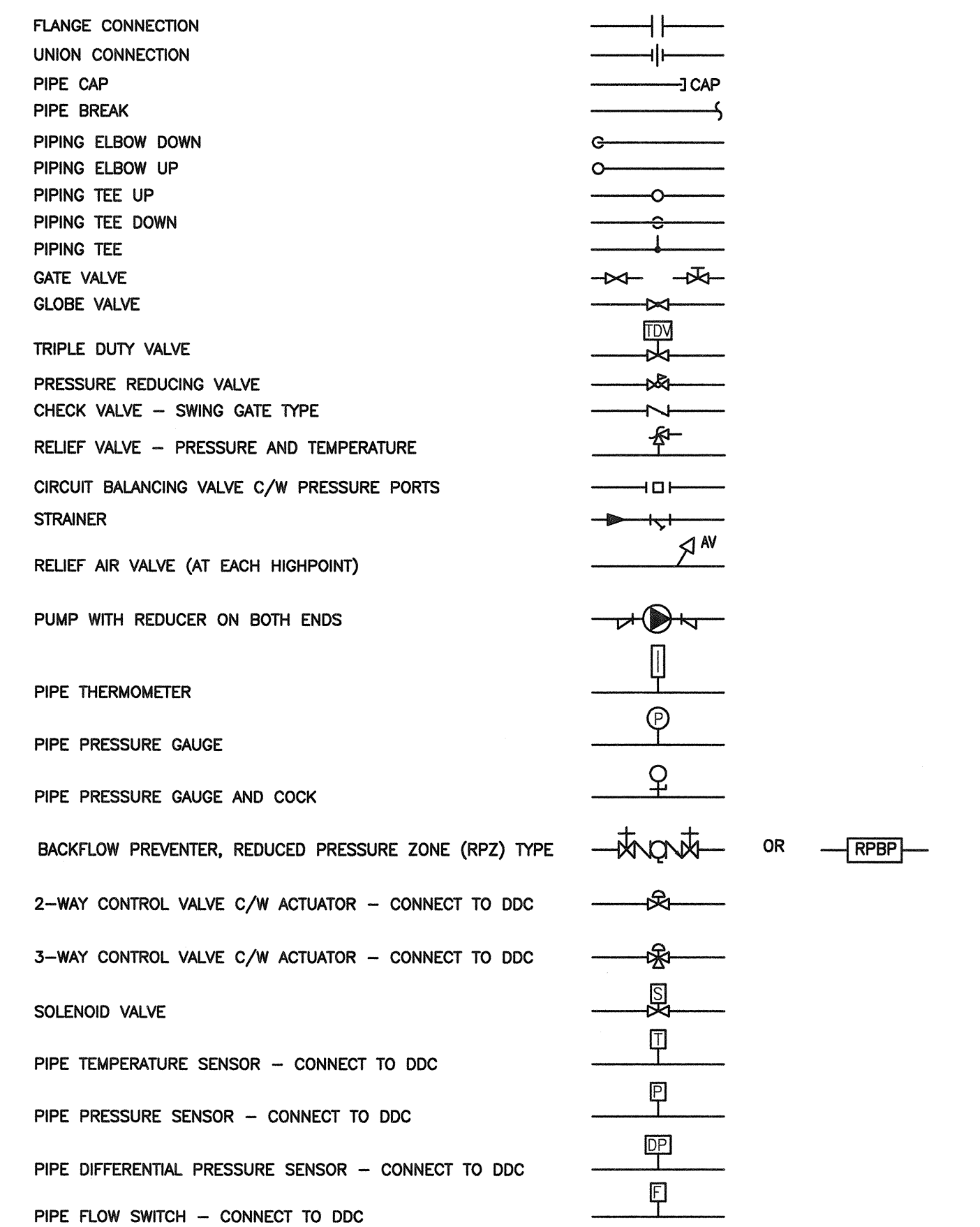
Project No./No. du projet	Sheet/Feuille	Revision no./ La Révision no.
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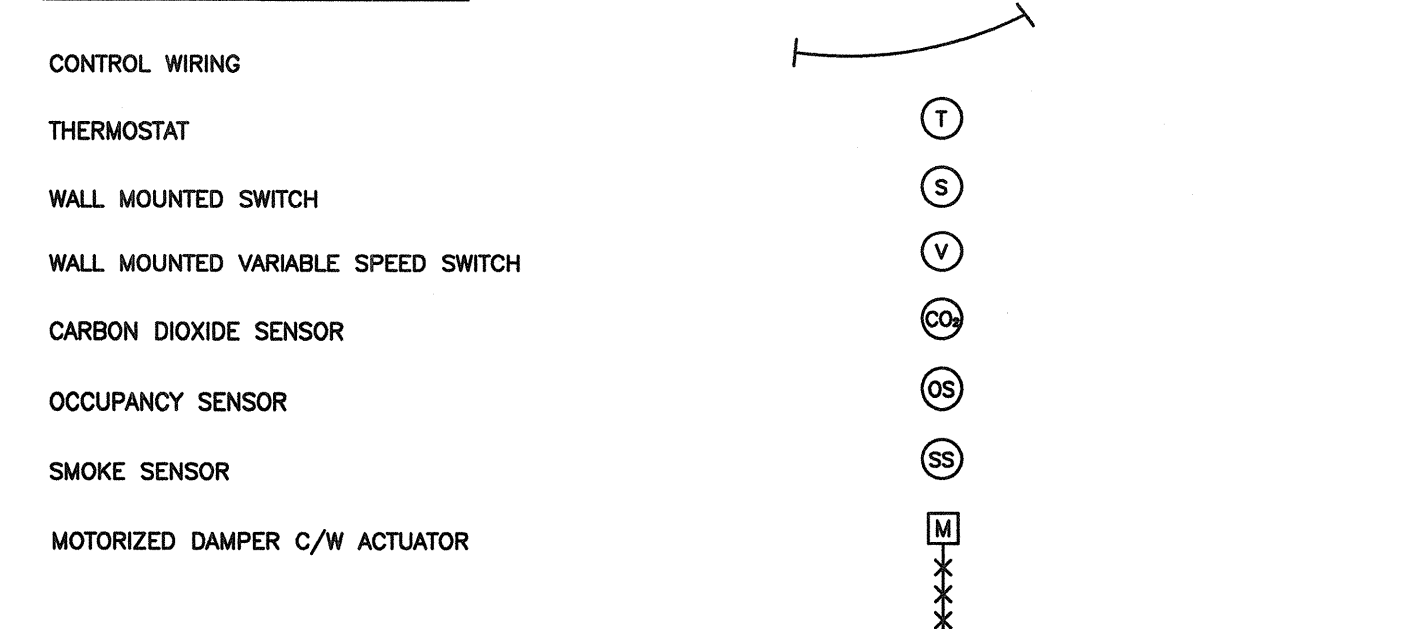
TAGS AND SYMBOLS



