

GENERAL NOTES

- THE CONTRACTOR SHALL CO-ORDINATE WITH THE STRUCTURAL TO PROVIDE OPENINGS AND SLEEVES THROUGH STRUCTURAL ELEMENTS WHERE REQUIRED.
- DO NOT SCALE DRAWINGS FOR INSTALLATION PURPOSES. OBTAIN ALL DIMENSIONS FROM ARCHITECTURAL PLANS, MANUFACTURER'S SHOP DRAWINGS, AND ON SITE INSPECTIONS.
- MECHANICAL, DIV. 2-14 AND ELECTRICAL TRADES SHALL WORK IN CONJUNCTION WITH ONE ANOTHER SO AS TO AVOID INTERFERENCE'S BETWEEN PIPING, DUCTWORK, CONDUIT, LIGHTING FIXTURES, ETC.
- WORK SHALL BE CO-ORDINATED THROUGH THE GENERAL CONTRACTOR PRIOR TO INSTALLATION OF ANY EQUIPMENT, DUCTWORK AND CONTROLS. CO-ORDINATE WITH ARCHITECTURAL ELEVATIONS FOR ARCHITECTURAL, MECHANICAL, AND ELECTRICAL SPACE ALLOCATIONS.
- PROPERLY SUPPORT CEILING MOUNTED EQUIPMENT AND ANY OTHER EQUIPMENT INDEPENDENT OF CEILING SUPPORT SYSTEM. REFER TO ARCHITECTURAL DETAILS AND CO-ORDINATE WITH STRUCTURAL TRADE.
- REFER TO ARCHITECTURAL FOR OWNER SUPPLIED EQUIPMENT. CONFIRM ALL MECHANICAL REQUIREMENTS AND PROVIDE TO SUIT.
- REVIEW ARCHITECTURAL, ELECTRICAL, AND STRUCTURAL DRAWINGS AND PROVIDE ON SITE INSPECTIONS TO DETERMINE FULL EXTENT OF PROJECT PRIOR TO SUBMITTING BID.
- ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH CODES, BULLETINS ETC. AND REQUIREMENTS OF ALL INSPECTION AUTHORITIES FOR THE CITY OF TORONTO.
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL MECHANICAL SERVICES TO THE OCCUPIED AREA THROUGHOUT THE PHASING OF THE WORK. PROVIDE CONSTRUCTION VALVES, TEMPORARY DUCTWORK AND PIPING AS REQUIRED TO LIMIT THE SHUT DOWN OF SERVICES TO ONE TIME.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR CO-ORDINATION OF GRILLES, DIFFUSERS AND OTHER ELEMENTS.
- AIR BALANCE TECHNICIAN TO TAKE ALL MEASUREMENTS NECESSARY TO DETERMINE CURRENT SYSTEMS PERFORMANCE IN AREAS THAT WILL CONTINUE TO BE SERVED BY EXISTING AIR HANDLING EQUIPMENT AND SHALL REPORT ALL MEASUREMENTS MADE PRIOR TO START OF DEMOLITION.
- ON COMPLETION OF EACH PHASE OF DUCT ALTERATIONS, AIR BALANCE TECHNICIAN SHALL REBALANCE ALL EXISTING SYSTEMS TO DELIVER PRE-CONSTRUCTION FLOWS.
- EXISTING MECHANICAL SERVICES SHOWN ON THESE DRAWINGS WERE TAKEN FROM THE ORIGINAL CONTRACT DRAWINGS. THE CONTRACTOR SHALL VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SERVICES ON SITE AND SHALL REMOVE ALL REDUNDANT SERVICES IN THE AREAS OF CONSTRUCTION.

PLUMBING NOTES

- CONTRACTOR IS TO VERIFY CONNECTION POINTS TO EXISTING SERVICES ON SITE.
- CONTRACTOR IS TO CLEAR EXISTING DUCTWORK WHEN INSTALLING NEW PIPING. CLEARANCES TO BE VERIFIED ON SITE.
- PROVIDE A CLEANOUT FROM EACH PLUMBING FIXTURE WHERE REQUIRED BY LATEST ONTARIO BUILDING CODE.
- ALL PLUMBING FIXTURES INCLUDING FLOOR DRAINS (HUB, FUNNEL FLOOR DRAINS) TO BE TRAPPED AND VENTED AS REQUIRED BY ONTARIO LATEST BUILDING CODE.
- CONTRACTOR IS TO REMOVE ALL OBSOLETE PIPING WHEREVER POSSIBLE.
- BEFORE CUTTING ANY HOLES THROUGH THE EXISTING SLAB REFER TO STRUCTURAL DRAWINGS FOR GENERAL REQUIREMENTS.
- AFTER PIPE REMOVAL ALL EXISTING OPENINGS IN FIRE SEPARATION ARE TO BE FILLED-IN TO MAINTAIN INTEGRITY OF THAT FIRE SEPARATION.
- RECONNECT VENTS FROM EXISTING EQUIPMENT AND PLUMBING FIXTURES WHICH ARE TO REMAIN TO NEW VENTS AS REQUIRED.
- PROVIDE A CLEANOUT AT THE BOTTOM OF EVERY SOIL AND WASTE STACK THAT CONNECTS TO A HORIZONTAL DRAINAGE PIPE.
- CHECK AND VERIFY LOCATION OF ALL PIPES, DUCTS AND EQUIPMENT WITH ALL OTHER TRADES TO PREVENT INTERFERENCE. REMOVAL OR RELOCATION OF ANY SUCH WORK INTERFERING WITH WORK OF OTHER TRADES IS THE RESPONSIBILITY OF THE MECHANICAL TRADE CONCERNED UNLESS OTHERWISE APPROVED IN WRITING.
- FOR MOUNTING HEIGHT OF ALL PLUMBING FIXTURES REFER TO ARCHITECTURAL DRAWINGS.
- WHENEVER COLD AND HOT WATER DISTRIBUTION TO LAVATORIES IS TO RUN UNDER COUNTER, PIPING DISTRIBUTION IS TO BE INSTALLED AS TIGHT TO UNDER SIDE OF THE COUNTER AS POSSIBLE.
- ALL WATER, SANITARY, SEWER AND VENT COPPER PIPING WITH SOLDER JOINTS SHALL BE LEAD FREE. DO NOT INSTALL WATER LINES IN OUTSIDE WALL WHERE THEY MAY FREEZE, UNLESS BOTH THE WALL AND THE PIPES ARE PROPERLY INSULATED.
- INSTALL SHUT-OFF VALVES AT EACH PLUMBING FIXTURE.

HVAC NOTES

- REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR CO-ORDINATION OF GRILLES, DIFFUSERS AND OTHER ELEMENTS.
- CONTRACTORS SHALL COORDINATE ALL CEILING FINISHES WITH OWNER AND MATCH EXISTING. CONTRACTOR SHALL REVIEW MECHANICAL DRAWINGS, ARCHITECTURAL REFLECTED CEILING PLANS AND ARCHITECTURAL ROOM FINISH SCHEDULES AS SOON AS CONTRACT DOCUMENTS ARE SIGNED. ADVISE CONSULTANT OF ANY CONFLICTS BETWEEN CEILING TYPE AND DIFFUSER/GRILLE TYPE.
- THE CONTRACTOR SHALL VERIFY ALL CEILING FINISHES WITH ARCHITECTURAL DRAWINGS. CONTRACTOR AND DIFFUSER/GRILLE SUPPLIER ARE RESPONSIBLE TO PROVIDE ALL PLASTER AND FINISHING FRAMES, MOUNTING HARDWARE, AND ACCESSORIES TO SUIT ARCHITECTURAL CEILING TYPES. MECHANICAL CONTRACTOR SHALL CO-ORDINATE AND PROVIDE DETAILS OF MOUNTING REQUIREMENTS OF DIFFUSERS AND GRILLES IN DRYWALL CEILINGS TO DRYWALL TRADE AND ENSURE EDGES OF OPENINGS ARE FRAMED BY DRYWALL TRADE TO SUPPORT DIFFUSERS AND GRILLES PROPERLY. DIFFUSERS AND GRILLES MUST NOT BE SUPPORTED SOLELY BY HANGER WIRES.
- PROPERLY SUPPORT CEILING MOUNTED EQUIPMENT AND ANY OTHER EQUIPMENT INDEPENDENT OF CEILING SUPPORT SYSTEM. REFER TO ARCHITECTURAL DETAILS AND CO-ORDINATE WITH STRUCTURAL TRADE.
- FOR USE OF FLEXIBLE DUCTWORK REFER TO MECHANICAL SPECIFICATIONS.
- CONTRACTOR TO CARRY FOR ADDITIONAL DUCTS AND DUCT FITTING REQUIRED TO CLEAR THE INTERFERENCES IN THE CEILING SPACE.
- PROVIDE BALANCING DAMPER FOR EACH DIFFUSER, BRANCH DUCT, VAV BOX AND AIR VALVE. ALL LOCATIONS MAY NOT BE SHOWN ON PLANS.

GENERAL DEMOLITION NOTES

- CONTRACTOR IS TO ENSURE THAT ALL EXISTING PIPING AND DUCTWORK SERVING EXISTING AREAS REMAIN IN SERVICE UNTIL THESE AREAS ARE RECONNECTED TO NEW SERVICES. ONLY THEN OBSOLETE PIPING IS TO BE REMOVED AS SHOWN.
- ALL DISTURBED SURFACES AFTER PIPE AND DUCT REMOVAL OR REROUTING TO BE FILLED-IN WITH APPROPRIATE MATERIAL TO MAINTAIN FIRE SEPARATION AND PATCHED TO MATCH EXISTING OR NEW MATERIALS AND FINISHES.
- CONTRACTOR IS TO ENSURE THAT ALL EXISTING REMOVED FIXTURES AND EQUIPMENT REMAIN THE PROPERTY OF THE OWNER. IF THE OWNER DECLARES NO INTEREST IN THE REMOVED ITEMS, ASSUME OWNERSHIP AND REMOVE THE ITEMS FROM THE SITE.
- PROTECT ALL AREAS AFFECTED BY CONSTRUCTION FROM DIRT, DUST AND DEBRIS.
- REMOVE ALL RUBBISH AND CLEAN SITE DAILY.
- DEMOLITION AND REMOVAL OF PLUMBING AND DRAINAGE PIPING SHALL BE TAKEN BACK TO THE NEAREST WORKING MAIN AND BE CAPPED AS CLOSE TO THE WORKING MAIN AS POSSIBLE TO AVOID DEAD LEG LENGTHS OF PIPING.

MECHANICAL DRAWING LIST

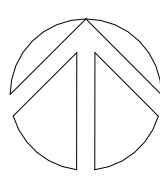
DWG. No.	DRAWING NAME	CURRENT REVISION	CURRENT REVISION DESCRIPTION	DATE
M001	GENERAL NOTES & DRAWING LIST	4	ISSUED FOR TENDER	2025-11-27
M002	LEGENDS & ABBREVIATIONS	4	ISSUED FOR TENDER	2025-11-27
M100	PLUMBING AND DRAINAGE DEMOLITION PLAN	4	ISSUED FOR TENDER	2025-11-27
M101	HVAC AND HYDRONICS DEMOLITION PLAN	4	ISSUED FOR TENDER	2025-11-27
M200	PLUMBING AND DRAINAGE PLANS	4	ISSUED FOR TENDER	2025-11-27
M300	HVAC AND HYDRONICS PLANS	4	ISSUED FOR TENDER	2025-11-27
M400	ROOF - MECHANICAL PLAN	4	ISSUED FOR TENDER	2025-11-27
M500	MECHANICAL CONTROL DIAGRAMS	4	ISSUED FOR TENDER	2025-11-27
M501	MECHANICAL CONTROL DIAGRAMS	4	ISSUED FOR TENDER	2025-11-27
M600	MECHANICAL DETAILS	4	ISSUED FOR TENDER	2025-11-27
M601	MECHANICAL DETAILS	4	ISSUED FOR TENDER	2025-11-27
M602	MECHANICAL DETAILS	4	ISSUED FOR TENDER	2025-11-27
M800	SCHEDULES	4	ISSUED FOR TENDER	2025-11-27



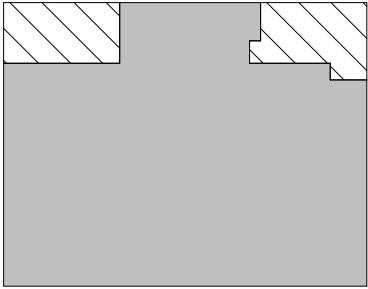
PROJECT LOGO



TRUE NORTH



CONSTRUCTION NORTH



KEY PLAN

Issued for 100% Design Development 25/09/19

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

REVISIONS

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

ONLY FIGURED DIMENSIONS MUST BE USED.

THE CONTRACTOR MUST CHECK THE DIMENSIONS ON SITE.

THE DRAWING IS PROTECTED BY COPYRIGHT.

ALL DIMENSIONS ARE SHOWN IN MILLIMETERS.

DO NOT SCALE THE DRAWINGS.

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SEAL

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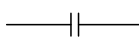




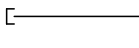


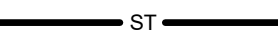






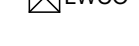




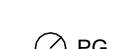
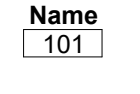
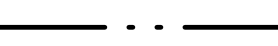

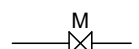






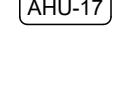


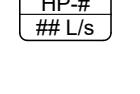



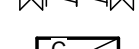

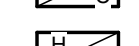



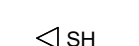

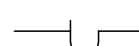



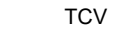







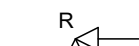



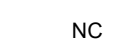





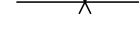

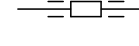

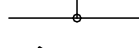



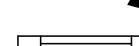







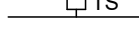

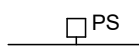



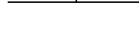

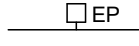





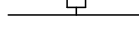



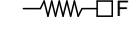





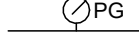

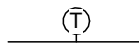














DRAWING TITLE:
**GENERAL NOTES & DRAWING
LIST**


DRAWN BY:	AR	DATE:	2025/07/04
CHECKED BY:	DR	SCALE:	

PROJECT NO: **24119**


DRAWING NO: **M001**

PRELIMINARY - NOT FOR CONSTRUCTION

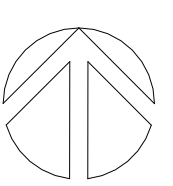
MECHANICAL LEGEND											
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	ABBREVIATION	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	GAS UTILITY METER & PRV STATION		FLANGED CONNECTION		WATER GONG	AD	ACCESS DOOR		SHEET & VIEW NUMBER		SANITARY ABOVE GRADE
	METER		PLUG CAP		FIRE DEPARTMENT CONNECTION	AFF	ABOVE FINISHED FLOOR		SANITARY BURRIED		STORM ABOVE GRADE
	CARBON DIOXIDE SENSOR		FLEXIBLE CONNECTION		THRUST BLOCK	AHU	AIR HANDLING UNIT		STORM BURRIED		DOMESTIC COLD WATER
	CARBON MONOXIDE SENSOR		LOW WATER CUT OFF		FIRE EXTINGUISHER	AP	MEDICAL GAS ALARM PANEL		REVISION TAG		DOMESTIC HOT WATER
	HUMIDISTAT		THERMOMETER			AT	AIR TERMINAL		ROOM NAME AND NUMBER		DOMESTIC HOT WATER RETURN
	HEAT DETECTOR		PRESSURE GAUGE			BD	BALANCING DAMPER				
	REVERSE ACTING THERMSTAT		ELECTRICALLY MONITORED SHUT-OFF VALVE			BPW	BEDPAN WASHER				
	OCCUPANCY SENSOR		AIR VENT			CB	CATCHBASIN				
	STATIC PRESSURE SENSOR		AUTOMATIC AIR VENT			CBV	CIRCUIT BALANCING VALVE		MECHANICAL EQUIPMENT TYPE		
	VENT		PETES PLUG			CFM	CUBIC FEET PER MINUTE		HEAT PUMP TYPE HEAT PUMP FLOW RATE		
	TEMPERATURE SENSOR		FLOW METERING DEVICE (FMD)			CTE	CONNECT TO EXISTING				
	HOSE BIBB		MEDICAL GAS OUTLET			DG	DOOR GRILLE				
	FLOOR DRAIN		APPROVED DOUBLE CHECK VALVE BACKFLOW PREVENTOR ASSEMBLY			DWF	DISTILLED WATER FAUCET				
	CAP/PLUG		COOLING COIL			EF	EXHAUST FAN				
	CARRIER BACK TO BACK		HEATING COIL			ERV	ENERGY RECOVERY VENTILATOR				
	CLEANOUT- IN LINE OR STACK		AREA DRAIN			ESH	EMERGENCY SHOWER				
	FLOOR CLEANOUT		SHOWER			EX	EXISTING				
	PIPE ELBOW DOWN		HAND HOLE TRAP			FD	FIRE DAMPER/FLOOR DRAIN				
	PIPE BOTTOM TAKE OFF		RUNNING TRAP			FFD	FUNNEL FLOOR DRAIN				
	PIPE ELBOW UP		TEMPERATURE CONTROL VALVE			FFH	FAN FORCED HEATER				
	PIPE BOTTOM TAKE OFF		FAN COIL UNIT			FHC	FIRE HOSE CABINET				
	PIPE SLEEVE		CABINET BLOWER FAN			FP	FIRE PUMP				
	TRAP		THERMOSTAT			GPM	GALLONS PER MINUTE				
	UNION		RELIEF VALVE			HD	HUB DRAIN				
	PUMP		PLUG VALVE			HP	HEAT PUMP				
	PIPE FLOW DIRECTION		NORMALLY CLOSED VALVE			INV. ELEV.	INVERT ELEVATOIN				
	BALANCING VALVE		NORMALLY OPEN VALVE			LSV	LOCKED SERVICE VALVE				
	BUTTERFLY VALVE		PIPE ANCHOR			ME	MECHANICAL EQUIPMENT				
	CHECK VALVE		EXPANSION COMPENSATOR and GUIDES			MH	MANHOLE				
	ISOLATING (SHUT-OFF) VALVE		PET COCK			NFHB	NON-FREEZE HOSE BIBB				
	STRAINER		UNIT HEATERS			OBV. ELEV.	OBVERT ELEVATION				
	PRESSURE INDEPENDENT CONTROL (PIC) VALVE		CONTINUOUS CONVECTORS			PD	PLANTER DRAIN				
	PRESSURE REGULATING VALVE		RADIANT PANELS			PF	PLUMBING FIXTURE				
	2-WAY MODULATING CONTROL VALVE		REHEAT COILS			REQ'D	REQUIRED				
	3-WAY 2-POSITION CONTROL VALVE		TEMPERATURE SENSOR			RF	RETURN FAN				
	3-WAY MODULATING CONTROL VALVE		PRESSURE SWITCH OR SENSOR			RHC	REHEAT COIL				
	2-WAY 2-POSITION CONTROL VALVE		FLOW SWITCH			RWL	RAIN WATER LEADER				
	FLEXIBLE CONNECTION		ELECTRIC-PNEUMATIC RELAY			S.R.E	AIR DIFFUSERS				
	DUCT OFFSET		PNEUMATIC-ELECTRIC RELAY			SF	SUPPLY FAN				
	DUCT OFFSET (SINGLE LINE)		SMOKE DETECTOR			SMV	SHOWER MIXING VALVE				
	TURNING VANES		SOLENOID VALVE			SP	SMOKE PRESENCE DETECTOR				
	DUCT-RECTANGULAR		FIRESTAT			SS	STATIC PRESSURE SENSOR				
	DUCT-ROUND		FREEZESTAT			SWT	SOIL STACK				
	ACOUSTIC LINED DUCT		PRESSURE DIFFERENTIAL SWITCH			TG	TRANSFER GRILLE				
	SUPPLY DUCT DOWN		PRESSURE GAUGE			TYP.	TYPICAL				
	SUPPLY DUCT UP		TEMPERATURE GAUGE			UH	UNIT HEATER				
	RETURN DUCT DOWN		SPRINKLER RISER			VS	VENT STACK				
	RETURN DUCT UP		HEAT TRACE			WF	WALL FIN HEATER				
	CEILING SUPPLY DIFFUSER					ZV	MEDICAL GAS ZONE VALVE				
	CEILING EXHAUST/RETURN DIFFUSER										
	LINEAR DIFFUSER					CA	COMPRESSED AIR				
	CAPPED END DUCT					CDR	CONDENSER WATER RETURN				
	DUCT REDUCER/ENLARGER					DCW	DOMESTIC COLD WATER				
	TRANSITION RECTANGULAR DUCT TO ROUND DUCT					DHW	DOMESTIC HOT WATER				
	FLEXIBLE ROUND DUCT					HWR	HEATING WATER RETURN				
	BALANCING DAMPER					HWS	HEATING WATER SUPPLY				
	FIRE DAMPER					SAN	SANITARY DRAIN				
	SPLITTER DAMPER					SC-G	STEAM CONDENSATE, GRAVITY				
	BACKDRAFT DAMPER					UG SAN	STEAM CONDENSATE, GRAVITY				
	OPPOSED BLADE DAMPER					FHX	LABORATORY FUME HOOD EXHAUST AIR				
	SMOKE DAMPER					RA	RETURN AIR				
	MOTORIZED DAMPER					SA	SUPPLY AIR				