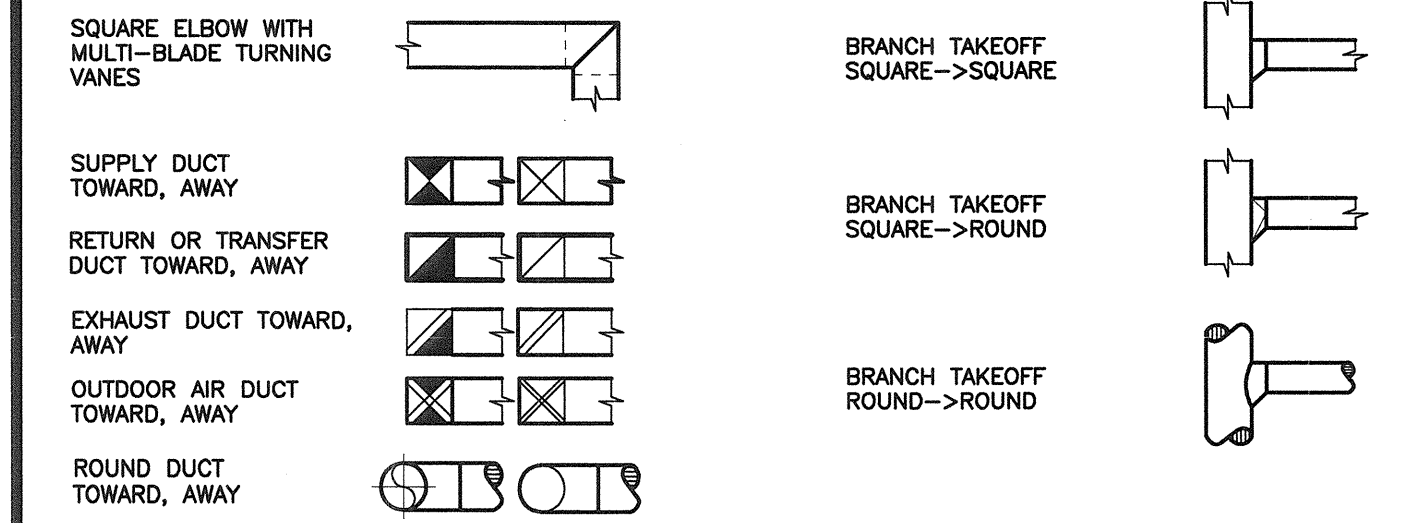
HVAC PIPING SYMBOLS



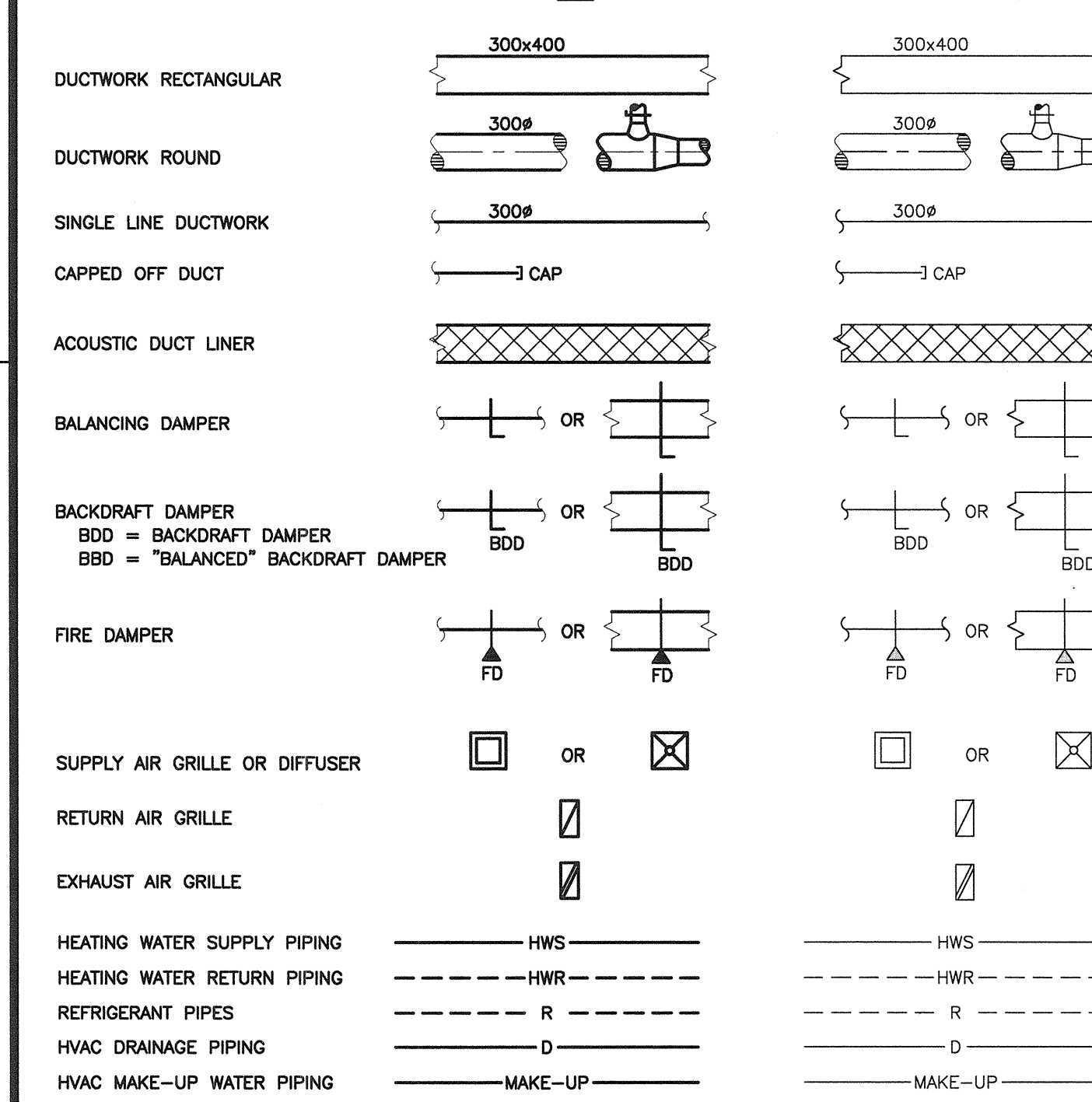
HVAC CONTROLS SYMBOLS



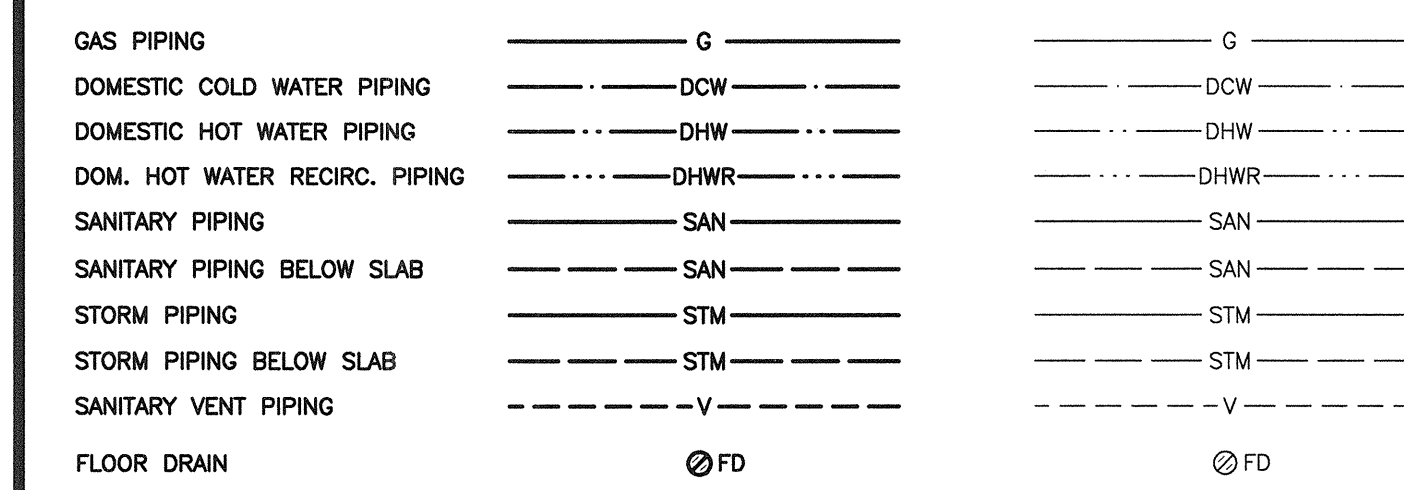
HVAC DUCTING SYMBOLS



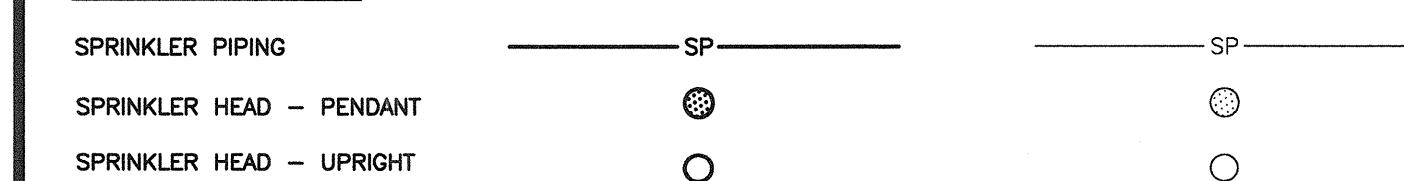
HVAC



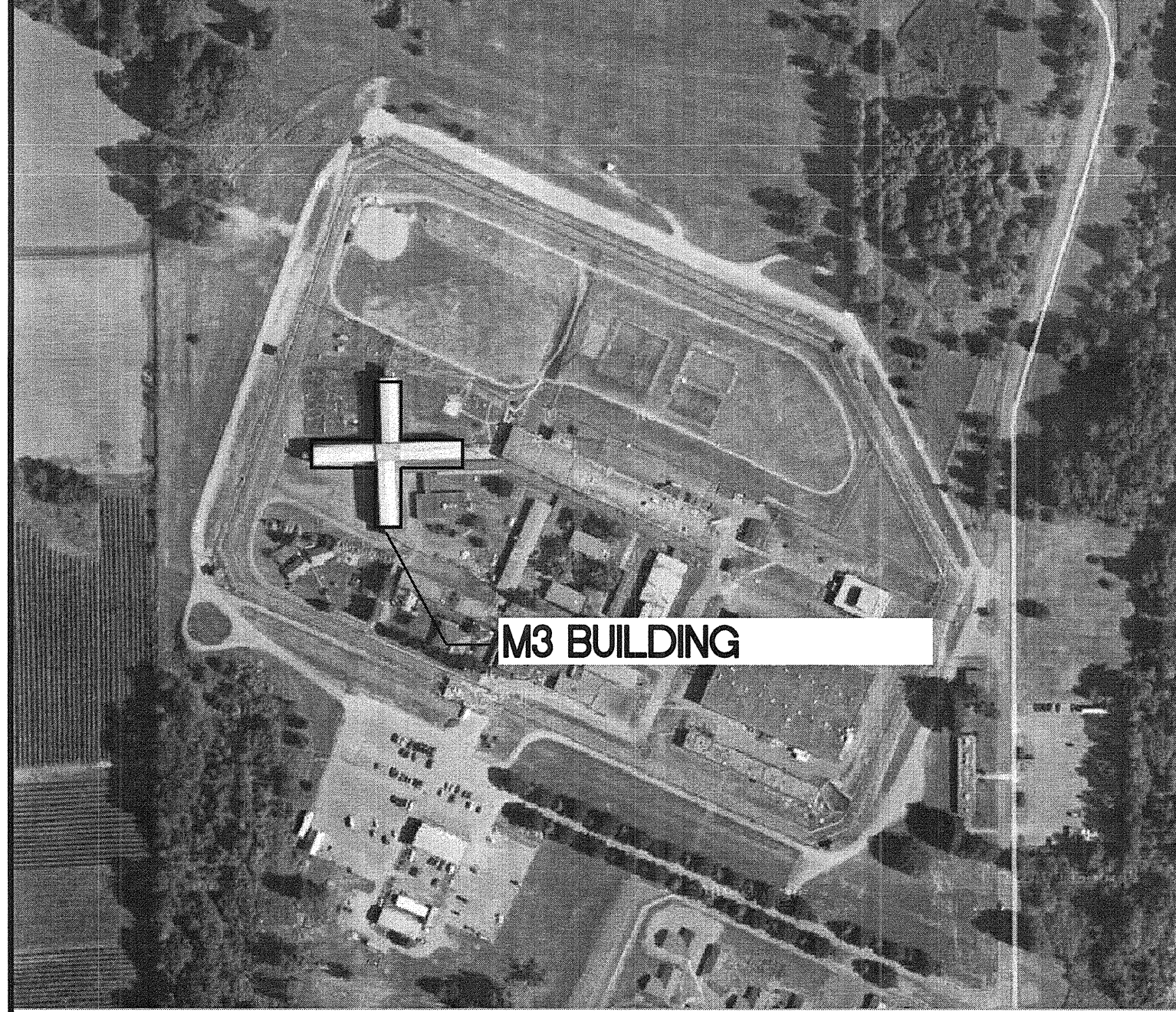
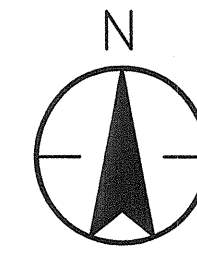
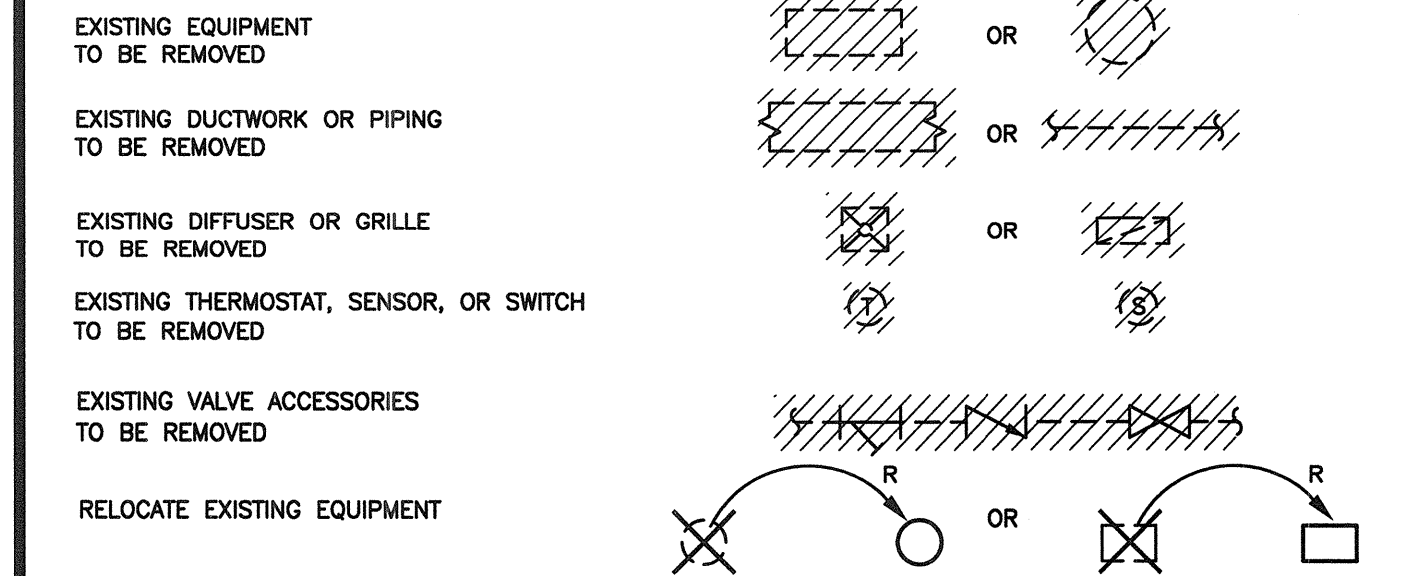
PLUMBING



FIRE SUPPRESSION



DEMOLITION



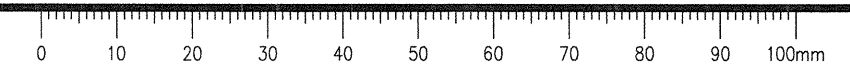
1 SITE PLAN
 M-001 SCALE: N.T.S.