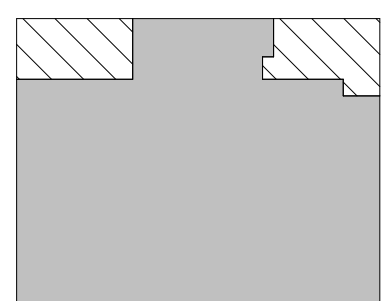
PROJECT LOGO



TRUE NORTH



CONSTRUCTION NORTH



KEY PLAN

Issued for 100% Design Development 25/09/19

4

ISSUED FOR TENDER

2025-11-27

3

ISSUED FOR 100%

2025-11-21

2

ISSUED FOR 90%

2025-10-17

1

ISSUED FOR PERMIT

2025-10-03

No.

DESCRIPTION

DATE

REVISIONS

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SEAL

CONSULTANTS:

PROJECT:
MCLENNAN PHYSICAL
LABORATORIES - P078-24-109-QIS
LAB & CQIQC SUITE
255 HURON STREET, TORONTO
ONTARIO M5S 3J1

DRAWING TITLE:
LEGENDS & ABBREVIATIONS

DRAWN BY:

AR

DATE:

2025/07/04

CHECKED BY:

DR

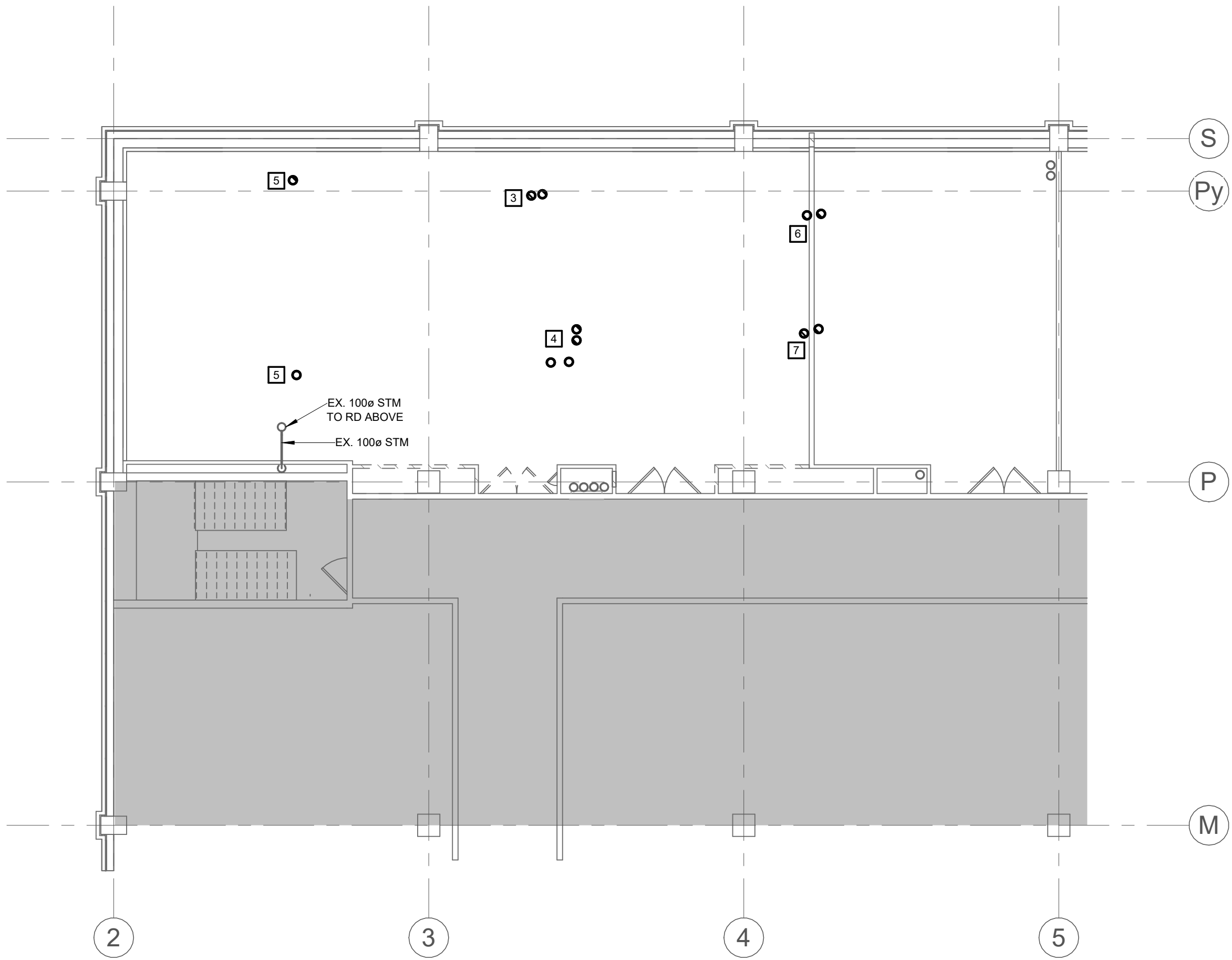
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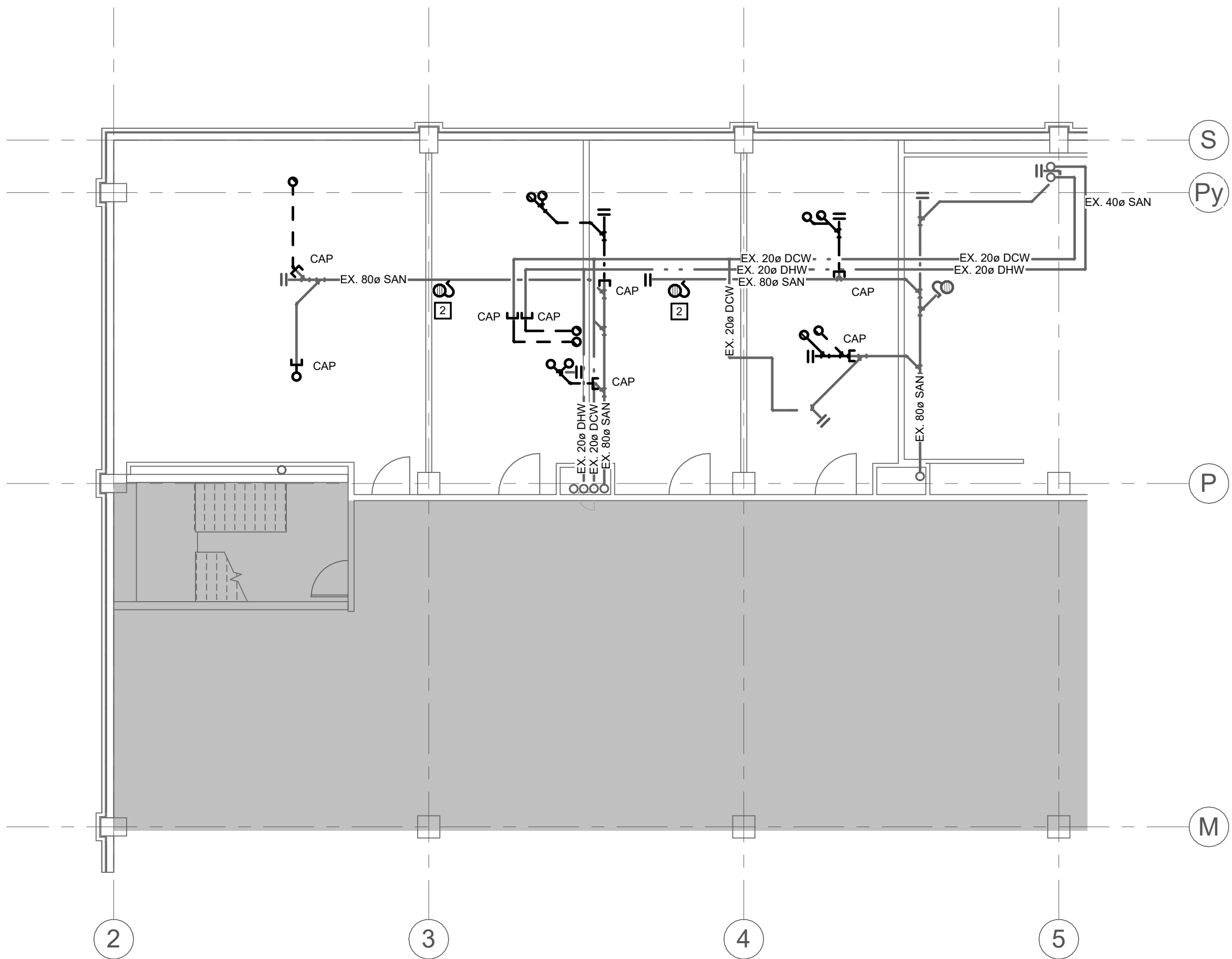
24119