DRAWING LIST:

NAME	DESCRIPTION
M001	SITE PLAN, DRAWING LIST, GENERAL NOTES, AND MECHANICAL LEGEND
M101	PENTHOUSE - HVAC DEMOLITION
M102	PENTHOUSE - HVAC NEW
M400	MECHANICAL EQUIPMENT SCHEDULES

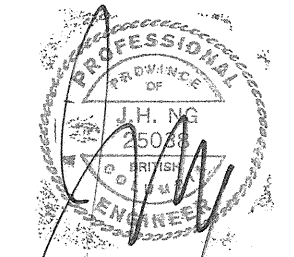
GENERAL NOTES :

- THESE CONTRACT DRAWINGS ARE IN PART DIAGRAMMATIC, INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE GENERAL ARRANGEMENT OF EQUIPMENT AND PIPING. THE CONTRACTOR SHALL CONFIRM AND LAY-OUT EXACT LOCATIONS, SIZES, AND ELEVATIONS OF ALL CRITICAL LOCATIONS AND DIMENSIONS AT THE SITE AND PROVIDE ANY NECESSARY OFFSETS AND ADJUSTMENTS TO SUIT SITE CONDITIONS AND AVOID CONFLICT WITH OTHER TRADES PRIOR TO COMMENCING WITH WORK.
- ALL TRADES TO CLOSELY COORDINATE ALL WORK WITH THE PRIME CONTRACTOR, AS WELL AS ALL OTHER AFFECTED SUB-TRADES.
- THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE COMPLIMENTARY. ANYTHING CALLED FOR IN THE SPECIFICATIONS OR SHOWN ON THE DRAWINGS SHALL BE CONSIDERED AS APPEARING IN BOTH. EACH DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWINGS FROM ALL OTHER DISCIPLINES, AS WELL AS WITH ALL APPLICABLE SECTIONS OF THE SPECIFICATIONS.
- UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND EQUIPMENT REQUIRED FOR THIS WORK SHALL BE NEW, OF GOOD QUALITY AND SHALL BE FURNISHED, DELIVERED, ERECTED, CONNECTED AND FINISHED IN EVERY DETAIL, AND SHALL BE SELECTED AND ARRANGED SO AS TO FIT PROPERLY INTO THE BUILDING SPACES. WHERE NO SPECIFIC KIND OR QUALITY OF MATERIAL IS GIVEN, A GOOD STANDARD ITEM AS APPROVED BY THE CONSULTANT SHALL BE FURNISHED. WHERE SPECIFIC INSTALLATION METHOD IS NOT GIVEN, INSTALL IN ACCORDANCE WITH GOOD PRACTICE.
- USE SKILLED AND QUALIFIED, FITTERS, PLUMBERS, METAL WORKERS, WELDERS, HELPERS, AND LABOURERS REQUIRED TO UNLOAD, TRANSFER, ERECT, CONNECT UP, ADJUST, START, OPERATE AND TEST SUCH SYSTEMS. HELPERS AND UNQUALIFIED WORKERS SHALL BE DIRECTLY SUPERVISED AT ALL TIMES WHILE WORKING ON THE SITE BY QUALIFIED TRADES PERSONS.
- PATCH AND MAKE GOOD ALL CEILINGS, ROOFS, WALLS, FLOORS, AND ALL ARCHITECTURAL FEATURES ALTERED OR REMOVED IN THE PERFORMANCE OF THE WORK.





MAY 1 2017



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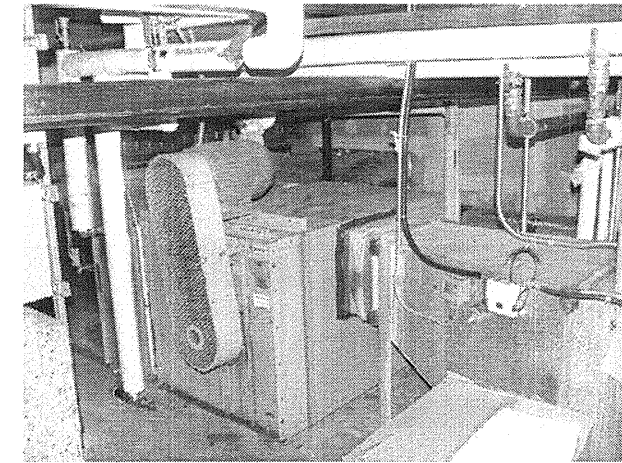
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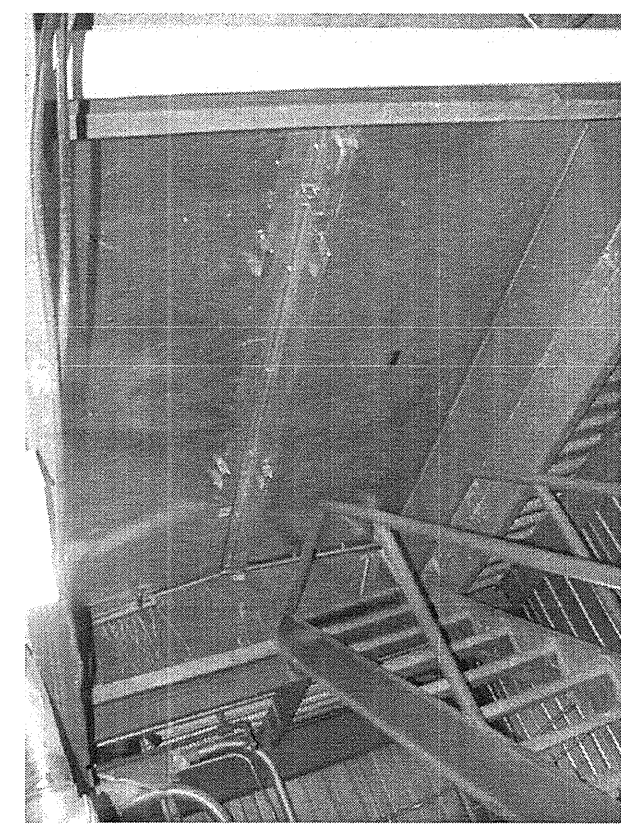
PENTHOUSE
HVAC DEMOLITION

Project No./No. du projet Sheet/Feuille Revision no./La Révision no.

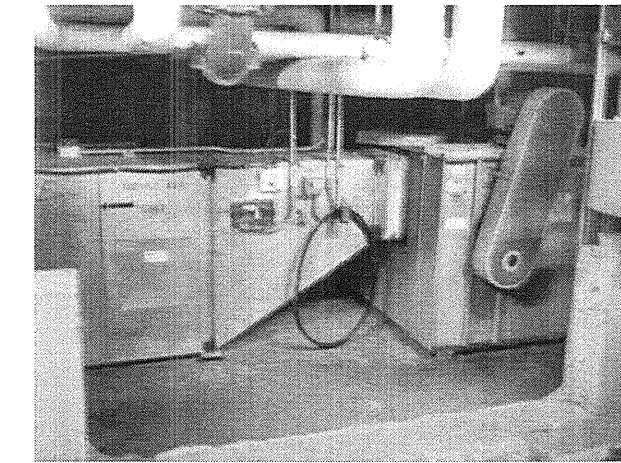
R.082466.001 **M101** **1**
 2 OF 4



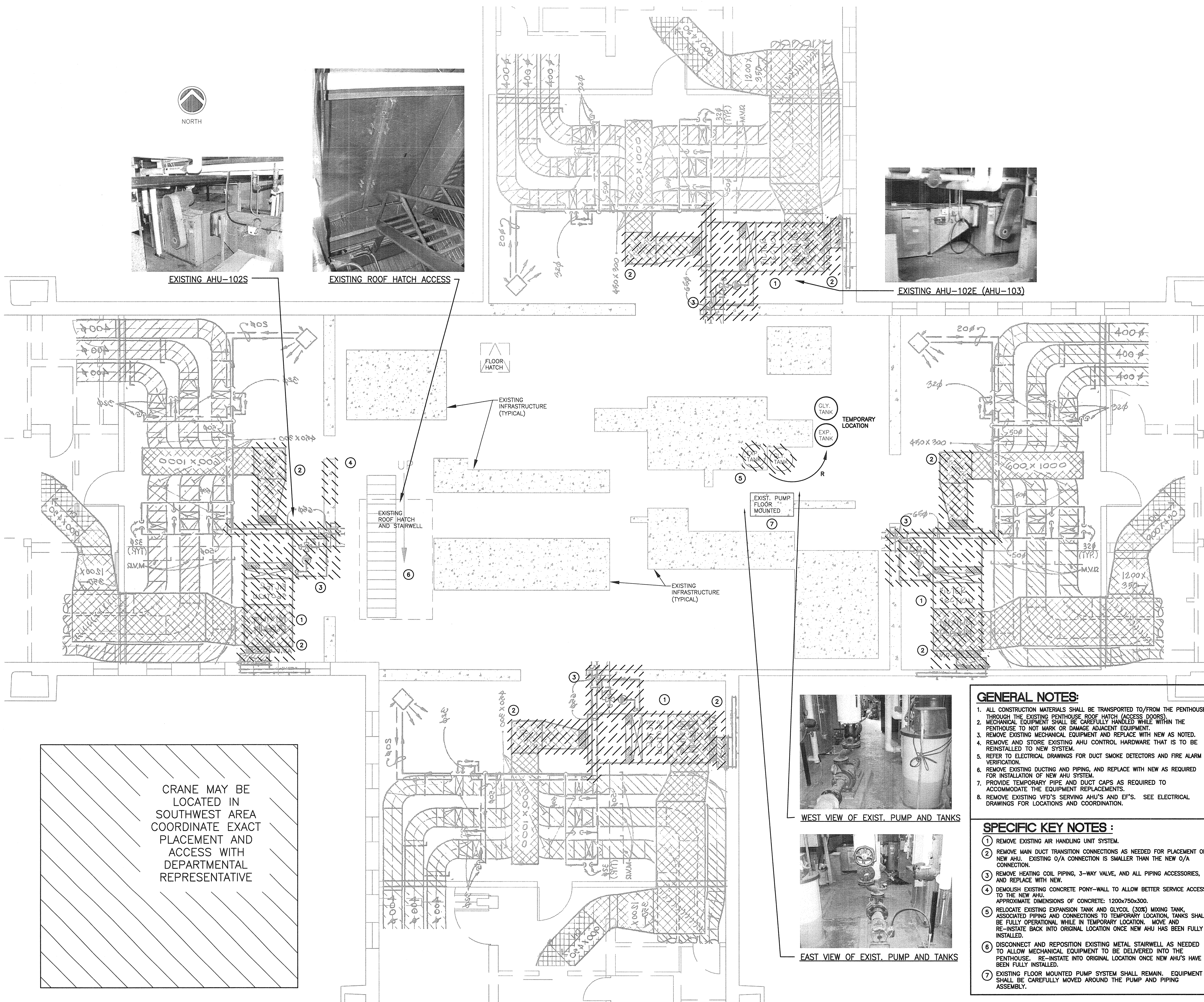
EXISTING AHU-102S



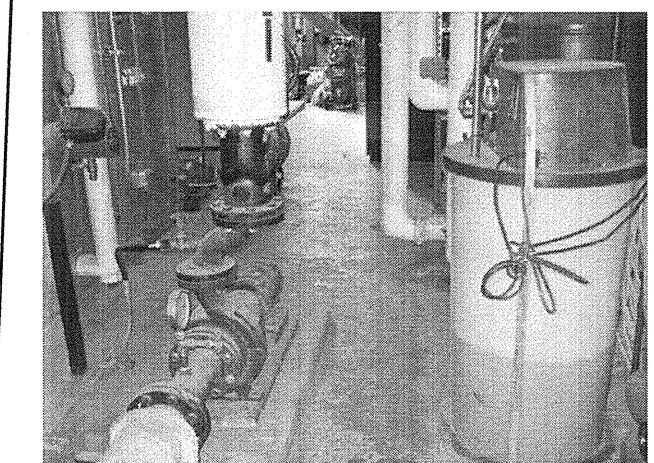
EXISTING ROOF HATCH ACCESS



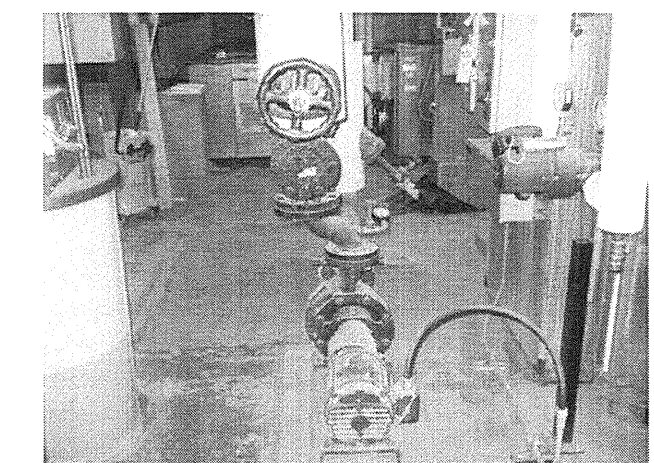
EXISTING AHU-102E (AHU-103)