DRAWING NO:

M002



QIS LAB PLUMBING AND DRAINAGE DEMOLITION PLAN - 3RD FLOOR
1
1 : 100 M100



QIS LAB PLUMBING AND DRAINAGE DEMOLITION PLAN - 2ND FLOOR
2
1 : 100 M100



PHOTO 1
N.T.S. M100



PHOTO 2
N.T.S. M100

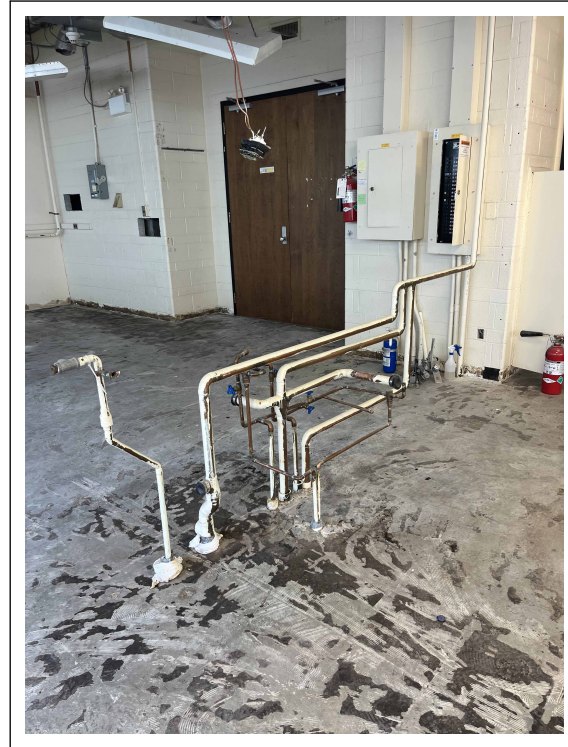


PHOTO 3
N.T.S. M100

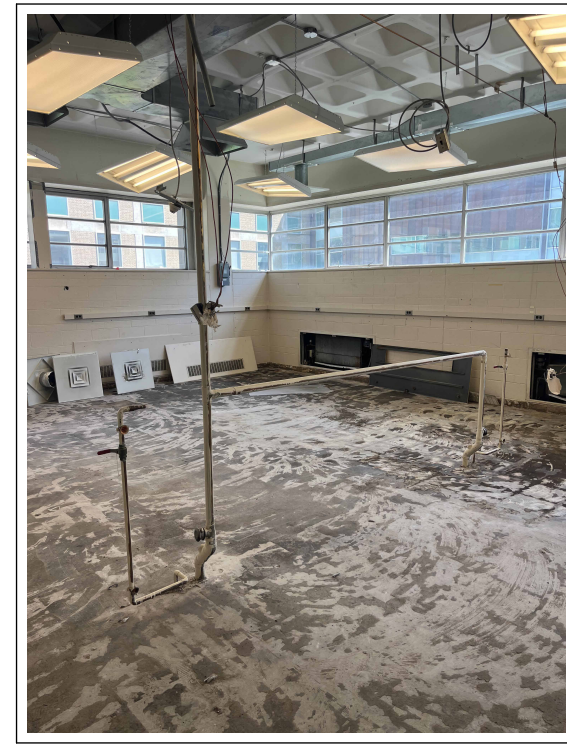


PHOTO 4
N.T.S. M100



PHOTO 5
N.T.S. M100



PHOTO 6
N.T.S. M100

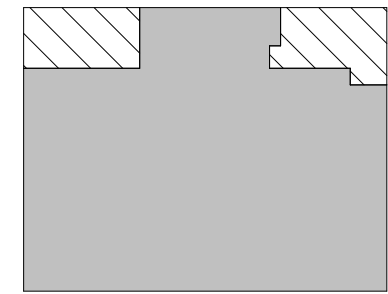
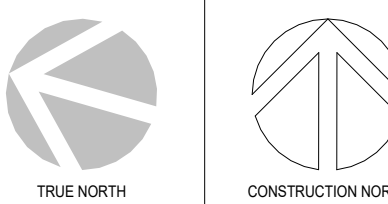
DEMOLITION NOTES

- A. ALPHABETICAL NOTES ARE GENERAL TO THE PLAN(S) ON THIS SHEET
- # NUMERICAL NOTES ARE KEYED NOTES CORRESPONDING TO KEYED NOTES ON PLAN(S) ON THIS SHEET.
- A. CONTRACTOR IS TO REVIEW THE EXISTING PLUMBING INSTALLATION ON THE 3RD FLOOR AND ENSURE THAT THE REMOVAL OF DCW, DHW, SAN, AND VENT SERVICES DOES NOT CUT OFF SERVICE TO THE FLOORS BELOW. CLOSE ATTENTION SHALL BE MADE TO COORDINATING THIS WITH THE EXISTING VENT SERVICES RUNNING AT OR THROUGH THE 3RD FLOOR SPACES BEING RENOVATED.
- EXISTING DCW, DHW, SAN, AND VENT PIPING TO BE REMOVED BACK INTO PIPE CHASE AND CAPPED AT MAIN RISER. REFER TO PHOTO #1 ON THIS DRAWING FOR FURTHER DETAILS.
 - REMOVE FLOOR DRAIN AND CAP AT MAIN
 - REMOVE ALL EXISTING DCW, DHW, SAN, AND VENT PIPING TO BELOW FLOOR, HIGH LEVEL, AND BACK TO SHAFT. CAP AT NEAREST SERVICE MAIN. REFER TO PHOTO #2 ON THIS DRAWING FOR FURTHER DETAILS.
 - REMOVE ALL EXISTING DCW, DHW, SAN, AND VENT PIPING TO BELOW FLOOR, HIGH LEVEL, AND BACK TO SHAFT. CAP AT NEAREST SERVICE MAIN. REFER TO PHOTO #3 ON THIS DRAWING FOR FURTHER DETAILS.
 - REMOVE EXISTING DCW, DHW, SAN, AND VENT PIPING TO BELOW FLOOR, HIGH LEVEL, AND BACK TO SHAFT. CAP AT NEAREST SERVICE MAIN. REFER TO PHOTO #4 ON THIS DRAWING FOR FURTHER DETAILS.
 - REMOVE EXISTING DCW, DHW, SAN, AND VENT PIPING TO BELOW FLOOR, HIGH LEVEL, AND BACK TO SHAFT. CAP AT NEAREST SERVICE MAIN. REFER TO PHOTO #5 ON THIS DRAWING FOR FURTHER DETAILS.
 - REMOVE EXISTING DCW, DHW, SAN, VENT PIPING TO BELOW FLOOR, HIGH LEVEL, AND BACK TO SHAFT. CAP AT NEAREST SERVICE MAIN. REFER TO PHOTO #6 ON THIS DRAWING FOR FURTHER DETAILS.

TO BE DEMOLISHED



PROJECT LOGO



KEY PLAN

Issued for 100% Design Development 25/09/19

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

REVISIONS

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CONSULTANTS

PROJECT:
**MCLENNAN PHYSICAL
LABORATORIES - P078-24-109-QIS
LAB & CQICQ SUITE**

**255 HURON STREET, TORONTO
ONTARIO M5S 3J1**

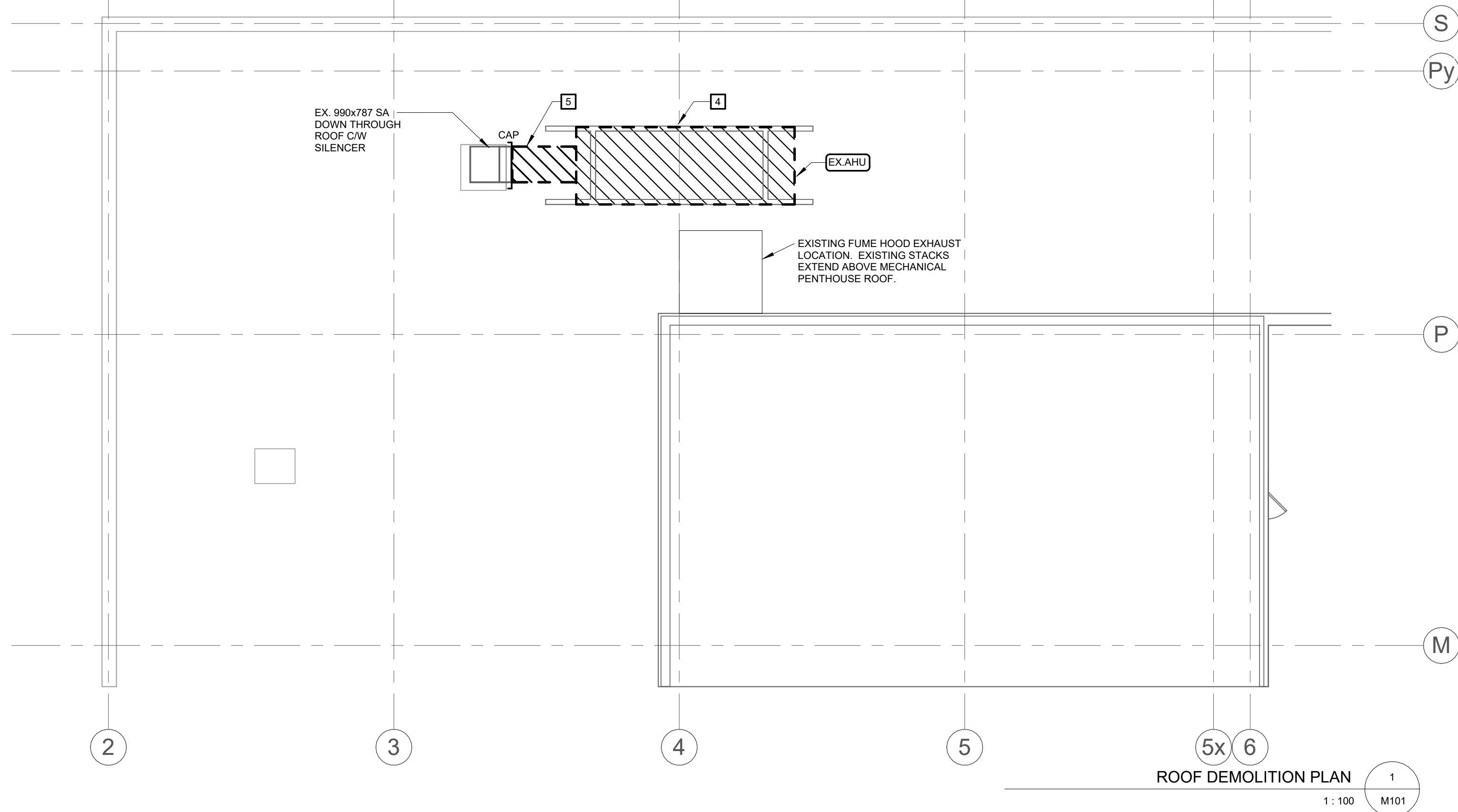
DRAWING TITLE:
**PLUMBING AND DRAINAGE
DEMOLITION PLAN**