CRANE MAY BE LOCATED IN SOUTHWEST AREA COORDINATE EXACT PLACEMENT AND ACCESS WITH DEPARTMENTAL REPRESENTATIVE



WEST VIEW OF EXIST. PUMP AND TANKS



EAST VIEW OF EXIST. PUMP AND TANKS

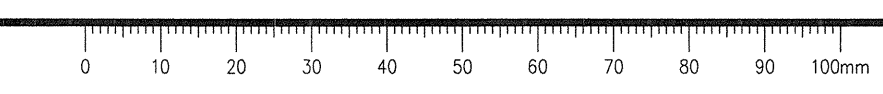
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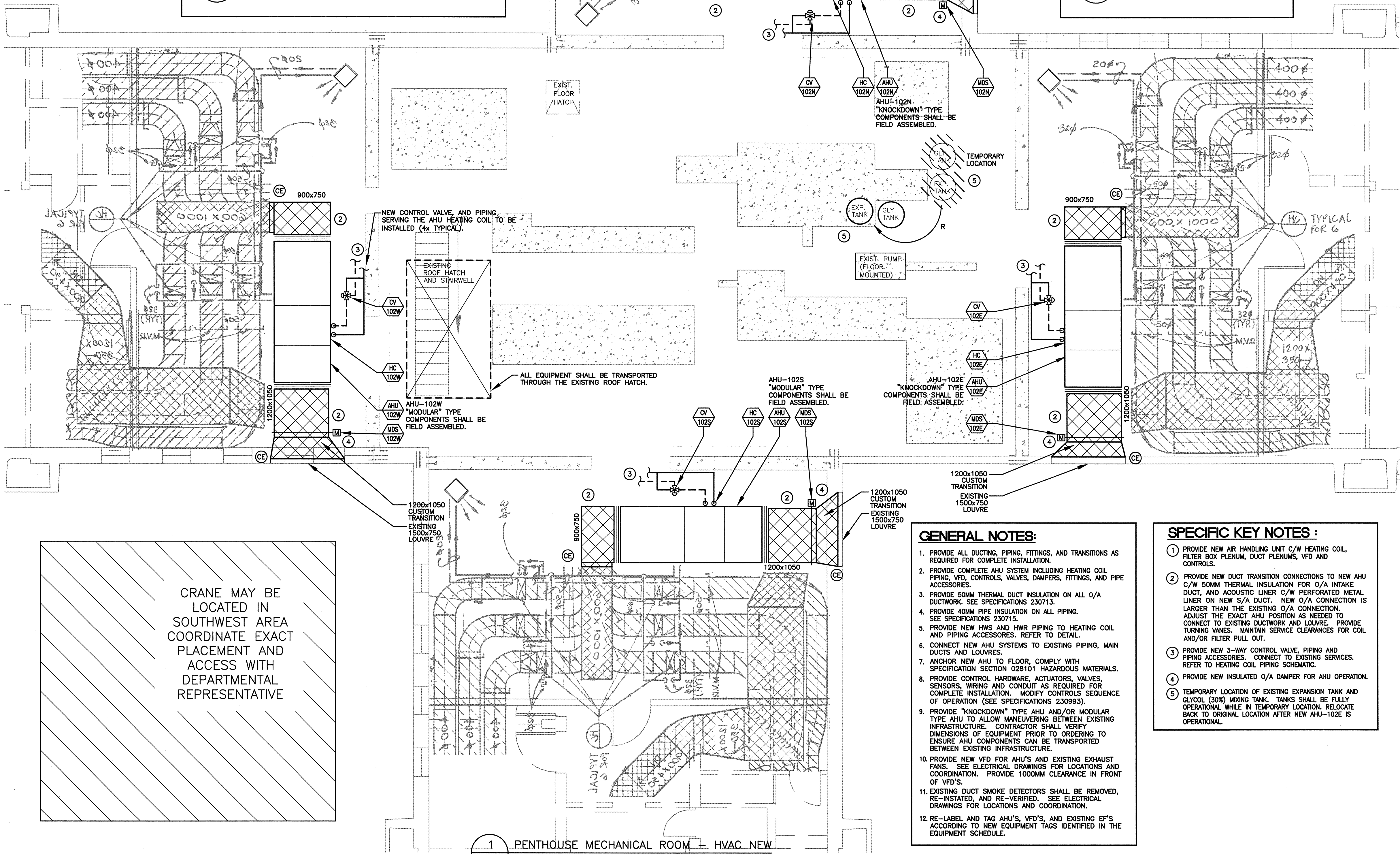
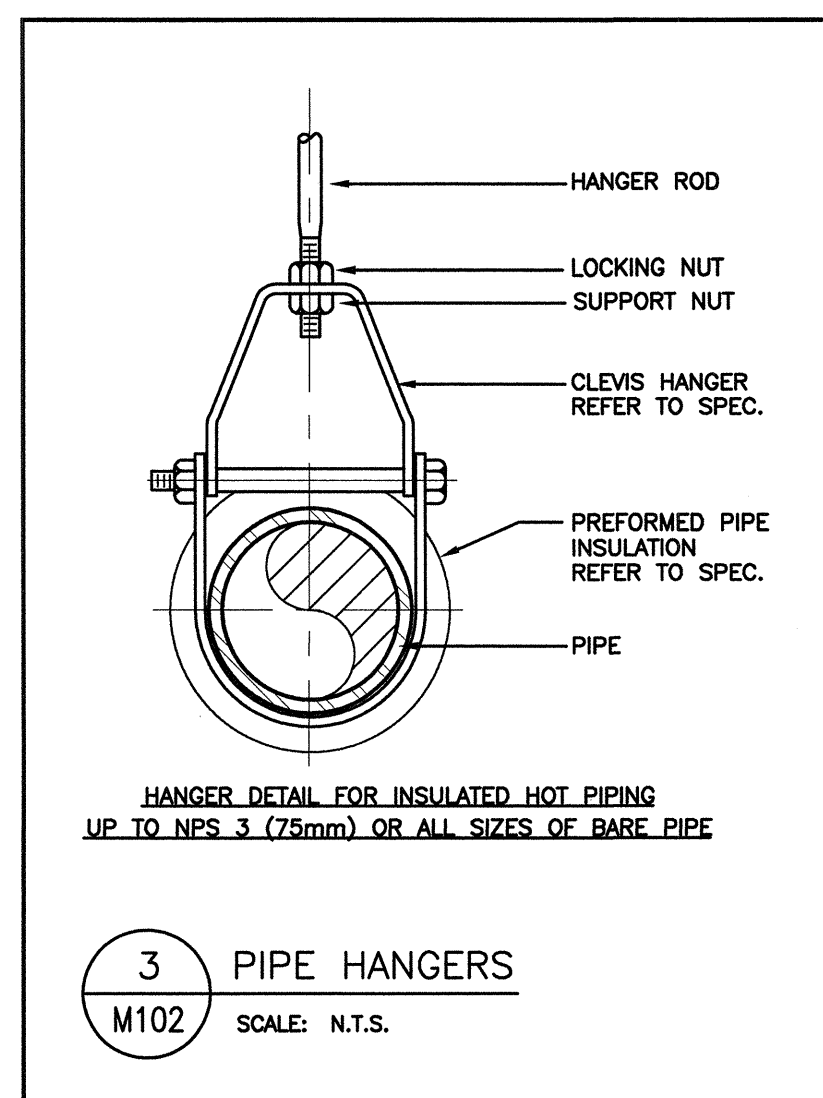
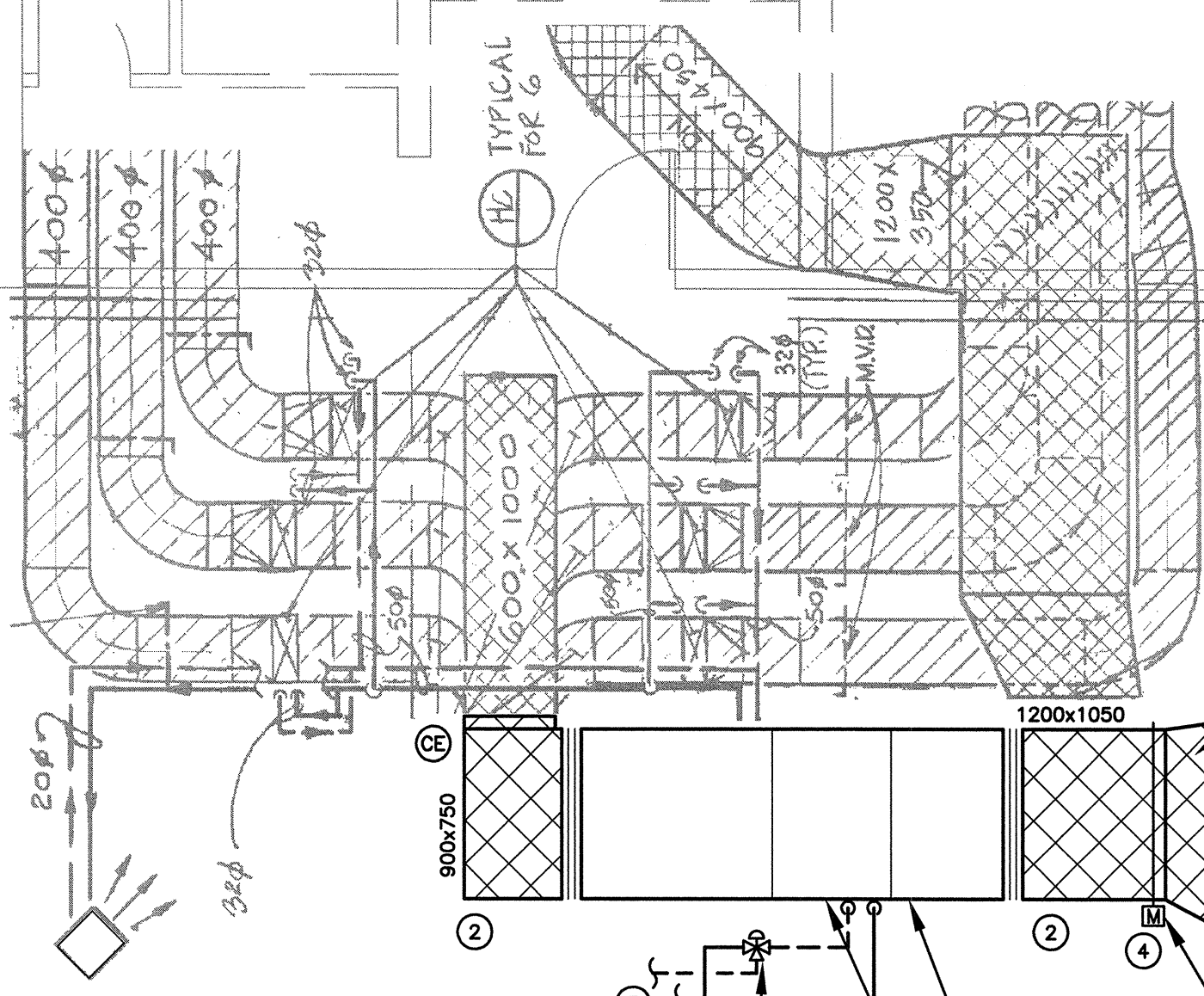
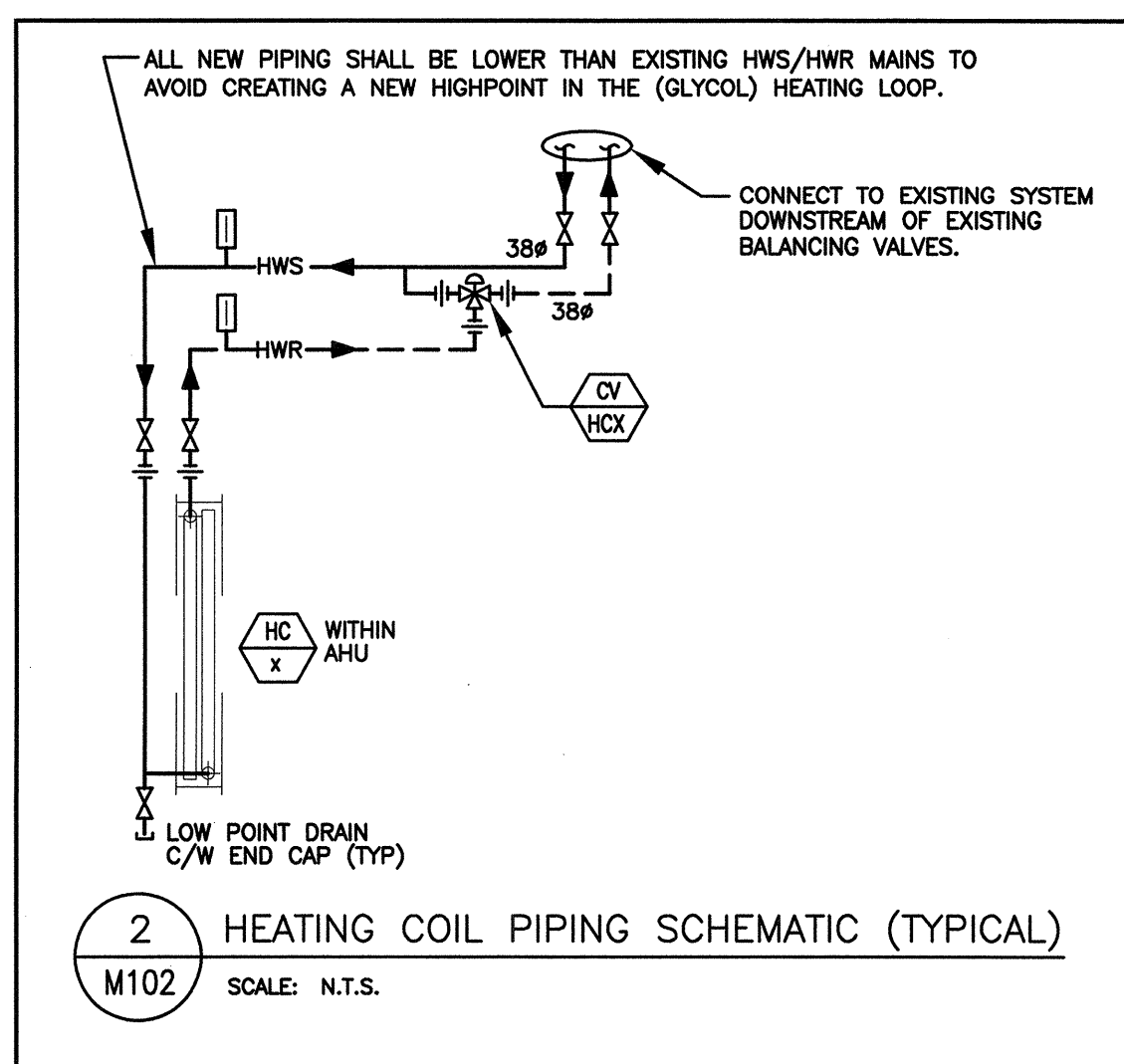
1. ALL CONSTRUCTION MATERIALS SHALL BE TRANSPORTED TO/FROM THE PENTHOUSE THROUGH THE EXISTING PENTHOUSE ROOF HATCH (ACCESS DOORS).
2. MECHANICAL EQUIPMENT SHALL BE CAREFULLY HANDLED WHILE WITHIN THE PENTHOUSE TO NOT MARK OR DAMAGE ADJACENT EQUIPMENT.
3. REMOVE EXISTING MECHANICAL EQUIPMENT AND REPLACE WITH NEW AS NOTED.
4. REMOVE AND STORE EXISTING AHU CONTROL HARDWARE THAT IS TO BE REINSTALLED TO NEW SYSTEM.
5. REFER TO ELECTRICAL DRAWINGS FOR DUCT SMOKE DETECTORS AND FIRE ALARM VERIFICATION.
6. REMOVE EXISTING DUCTING AND PIPING, AND REPLACE WITH NEW AS REQUIRED FOR INSTALLATION OF NEW AHU SYSTEM.
7. PROVIDE TEMPORARY PIPE AND DUCT CAPS AS REQUIRED TO ACCOMMODATE THE EQUIPMENT REPLACEMENTS.
8. REMOVE EXISTING WFD'S SERVING AHU'S AND EP'S. SEE ELECTRICAL DRAWINGS FOR LOCATIONS AND COORDINATION.

SPECIFIC KEY NOTES :

1. REMOVE EXISTING AIR HANDLING UNIT SYSTEM.
2. REMOVE MAIN DUCT TRANSITION CONNECTIONS AS NEEDED FOR PLACEMENT OF NEW AHU. EXISTING O/A CONNECTION IS SMALLER THAN THE NEW O/A CONNECTION.
3. REMOVE HEATING COIL PIPING, 3-WAY VALVE, AND ALL PIPING ACCESSORIES, AND REPLACE WITH NEW.
4. DEMOLISH EXISTING CONCRETE PONY-WALL TO ALLOW BETTER SERVICE ACCESS TO THE NEW AHU. APPROXIMATE DIMENSIONS OF CONCRETE: 1200x750x300.
5. RELOCATE EXISTING EXPANSION TANK AND GLYCOL (30%) MIXING TANK. ASSOCIATED PIPING AND CONNECTIONS TO TEMPORARY LOCATION. TANKS SHALL BE FULLY OPERATIONAL WHILE IN TEMPORARY LOCATION. MOVE AND RE-INSTALL BACK INTO ORIGINAL LOCATION ONCE NEW AHU HAS BEEN FULLY INSTALLED.
6. DISCONNECT AND REPOSITION EXISTING METAL STAIRWELL AS NEEDED TO ALLOW MECHANICAL EQUIPMENT TO BE DELIVERED INTO THE PENTHOUSE. RE-INSTALL INTO ORIGINAL LOCATION ONCE NEW AHU'S HAVE BEEN FULLY INSTALLED.
7. EXISTING FLOOR MOUNTED PUMP SYSTEM SHALL REMAIN. EQUIPMENT SHALL BE CAREFULLY MOVED AROUND THE PUMP AND PIPING ASSEMBLY.