DRAWN BY:	AR	DATE:	2025/07/04
CHECKED BY:	DR	SCALE:	1 : 100

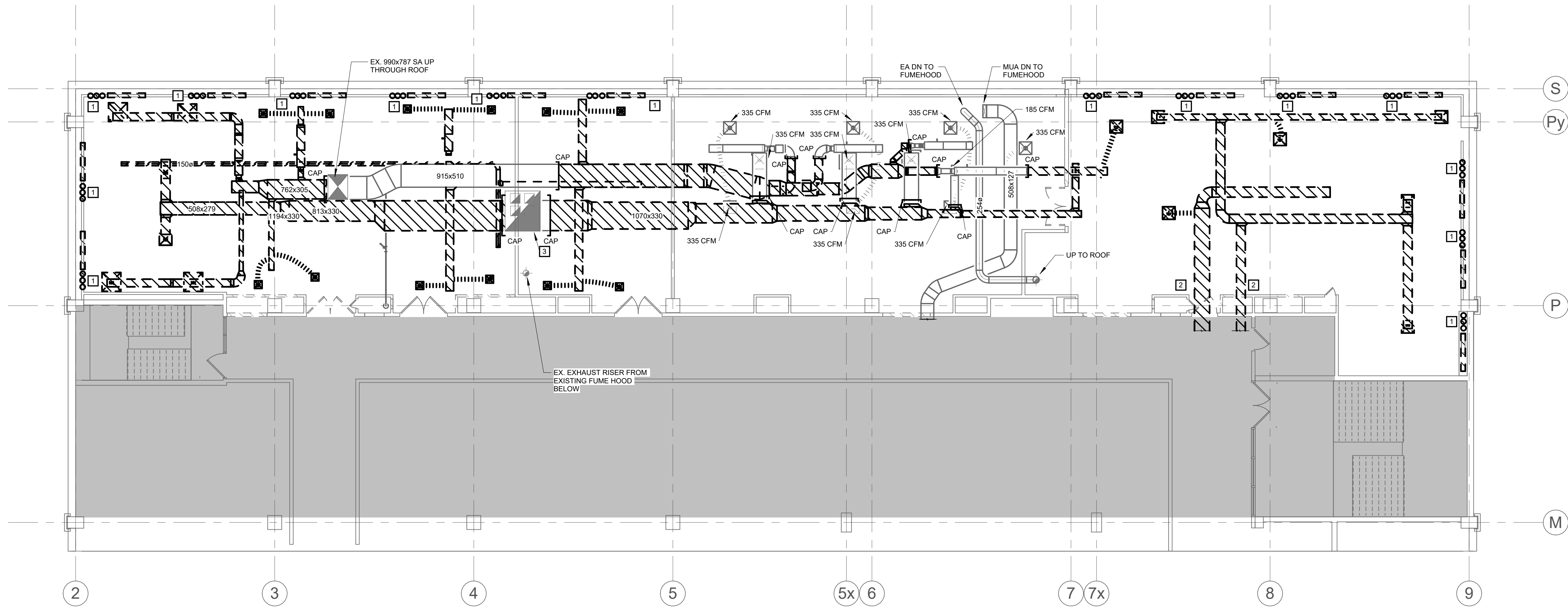
PROJECT NO: **24119**

DRAWING NO: **M100**

OFFICE PLUMBING AND DRAINAGE DEMOLITION PLAN - 3RD FLOOR
3
1 : 100 M100



ROOF DEMOLITION PLAN
1
1:100 M101



HVAC AND HYDRONICS DEMOLITION PLAN
2
1:100 M101

DEMOLITION NOTES

A. ALPHABETICAL NOTES ARE GENERAL TO THE PLAN(S) ON THIS SHEET

NUMERICAL NOTES ARE KEYED NOTES CORRESPONDING TO KEYED NOTES ON PLAN(S) ON THIS SHEET.

A. CONTRACTOR TO REMOVE ALL EXISTING PNEUMATIC CONTROL PIPING ASSOCIATED WITH HVAC SYSTEM AND PERIMETER FAN COIL UNIT REMOVAL SHOWN ON THESE DRAWINGS. SHOULD THE CONTRACTOR BE UNSURE HOW FAR TO TAKE THE PNEUMATIC CONTROL PIPING DEMOLITION THEY ARE TO BRING IT TO THE ATTENTION OF THE CONSULTANT.

B. CONTRACTOR TO REMOVE ANY & ALL REDUNDANT OR ABANDONED HVAC COMPONENTS & MATERIALS ASSOCIATED WITH THE SHOWN TO BE DEMOLISHED INFRASTRUCTURE AND EQUIPMENT.

1. PERIMETER FAN COIL UNIT, ASSOCIATED PIPING, AND CONTROLS TO BE REMOVED. REFER TO DETAIL #1 ON DRAWING M601 FOR FURTHER DETAILS.

2. DUCTWORK TO BE REMOVE AND CAPPED ON CORRIDOR SIDE OF DEMISING WALL.

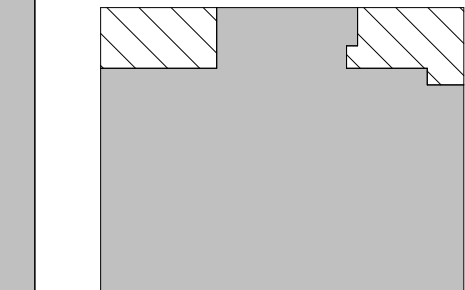
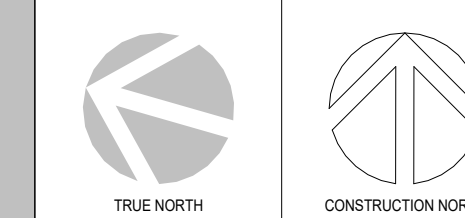
3. EXISTING RETURN AIR DUCTWORK UP THROUGH ROOF TO REMAIN.

4. EXISTING AHU, DUCTWORK, & ASSOCIATED CONTROLS TO BE REMOVED. EXISTING ROOF CURB TO REMAIN TO RECEIVE NEW AHU-02.

5. CONTRACTOR TO DEMOLISH AHU SA DUCTWORK UP TO EXISTING SILENCER. SILENCER TO REMAIN.

TO BE DEMOLISHED

PROJECT LOGO



KEY PLAN

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**MCCLENNAN PHYSICAL
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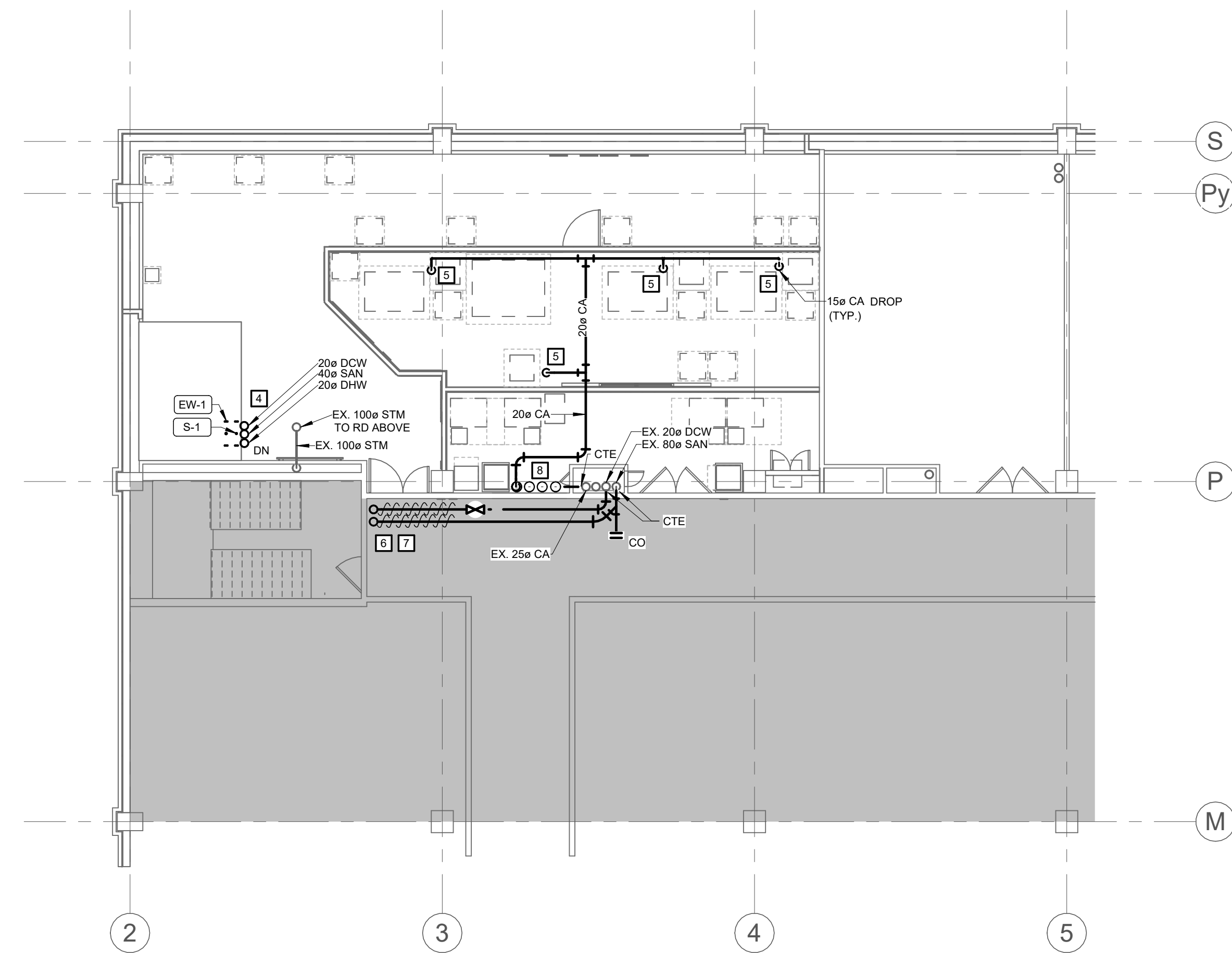
**255 HURON STREET, TORONTO
ONTARIO M5S 3J1**