1 PENTHOUSE MECHANICAL ROOM - HVAC EXISTING
 M101 SCALE: 1:50



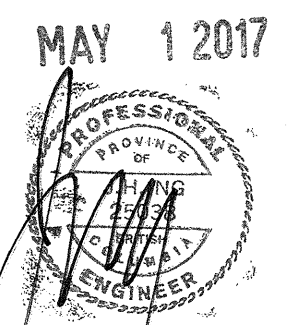


CRANE MAY BE LOCATED IN SOUTHWEST AREA COORDINATE EXACT PLACEMENT AND ACCESS WITH DEPARTMENTAL REPRESENTATIVE

- GENERAL NOTES:**
1. PROVIDE ALL DUCTING, PIPING, FITTINGS, AND TRANSITIONS AS REQUIRED FOR COMPLETE INSTALLATION.
 2. PROVIDE COMPLETE AHU SYSTEM INCLUDING HEATING COIL, PIPING, VFD, CONTROLS, VALVES, DAMPERS, FITTINGS, AND PIPE ACCESSORIES.
 3. PROVIDE 50MM THERMAL DUCT INSULATION ON ALL O/A DUCTWORK. SEE SPECIFICATIONS 230713.
 4. PROVIDE 40MM PIPE INSULATION ON ALL PIPING. SEE SPECIFICATIONS 230715.
 5. PROVIDE NEW HWS AND HWR PIPING TO HEATING COIL AND PIPING ACCESSORIES. REFER TO DETAIL.
 6. CONNECT NEW AHU SYSTEMS TO EXISTING PIPING, MAIN DUCTS AND LOUVRES.
 7. ANCHOR NEW AHU TO FLOOR, COMPLY WITH SPECIFICATION SECTION 028101 HAZARDOUS MATERIALS.
 8. PROVIDE CONTROL HARDWARE, ACTUATORS, VALVES, SENSORS, WIRING AND CONDUIT AS REQUIRED FOR COMPLETE INSTALLATION. MODIFY CONTROLS SEQUENCE OF OPERATION (SEE SPECIFICATIONS 230993).
 9. PROVIDE "KNOCKDOWN" TYPE AHU AND/OR MODULAR TYPE AHU TO ALLOW MANEUVERING BETWEEN EXISTING INFRASTRUCTURE. CONTRACTOR SHALL VERIFY DIMENSIONS OF EQUIPMENT PRIOR TO ORDERING TO ENSURE AHU COMPONENTS CAN BE TRANSPORTED BETWEEN EXISTING INFRASTRUCTURE.
 10. PROVIDE NEW VFD FOR AHU'S AND EXISTING EXHAUST FANS. SEE ELECTRICAL DRAWINGS FOR LOCATIONS AND COORDINATION. PROVIDE 100MM CLEARANCE IN FRONT OF VFD'S.
 11. EXISTING DUCT SMOKE DETECTORS SHALL BE REMOVED, RE-INSTALLED, AND RE-VERIFIED. SEE ELECTRICAL DRAWINGS FOR LOCATIONS AND COORDINATION.
 12. RE-LABEL AND TAG AHU'S, VFD'S, AND EXISTING EF'S ACCORDING TO NEW EQUIPMENT TAGS IDENTIFIED IN THE EQUIPMENT SCHEDULE.

- SPECIFIC KEY NOTES:**
1. PROVIDE NEW AIR HANDLING UNIT C/W HEATING COIL, FILTER BOX PLENUM, DUCT PLENUMS, VFD AND CONTROLS.
 2. PROVIDE NEW DUCT TRANSITION CONNECTIONS TO NEW AHU C/W 50MM THERMAL INSULATION FOR O/A INTAKE DUCT, AND ACOUSTIC LINER C/W PERFORATED METAL LINER ON NEW S/A DUCT. NEW O/A CONNECTION IS LARGER THAN THE EXISTING O/A CONNECTION. ADJUST THE EXACT AHU POSITION AS NEEDED TO CONNECT TO EXISTING DUCTWORK AND LOUVRE. PROVIDE TURNING VANES. MAINTAIN SERVICE CLEARANCES FOR COIL AND/OR FILTER PULL OUT.
 3. PROVIDE NEW 3-WAY CONTROL VALVE, PIPING AND PIPING ACCESSORIES. CONNECT TO EXISTING SERVICES. REFER TO HEATING COIL PIPING SCHEMATIC.
 4. PROVIDE NEW INSULATED O/A DAMPER FOR AHU OPERATION.
 5. TEMPORARY LOCATION OF EXISTING EXPANSION TANK AND GLYCOL (30%) MIXING TANK. TANKS SHALL BE FULLY OPERATIONAL WHILE IN TEMPORARY LOCATION. RELOCATE BACK TO ORIGINAL LOCATION AFTER NEW AHU-102E IS OPERATIONAL.

1 PENTHOUSE MECHANICAL ROOM - HVAC NEW
M102 SCALE: 1:50



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PREETIPAL PAUL

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PENTHOUSE PLAN
HVAC NEW

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AIR HANDLING UNIT SCHEDULE													
NEW TAG NO.	SERVICE	TYPE	INSTALLATION	SUPPLY AIR FLOW Max. L/S	OUTDOOR AIR FLOW Max. L/S	EXTERNAL S.P. Pa	FAN MOTOR	UNIT ELECTRICAL	WEIGHT KG	NOTES	BASIS OF DESIGN		ACCEPTABLE MATERIALS
							HP	VOLT/PH/Hz			MAKE	MODEL	
AHU-102N	NORTH WING	INDOOR, HEATING ONLY	KNOCKDOWN	3057	3057	625	7.5	208/3/60	655	1 TO 11	CLIMATE CRAFT	20MTX100	ENGINEERED AIR, HAAKON, CLIMATE CHANGER
AHU-102S	SOUTH WING	INDOOR, HEATING ONLY	MODULAR										
AHU-102W	WEST WING	INDOOR, HEATING ONLY	MODULAR										
AHU-102E	EAST WING	INDOOR, HEATING ONLY	KNOCKDOWN	3688	3688	625	7.5	208/3/60	655	1 TO 11	CLIMATE CRAFT	20MTX100	ENGINEERED AIR, HAAKON, CLIMATE CHANGER

NOTES:
1. SEE SPECIFICATIONS SECTION 230710 AIR HANDLING UNITS.
2. PROVIDE MERV-8 FILTERS.
3. PROVIDE ACCESS DOORS C/W GASKET (SEALS) AROUND DOORS.
4. PROVIDE SINGLE POINT POWER CONNECTION, AND LOCAL DISCONNECT.
5. PROVIDE CONTROLS INTERFACE TO ALLOW CONNECTION INTO EXISTING BMS.
6. C/W VARIABLE SPEED (FREQUENCY) DRIVE, SHIPPED LOOSE FOR FIELD INSTALLATION. SEE VARIABLE FREQUENCY DRIVE SCHEDULE.
7. C/W HYDRONIC HEATING COIL. SEE HEATING COIL SCHEDULE.
8. C/W CONTROLS AND ACCESSORIES, SEE SPECIFICATIONS SECTIONS 230901, 230913, 230993, 230994. COORDINATE AND PROVIDE AS REQUIRED.
9. MAXIMUM AHU COMPONENT SIZES (KNOCKED DOWN): 750MMx900MMx900MM, TO ALLOW MANEUVERING. CONTRACTOR TO VERIFY COMPONENT DIMENSIONS PRIOR TO ORDERING AHU.
10. C/W FLEX CONNECTORS AT AHU INLET AND OUTLETS.
11. INLET (O/A) OPENING = 1200x1050; OUTLET (S/A) OPENING = 900x750.

HEATING COIL SCHEDULE																		
NEW TAG NO.	SERVICE	TOTAL CAPACITY KW	AIR				FLUID				HEADER DIAM. # MM (IN)	NO. OF ROWS (H)	MAX. FACE VELOCITY M/S	NOTES	BASIS OF DESIGN		ACCEPTABLE MATERIALS	
			AIR FLOW L/S	EAT °C	LAT °C	AIR P.D. PA	FLUID FLOW L/S	EWT °C	LWT °C	FLUID P.D. KPA					GLYCOL (%)	MAKE		MODEL
HC-102N	AHU-102N	96.9	3057	-11.1	15.1	45	1.37	82.2	65.0	6.6	30%	38	2	3.5	1	CLIMATE CRAFT	58WC39x035-02-06-AW	ENGINEERED AIR, HAAKON, CLIMATE CHANGER
HC-102S	AHU-102S																	
HC-102W	AHU-102W																	
HC-102E	AHU-102E	116.8	3688	-11.1	15.1	65	1.59	82.2	65.0	8.6	30%	38	2	4.0	1	CLIMATE CRAFT	58WC39x035-02-06-AW	

NOTES:
1. EQUIPMENT IS PART OF THE AHU. REFER TO SPECIFICATIONS SECTION 230710 AIR HANDLING UNITS.

VARIABLE FREQUENCY DRIVE SCHEDULE				
NEW TAG NO.	SERVICE	POWER HP	VOLTAGE	NOTES
VFD-AHU-102N	NEW AHU-102N	7.5	208/3/60	1,2,3,5
VFD-AHU-102S	NEW AHU-102S			
VFD-AHU-102W	NEW AHU-102W			
VFD-AHU-102E	NEW AHU-102E			
VFD-EF-102N	EXIST. EF-102N (PREVIOUSLY EF4-N)	2.0	208/3/60	1,2,4,5
VFD-EF-102S	EXIST. EF-102S (PREVIOUSLY EF2-S)			
VFD-EF-102W	EXIST. EF-102W (PREVIOUSLY EF3-W)			
VFD-EF-102E	EXIST. EF-102E (PREVIOUSLY EF1-E)			

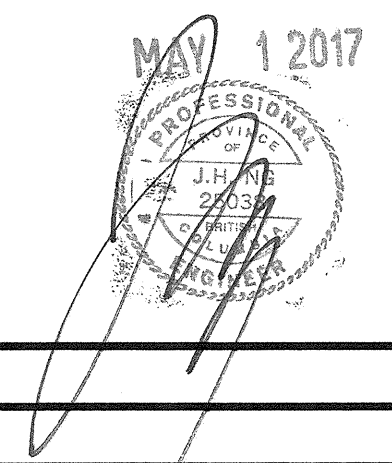
NOTES:
1. SEE SPECIFICATIONS SECTION 230913 CONTROL DEVICES AND INSTRUMENTATION.
2. CONNECT TO DDC.
3. EQUIPMENT IS PART OF AHU. SEE SPECIFICATIONS SECTION 230710 AIR HANDLING UNITS.
4. CONNECT TO EXISTING EXHAUST FAN.
5. SHIPPED LOOSE FOR FIELD INSTALLATION.

CONTROL VALVE SCHEDULE						
NEW TAG NO.	LOCATION	TYPE	FLOW (L/S)	MAX. P.D. (PA)	CV	NOTES
CV-HC102N	MECH. ROOM	MODULATING 3-WAY	SEE HC SCHEDULE	20.6	8.0	1
CV-HC102S	MECH. ROOM	MODULATING 3-WAY	SEE HC SCHEDULE	20.6	8.0	1
CV-HC102W	MECH. ROOM	MODULATING 3-WAY	SEE HC SCHEDULE	20.6	8.0	1
CV-HC102E	MECH. ROOM	MODULATING 3-WAY	SEE HC SCHEDULE	20.6	8.0	1

NOTES:
1. SEE SPECIFICATIONS SECTION 230913 CONTROL DEVICES AND INSTRUMENTATION.

MOTORIZED DAMPER SCHEDULE							
NEW TAG NO.	SERVICE	MANUF.	MODEL	MAX. AIR FLOW (L/S)	DUCT SIZE (MM)	NOTES	ACCEPTABLE MATERIALS
MDS-102N	AHU-102N	RUSKIN	CD40X2	3057	1200x1050	1,2,3,4,5	E.H. PRICE, NAILOR
MDS-102S	AHU-102S	RUSKIN	CD40X2	3057	1200x1050	1,2,3,4,5	E.H. PRICE, NAILOR
MDS-102W	AHU-102W	RUSKIN	CD40X2	3057	1200x1050	1,2,3,4,5	E.H. PRICE, NAILOR
MDS-102E	AHU-102E	RUSKIN	CD40X2	3688	1200x1050	1,2,3,4,5	E.H. PRICE, NAILOR

NOTES:
1. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALUMINUM CONSTRUCTION, LOW-LEAKAGE, PARALLEL BLADE.
3. C/W MOTORIZED ELECTRIC ACTUATORS (LOW VOLTAGE) AND ALL CONTROL HARDWARE, TRANSFORMERS, AND WIRING.
4. C/W INSULATED BLADES.
5. VERIFY THE FINAL INSTALLED DUCT SIZE PRIOR TO ORDERING DAMPERS.



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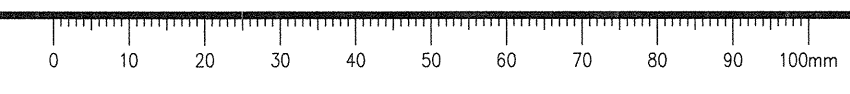
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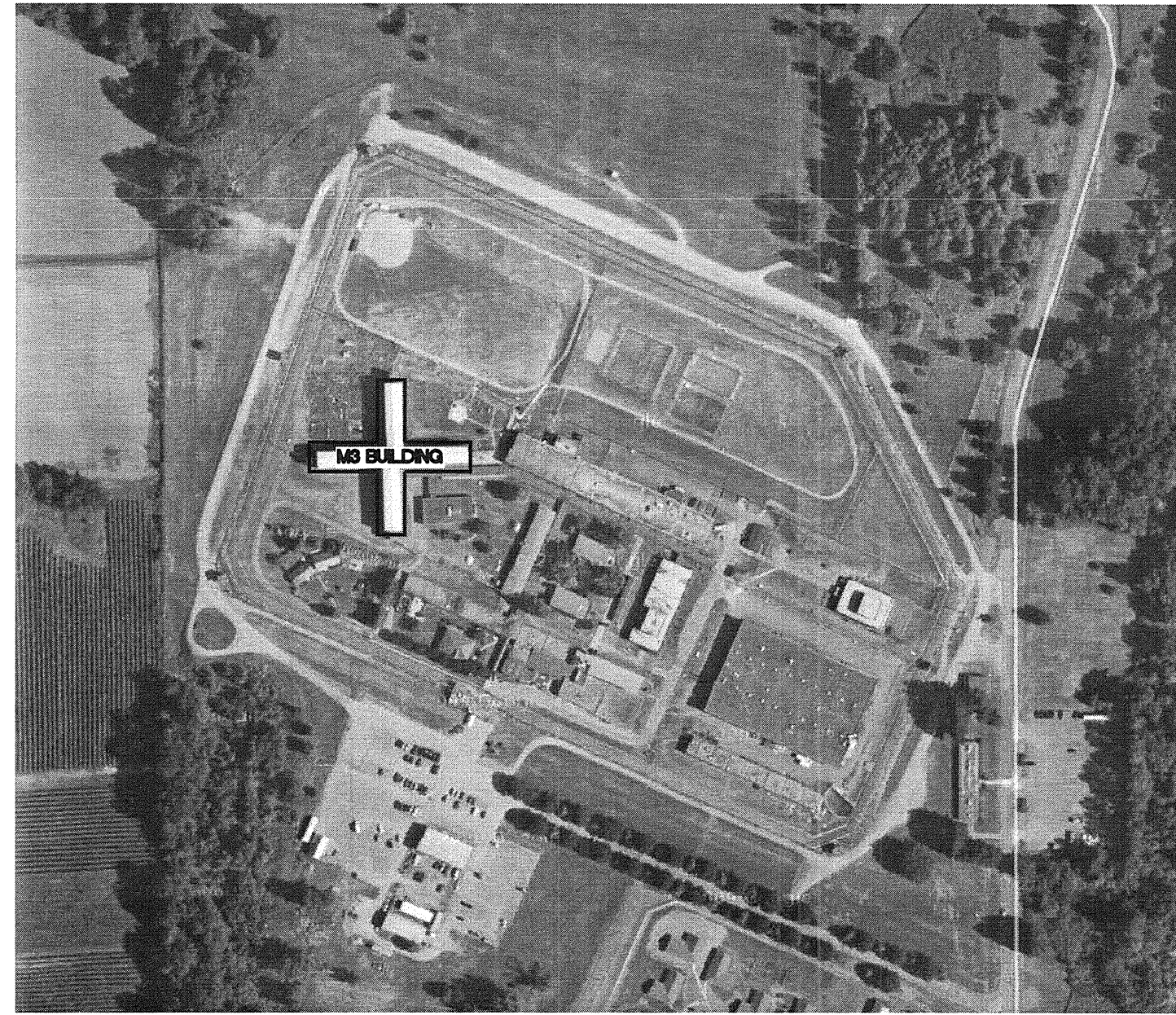
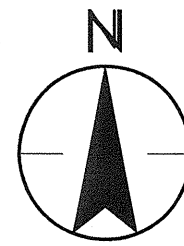
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MECHANICAL EQUIPMENT SCHEDULES

Project No./No. du projet R.082466.001	Sheet/Feuille M400 4 OF 4	Revision no./La Révision no. 1
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1 SITE PLAN
E-001 SCALE: N.T.S.

PANEL: "H"							LOCATION: MECH. PENTHOUSE EXIST. 225A, 120/208V, 3PH, 4W	
NOTE TYPE	DESCRIPTION	BRKR	CCT	PHASE	CCT	BRKR	DESCRIPTION	TYPE NOTE
2 M	EXHAUST FAN, EF-102E	3P	1	A	2	3P	TEMP FLOOR GRINDER	E
M		15	3	B	4	15		E
M		A	5	C	6	A		E
2 M	EXHAUST FAN, EF-102S	3P	7	A	8	3P	APPLIED COASTING BREAKER	M
M		15	9	B	10	60		M
M		A	11	C	12	A		M
2 M	EXHAUST FAN, EF-102W	3P	13	A	14	15	SPARE	M
M		15	15	B	16	20		M
M		A	17	C	18	A		M
2 M	EXHAUST FAN, EF-102N	3P	19	A	20	3P	SPARE	M
M		15	21	B	22	15		M
M		A	23	C	24	A		M
3 M	SPARE	3P	25	A	26	1P15A	DDC HVAC CONTROL PANEL	R
M		60	27	B	28	1P15A	TRANSFORMER PANEL CCT	R
M		A	29	C	30	1P15A	PUMP, AHU-101	M
R	TEMP PLUGS BELOW PANEL	2P	31	A	32	1P15A	RECEPTACLE, AHU-101	R
R		15A	33	B	34	1P15A	CONTROL CIRCUIT, AHU-101	R
M		2P	35	C	36	2P	TEMP PLUGS BELOW PANEL	R
M	AC-1	1P15A	37	A	38	15A		R
M	AC-1	1P15A	39	B	40	2P		M
			41	C	42	30A	AC-2	M

NOTE DESCRIPTION
 1 LIGHTLY SHADED TEXT INDICATES EXISTING CIRCUITS TO REMAIN; DARK SHADED TEXT INDICATES NEW CIRCUITS
 2 UPDATE PANEL DIRECTORY TO REFLECT UPDATED LABELLING.
 3 DECOMMISSION EXISTING BREAKER FOR AHU-101 SUPPLY FAN TO BE SPARE

PANEL: "D"							LOCATION: MECH. PENTHOUSE EXIST. 400A, 120/208V, 3PH, 4W	
NOTE TYPE	DESCRIPTION	BRKR	CCT	PHASE	CCT	BRKR	DESCRIPTION	TYPE NOTE
M	SPARE (OFF)	3P	1	A	2	1P20A	HEAT TRACE SHAFT 1 - 3 E.WING	H
M		50	3	B	4	1P20A	HEAT TRACE SHAFT 6 - 10 E.WING	H
M		A	5	C	6	1P20A	HEAT TRACE SHAFT 11 - 14 E.WING	H
2 M	AIR HANDLING UNIT, AH-102N NORTH AREA	3P	7	A	8	3P	EXHAUST FAN, EF-101 W/R PENTHOUSE	M
M		60	9	B	10	40		M
M		A	11	C	12	A		M
2 M	AIR HANDLING UNIT, AH-102S SOUTH WING	3P	13	A	14	3P	CONDENSING UNIT, CU-101 PENTHOUSE	M
M		60	15	B	16	20		M
M		A	17	C	18	A		M
2 M	AIR HANDLING UNIT, AH-102W WEST WING	3P	19	A	20	3P	CONDENSING UNIT, CU-101 PENTHOUSE	M
M		60	21	B	22	20		M
M		A	23	C	24	A		M
2 M	AIR HANDLING UNIT, AH-102E EAST WING	3P	25	A	26	3P	CONDENSING UNIT, CU-101 PENTHOUSE	M
M		60	27	B	28	20		M
M		A	29	C	30	A		M
H	OFFICE HEAT	2P	31	A	32	3P	PUMP, P-101 PENTHOUSE MAIN HEATING PUMP	M
H		30A	33	B	34	40		M
H	OFFICE HEAT	2P	35	C	36	A	PUMP, P-101 PENTHOUSE MAIN HEATING PUMP	M
H		30A	37	A	38	3P		M
H	SPRINKLER RM. HEAT	2P	39	B	40	40		M
H		20A	41	C	42	A		M

NOTE DESCRIPTION
 1 LIGHTLY SHADED TEXT INDICATES EXISTING CIRCUITS TO REMAIN; DARK SHADED TEXT INDICATES NEW CIRCUITS
 2 REPLACE EXISTING 3P-50A BREAKER WITH NEW BREAKER AS INDICATED.
 3

PANEL SCHEDULES - GENERAL NOTES:

- PANEL H IS EXISTING CUTLER HAMMER, 3CBL242, LOAD CENTRE.