DRAWING TITLE:
**HVAC AND HYDRONICS
DEMOLITION PLAN**

DRAWN BY: AR DATE: 2025/07/04
CHECKED BY: DR SCALE: 1:100

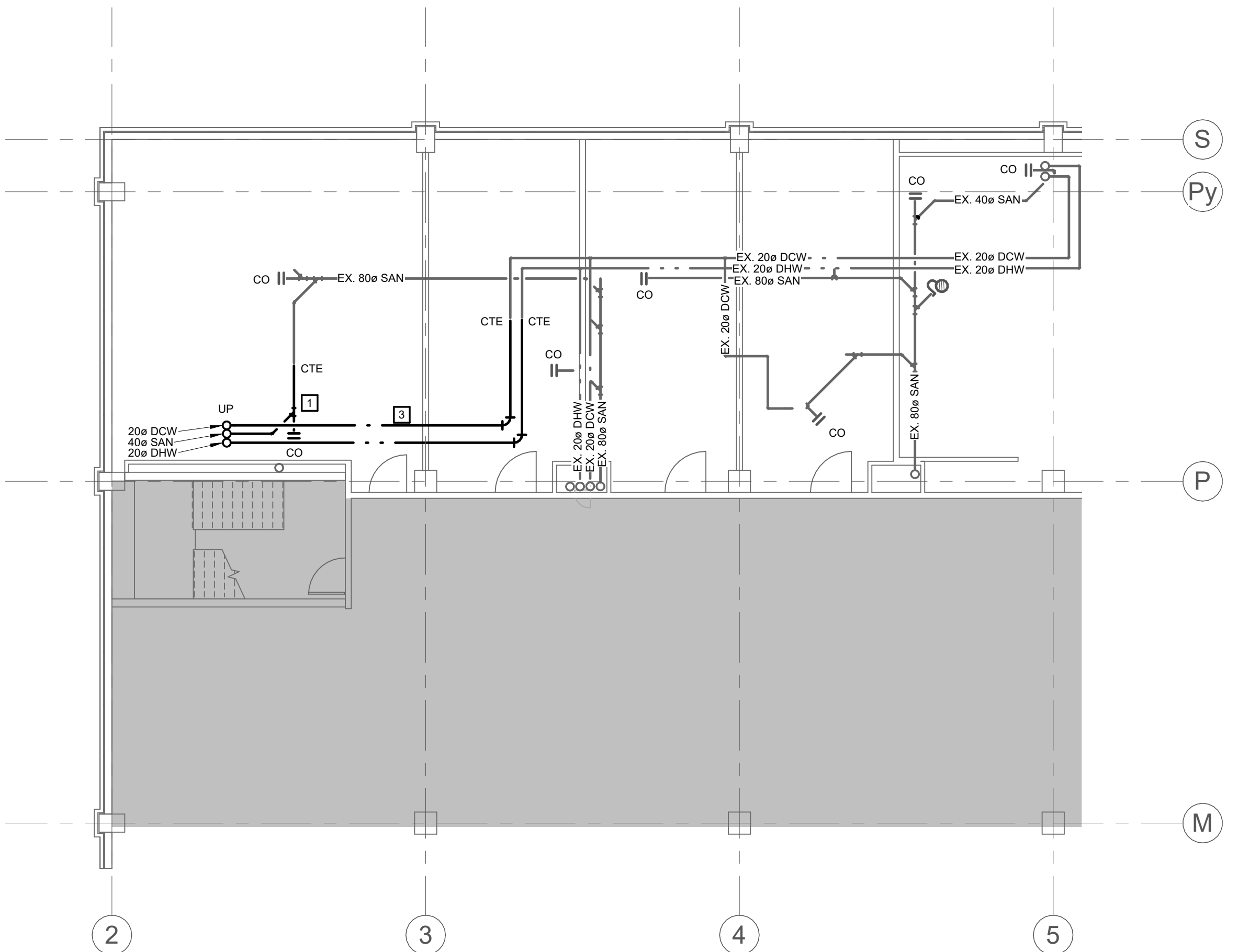
PROJECT NO: **24119**

DRAWING NO: **M101**



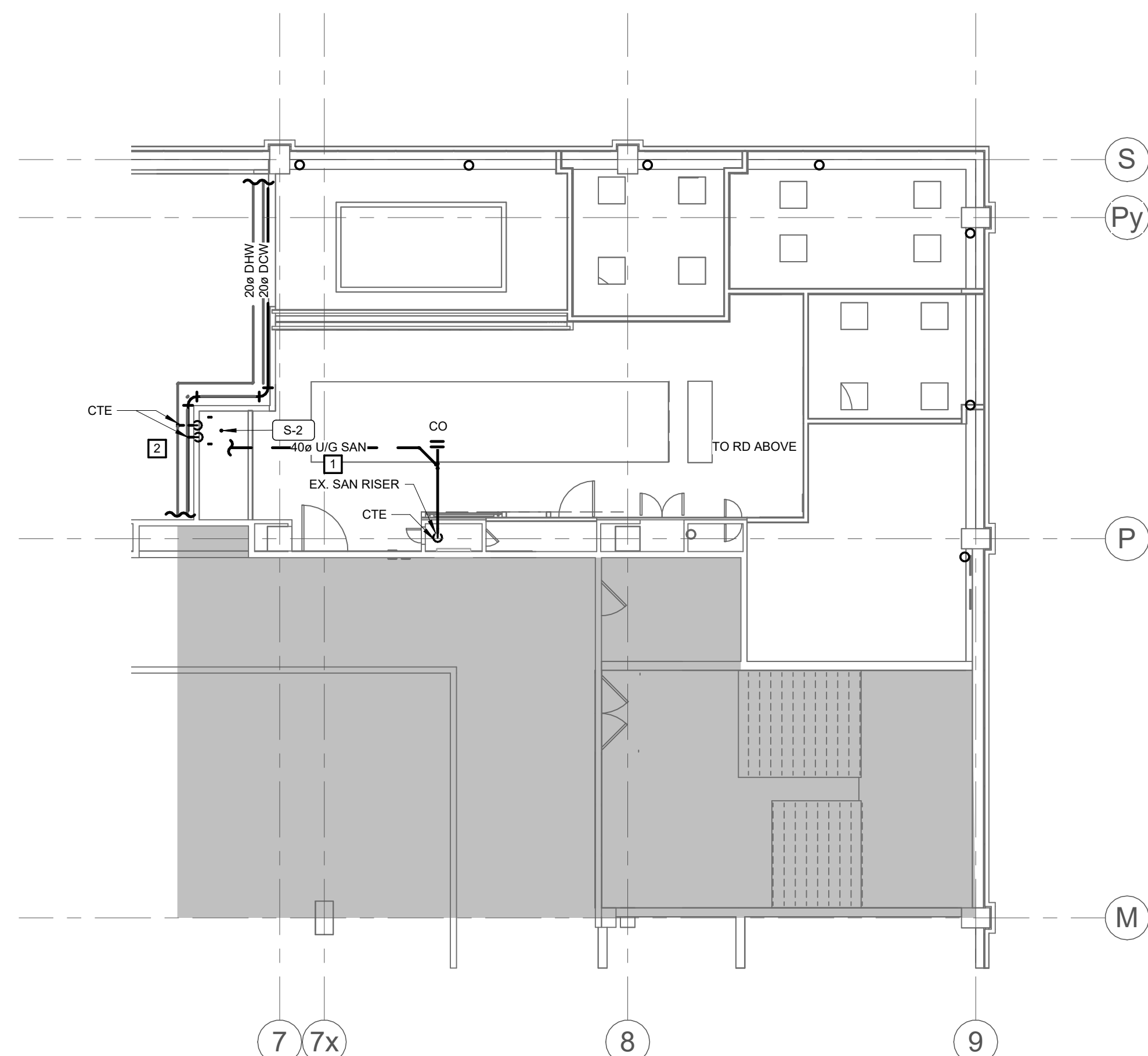
QIS LAB - 3RD FLOOR PLUMBING AND DRAINAGE PLAN

1
1 : 100 M200



QIS LAB - 2ND FLOOR PLUMBING AND DRAINAGE PLAN

2
1 : 100 M200



OFFICE - 3RD FLOOR PLUMBING AND DRAINAGE PLAN

3
1 : 100 M200

CONSTRUCTION NOTES

A. ALPHABETICAL NOTES ARE GENERAL TO THE PLAN(S) ON THIS SHEET

NUMERICAL NOTES ARE KEYED NOTES CORRESPONDING TO KEYED NOTES ON PLAN(S) ON THIS SHEET

A. ALL PIPING SHOWN ON PART PLAN 2/M200 IS RUNNING WITHIN THE 2ND FLOOR CEILING SPACE BELOW

B. SANITARY PIPING SHOWN ON THE PART PLAN 3/M200 IS RUNNING WITHIN THE 2ND FLOOR CEILING SPACE BELOW

1. 40MM SANITARY SERVICE FOR NEW SINK ROUTED THROUGH THE 2ND FLOOR CEILING SPACE BELOW

2. EXTEND 20 MM DCW/DHW FROM EXISTING SERVICE IN 3RD FLOOR CEILING SPACE DOWN TO FIXTURE AS SHOWN. PROVIDE ISOLATION VALVES AT FIXTURE

3. EXTEND 20 MM DCW/DHW FROM EXISTING SERVICE IN THE 2ND FLOOR CEILING SPACE. PROVIDE ISOLATION VALVES AT FIXTURE


4. CONTRACTOR TO PROVIDE THERMOSTATIC MIXING VALVE FOR NEW EYEWASH 'EW-1'

5. PROVIDE 15MM CA DOWN TO DR CONTROL UNIT. TERMINATE ADJACENT TO UNIT WITH ISOLATION VALVE. END FITTING SUITABLE TO RECEIVE DR CONTROL UNIT FLEX HOSE.

6. PROVIDE 20MM DCW & 40MM DRAIN UP/DOWN FROM AHU-01 HUMIDIFIER CABINET.


7. HEAT TRACE AND INSULATE DCW & SANITARY DRAIN PIPING TO/FROM HUMIDIFIER. HEAT TRACE AND INSULATE PIPING FROM HUMIDIFIER CONNECTS INSIDE AHU-01 DOWN THROUGH THE ROOF AND FOR 1800MM LENGTH OF PIPING WITHIN CONDITIONED SPACE

8. PROVIDE IN-LINE COMPRESSED AIR FILTER UNIT & AIR DRYER AT 1200-1500MM AFF. FILTER UNIT TO BE SUPERDRY, MODEL SAF-185(E-185(X)). WATER SEPARATOR TO BE, MODEL FSD-185-W, AND AIR DRYER TO BE, MODEL D-1 C-W AUTOMATIC TIMER DRAIN. EQUIVALENT PRODUCTS MAY BE CONSIDERED. PROVIDE ISOLATION VALVES AS REQUIRED TO ISOLATE THIS SYSTEM ADEQUATELY FOR MAINTENANCE.

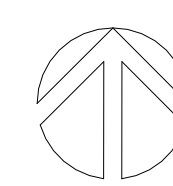


UNIVERSITY OF
TORONTO

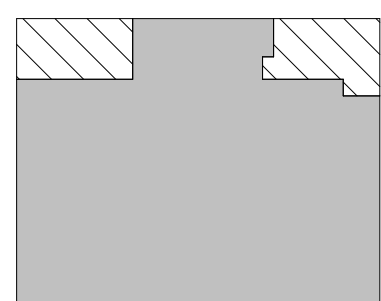
PROJECT LOGO



TRUE NORTH



CONSTRUCTION NORTH



KEY PLAN

Issued for 100% Design Development 25/09/19

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No.	DESCRIPTION	DATE

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ONTARIO M5S 3J1

DRAWING TITLE:

PLUMBING AND DRAINAGE
PLANS

DRAWN BY:

AR

DATE:

2025/07/04

CHECKED BY:

DR

SCALE:

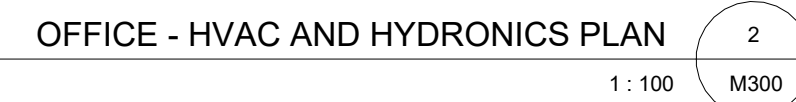
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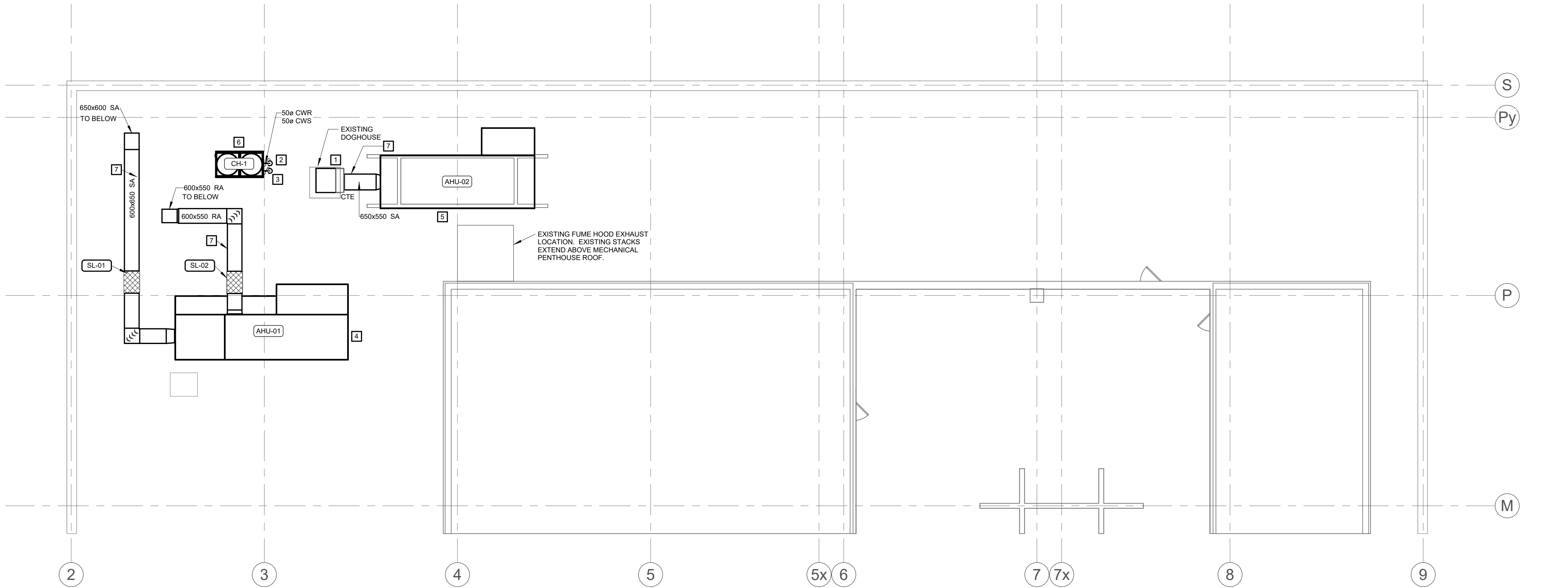
24119

DRAWING NO.:

M200



DRAWING NO.: **M300**

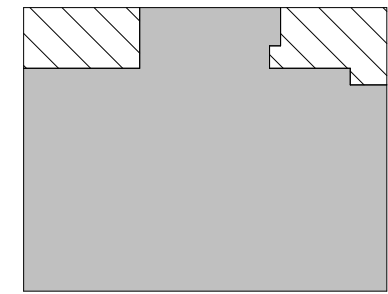
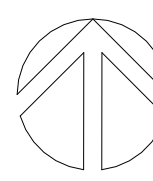


CONSTRUCTION NOTES

- A. ALPHABETICAL NOTES ARE GENERAL TO THE PLAN(S) ON THIS SHEET
- # NUMERICAL NOTES ARE KEYED NOTES CORRESPONDING TO KEYED NOTES ON PLAN(S) ON THIS SHEET
- A. RESERVED.
- CONNECT TO EXISTING SUPPLY AIR DUCTWORK. EXISTING DOGHOUSE AND ROOF PENETRATION TO BE REUSED.
 - CHILLED WATER PIPING TO/FROM AIR COOLED CHILLER DOWN THROUGH ROOF. PIPING TO BE INSULATED AND HEAT TRACED. REFER TO DRAWING M601 FOR PIPE SUPPORT DETAILS.
 - Ø50 CHILLED WATER PIPING DOWN TO LEVEL BELOW.
 - AHU-01 TO BE MOUNTED ON MANUFACTURER PROVIDED 18" HIGH ROOF CURB. REFER TO ARCHITECTURAL PLANS FOR ROOF INTEGRATION DETAILS. REFER TO DRAWING M602 FOR FURTHER DETAILS
 - AHU-02 IS BE MOUNTED ON EXISTING ROOF CURB. EXISTING ROOF CURB TO BE MODIFIED TO ALIGN WITH NEW AHU DIMENSIONS.
 - CHILLER 'CH-1' TO BE MOUNTED ON STRUCTURAL STEEL SUPPORT FRAME. UNIT TO BE MOUNTED 900MM ABOVE FINISHED ROOF LEVEL. REFER TO STRUCTURAL PLANS FOR FURTHER DETAILS.
 - ALL ROOF MOUNTED DUCTWORK TO BE PROVIDED WITH 90MM THICK EXTERNAL THERMAL INSULATION AS PER MECHANICAL SPECIFICATIONS. EXTERNAL INSULATION TO HAVE A PEAKED TOP TO ALLOW FOR SNOWWATER RUNOFF.