REF. NO.	DESCRIPTION	LOCATION	MCC / PANEL CCT NO.	HP	KW	VOLT	PHASE	STAND-BY POWER	CIRCUIT BREAKER RATING / AMP	CONDUCTOR QUANTITY (EXCL GROUND) AND SIZE	CONDUIT SIZE (mm)	STARTER / VFD				PILOT				DISCONNECT				NOTES
												TYPE	SUPPLY	INSTALL	WIRE	TYPE	SUPPLY	INSTALL	WIRE	TYPE	SUPPLY	INSTALL	WIRE	
AHU-102N	AIR HANDLING UNIT	MECH. RM. - PENTHOUSE	D-7.8.11	7.5	208	3			3P-60	3#8	EXIST.	VSD	M	M	E	BAS	M	M	M	M	E	E	1,2,3	
AHU-102E	AIR HANDLING UNIT	MECH. RM. - PENTHOUSE	D-13.15.17	7.5	208	3			3P-60	3#8	EXIST.	VSD	M	M	E	BAS	M	M	M	M	E	E	1,2,3	
AHU-102S	AIR HANDLING UNIT	MECH. RM. - PENTHOUSE	D-19.21.23	7.5	208	3			3P-60	3#8	EXIST.	VSD	M	M	E	BAS	M	M	M	M	E	E	1,2,3	
AHU-102W	AIR HANDLING UNIT	MECH. RM. - PENTHOUSE	D-25.27.29	7.5	208	3			3P-60	3#8	EXIST.	VSD	M	M	E	BAS	M	M	M	M	E	E	1,2,3	
EF-102E	EXHAUST FAN (VFD ONLY) - EAST	MECH. RM. - PENTHOUSE	H-13.5	3	208	3			3P-15	3#12	EXIST.	VSD	M	M	E	BAS	M	M	M	M	E	E	1	
EF-102S	EXHAUST FAN (VFD ONLY) - SOUTH	MECH. RM. - PENTHOUSE	H-9.9.11	3	208	3			3P-15	3#12	EXIST.	VSD	M	M	E	BAS	M	M	M	M	E	E	1	
EF-102W	EXHAUST FAN (VFD ONLY) - WEST	MECH. RM. - PENTHOUSE	H-13.15.17	3	208	3			3P-15	3#12	EXIST.	VSD	M	M	E	BAS	M	M	M	M	E	E	1	
EF-102N	EXHAUST FAN (VFD ONLY) - NORTH	MECH. RM. - PENTHOUSE	H-19.21.23	3	208	3			3P-15	3#12	EXIST.	VSD	M	M	E	BAS	M	M	M	M	E	E	1	

MOTOR STARTING:
 D - DIRECT ACROSS THE LINE
 D-R - FORWARD/REVERSING
 SD - STAR-DELTA STARTING
 SD-R - STAR-DELTA (REVERSIBLE)
 CS - SOFT STARTER
 CS-R - SOFT STARTER (REVERSIBLE)
 FC - FREQUENCY CONVERTER
 FC-R - FREQUENCY CONVERTER (REVERSIBLE)
 VSD - VARIABLE SPEED DRIVE

PARTIES RESPONSIBLE:
 E - ELECTRICAL
 M - MECHANICAL
 O - OWNER

NOTES:
 1. WIRING TO STARTER IS EXISTING. EXTEND CONDUCTORS AS NECESSARY. PROVIDE NEW BREAKER AS INDICATED.
 2. REMOVE AND REINSTALL FIRE ALARM DUCT SMOKE DETECTOR LOCATED IN AIR HANDLING UNIT. PROVIDE VERIFICATION REPORT IN ACCORDANCE WITH CANULC STANDARD 8537
 3. DUCT SMOKE DETECTOR TO SHUT DOWN AIR HANDLING UNIT UPON ACTIVATION OF THE FIRE ALARM SYSTEM.

ELECTRICAL SYMBOLS	
	POWER PANEL BOARD
	MOTOR c/w DISCONNECT SWITCH
	MOTOR C/W MANUAL MOTOR SWITCH
	MOTOR C/W MOTOR STARTER OF TYPE AS INDICATED
	CONTROL PANEL, AS NOTED
	FIRE ALARM SMOKE DETECTOR, DUCT MOUNTED
E	EXISTING TO REMAIN
R	EXISTING TO BE REMOVED
RE	REPLACE EXISTING DEVICE WITH NEW AS NOTED
TYP	TYPICAL

- ELECTRICAL GENERAL NOTES**
- ANY CIRCUITING SHOWN IS FOR REFERENCE ONLY. ELECTRICAL CONTRACTOR TO CONFIRM AVAILABLE CIRCUITS IN PANELS. ACTUAL CIRCUITS TO BE INDICATED ON RECORD DRAWINGS.
 - CONTRACTOR SHALL KEEP EXISTING FIRE ALARM SYSTEM AND DEVICES ACTIVE DURING CONSTRUCTION. THERE SHALL BE NO DISRUPTION TO THE SYSTEM.
 - CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING DEVICES AND EQUIPMENT THAT REMAIN. CONTRACTOR SHALL EXTEND, REMOVE OR RELOCATE ALL ELECTRICAL DEVICES AS NOTED AND REQUIRED TO MEET THE DESIGN INTENT.
 - EXISTING CIRCUITS AND DEVICES ARE SHOWN FOR REFERENCE AND DESIGN CLARITY ONLY.
 - EXISTING ELECTRICAL EQUIPMENT, DEVICES AND WIRING ETC. TO BE RETAINED THAT ARE MOUNTED IN OR ON WALLS THAT ARE REMOVED, RELOCATED OR REFINISHED SHALL BE RELOCATED IN A CONCEALED MANNER TO SUIT NEW CONDITIONS.
 - EXISTING SITE AND BUILDING INFORMATION ON THESE DRAWINGS WERE OBTAINED FROM INFORMATION PROVIDED BY OTHERS AND FROM SITE VISITS THAT MAY NOT HAVE UNCOVERED ALL UNFORSEEN/HIDDEN ITEMS OR CONDITIONS. CONTRACTOR SHALL VERIFY EXISTING SITE CONDITIONS AND IMMEDIATELY NOTIFY ENGINEER OF ANY SITE CONDITION THAT MIGHT HINDER OR OBSTRUCT THE ELECTRICAL INSTALLATION AND/OR DESIGN INTENT.
 - APPROXIMATE LOCATIONS OF EXISTING AND NEW DEVICES ARE SHOWN. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING DEVICES. CONTRACTOR SHALL CONFIRM EXACT MEASUREMENTS AND LOCATIONS ON SITE. CONTRACTOR SHALL CONFIRM WIRE SIZE ON SITE AND VERIFY VOLTAGE DROP CALCULATIONS, TO ENSURE CORRECT WIRE SIZING AND SYSTEM OPERATION.
 - CONTRACTOR SHALL FIELD VERIFY AND TEST ALL MODIFIED ELECTRICAL AND CONTROL SYSTEMS TO ENSURE THEY ARE FULLY FUNCTIONAL AND OPERATIONAL AS PER THE DESIGN INTENT. SUBMIT TEST RESULTS TO ENGINEER.
 - CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONDUIT, CONDUCTORS, JUNCTION BOXES AND RECEPTACLES UNLESS OTHERWISE NOTED ON THE DRAWINGS.
 - CONTRACTOR SHALL READ THESE DRAWINGS IN CONJUNCTION WITH THE CANADIAN ELECTRICAL CODE (CURRENT EDITION), MECHANICAL DRAWINGS, NATIONAL BUILDING CODE (CURRENT EDITION), AND ALL OTHER PROJECT RELATED DOCUMENTATION. SCOPE OF WORK IS NOT LIMITED TO THESE DRAWINGS BUT INCLUDES ALL ITEMS AS LISTED ON DRAWINGS, SPECIFICATION, AND ALL OTHER PROJECT RELATED DOCUMENTATION.
 - FIELD COORDINATE ELECTRICAL DEVICES AND EQUIPMENT WITH OTHER DIVISIONS ON SITE. ADJUST ELECTRICAL DEVICE AND EQUIPMENT PLACEMENT AS REQUIRED TO SUIT FIELD CONDITIONS. ALL NEW ELECTRICAL INSTALLATION SHALL BE IN CONFORMANCE WITH THE CANADIAN ELECTRICAL CODE (CURRENT EDITION) AND BC BUILDING CODE (CURRENT EDITION) INCLUDING CLEARANCES AND SETBACKS.
 - CONTRACTOR SHALL COORDINATE INSTALLATION OF ELECTRICAL DEVICES AND COMPONENTS WITH EQUIPMENT MANUFACTURERS AND SUPPLIER. NOT ALL SYSTEM COMPONENTS ARE SHOWN. CONTRACTOR SHALL PROVIDE ALL COMPONENTS, DEVICES, AND MATERIAL AS REQUIRED TO ENSURE INSTALLATION OF A COMPLETE AND FUNCTIONAL SYSTEM.
 - CONTRACTOR SHALL CONFIRM WIRING SIZING AND PERFORM VOLTAGE DROP CALCULATIONS FOR EACH WIRE RUN BACK TO EACH SOURCE PANEL.
 - ALL WIRING SHALL BE INSTALLED IN CONDUIT SYSTEMS AS INDICATED. ALL CONDUITS SHALL BE SECURELY FASTENED TO THE BUILDING STRUCTURE.
 - ENSURE THAT POWER, FIRE ALARM AND CONTROL WIRING TO BE IN SEPARATE CONDUIT SYSTEMS.
 - CONTRACTOR SHALL BOND ALL NON-CURRENT CARRYING METAL PARTS OF THE SYSTEM AS REQUIRED BY CODE. ENSURE ALL PARTS OF THE SYSTEM ARE GROUNDED AND EXISTING GROUNDING AND BONDING SYSTEMS ARE PROTECTED AND MAINTAIN CONDUCTIVITY. ALL BOND CONDUCTORS TO BE COPPER COMPRESSION TYPE AND GROUND CONDUCTORS TO BE SOLID COPPER.
 - CONTRACTOR SHALL VERIFY THE NEW ELECTRICAL SYSTEMS ARE TESTED, COMMISSIONED, AND READY FOR USE PRIOR TO TURNOVER TO THE OWNER. CONTRACTOR SHALL FIELD TEST THE ENTIRE SYSTEM AND ENSURE IT IS OPERATIONAL AND READY FOR USE. CONTRACTOR SHALL COORDINATE WITH MANUFACTURER OF ALL SYSTEMS AND COMMISSION AS PART OF THIS SCOPE OF WORK. ALL TEST AND COMMISSIONING REPORTS SHALL BE SUBMITTED TO ENGINEER.
 - UNLESS OTHERWISE NOTED ALL GROUNDING WIRES COLORS SHALL BE GREEN WITH A YELLOW STRIPE.

DRAWING LIST:		
NAME	DESCRIPTION	SCALE
E001	SITE PLAN, DRAWING LIST, GENERAL NOTES, ELECTRICAL LEGEND	N.T.S.
E101	PENTHOUSE ELECTRICAL FLOOR PLAN, SCHEDULES AND DETAILS	1:50

Revision/Revision	Description/Description	Date/Date
1	ISSUED FOR TENDER	2017.05.01

Client/client

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 Gestionnaire régionale, Services d'architecture et de génie, TPSSC
PREETIPAL PAUL

Drawing Title/Titre du dessin

**SITE PLAN, DRAWING LIST,
 GENERAL NOTES
 ELECTRICAL LEGEND**

Project No./No. du projet
R.082466.001

Sheet/Feuille
E001
 1 OF 2

Revision no./
 La Révision no.
1