PROJECT LOGO



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**255 HURON STREET, TORONTO
ONTARIO M5S 3J1**

DRAWING TITLE:
ROOF - MECHANICAL PLAN

DRAWN BY:	AR	DATE:	2025/07/04
CHECKED BY:	DR	SCALE:	1 : 100

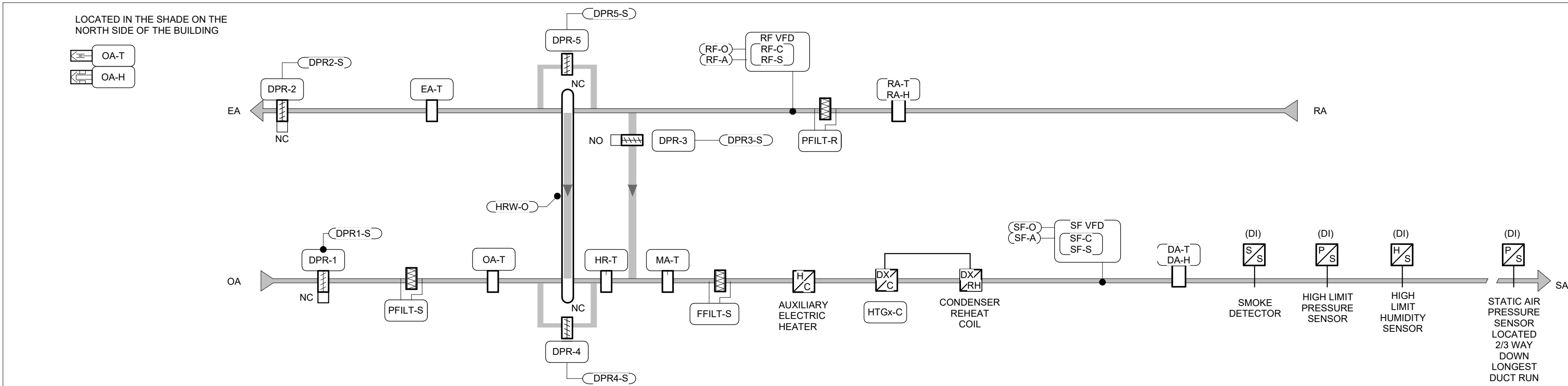
PROJECT NO: **24119**

DRAWING NO: **M400**

ROOF MECHANICAL PLAN

1 : 100

1
M400



SEQUENCE OF OPERATION:

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

DAMPER CONTROL:

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

FAN CONTROL:

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

HEAT RECOVERY SYSTEM CONTROL:

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

COOLING CONTROL:

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

HEATING CONTROL:

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

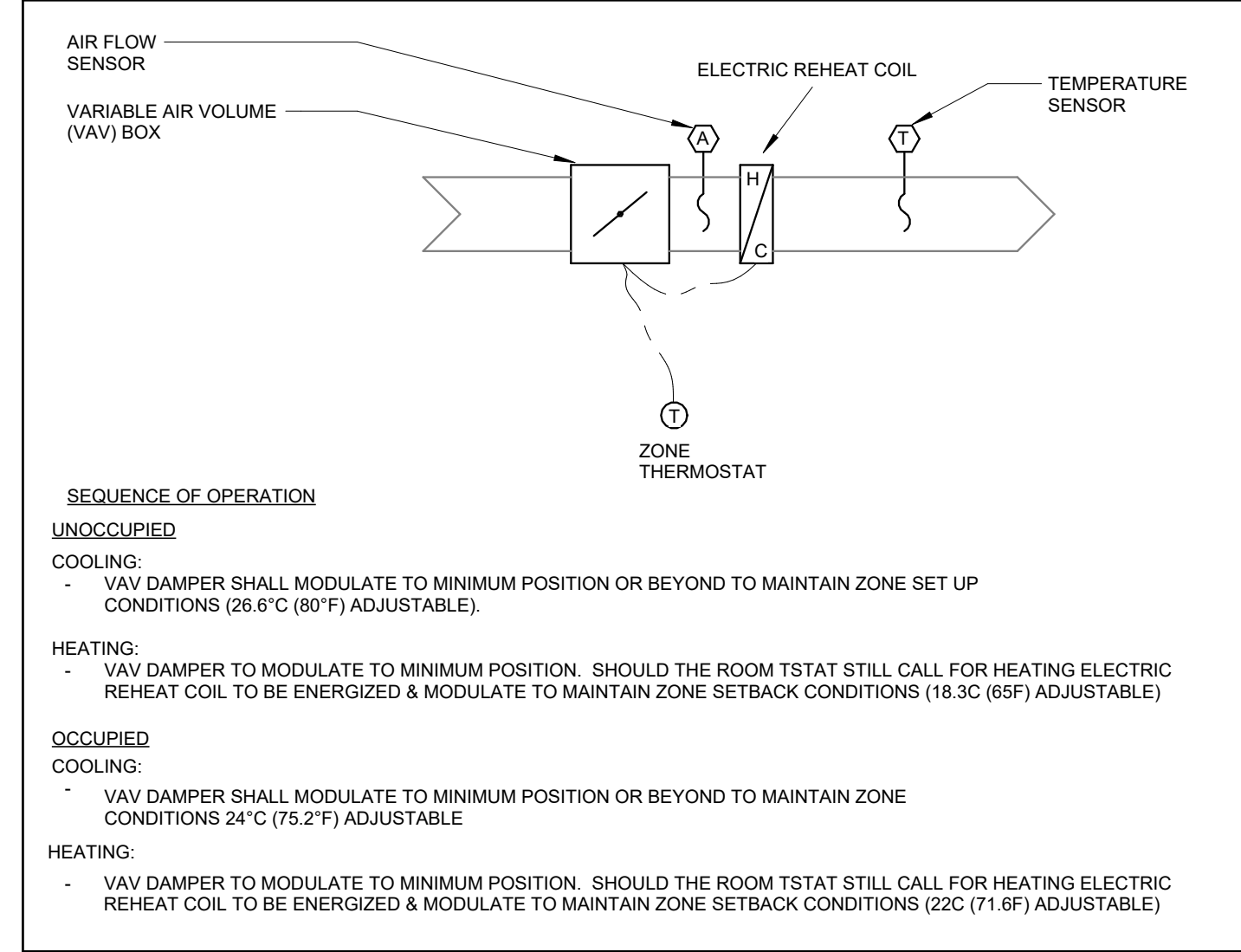
ECONOMIZER MODE:

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

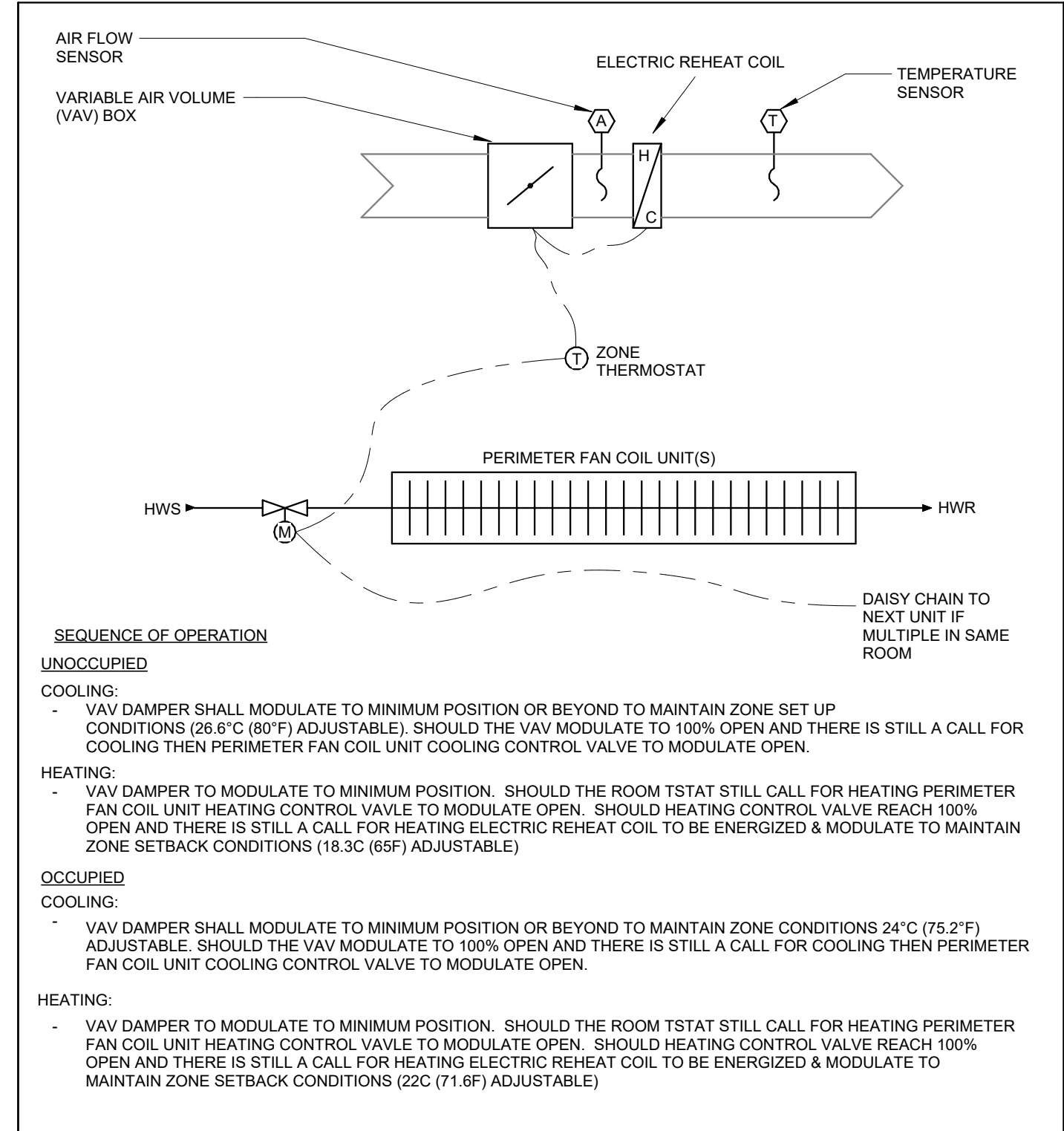
NOTES:

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

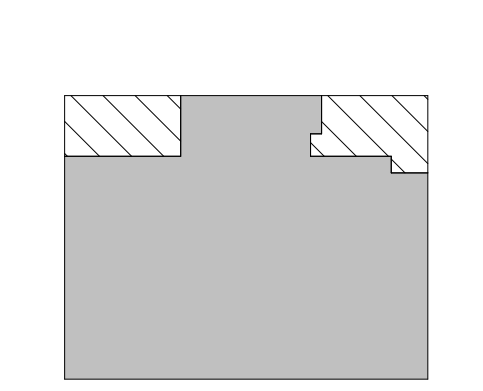
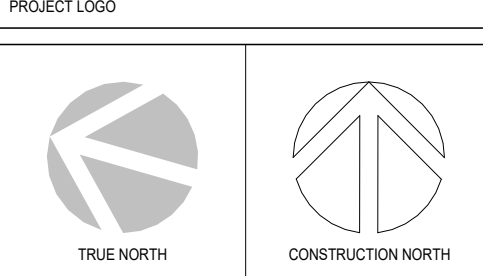
AIR HANDLING UNIT BAS POINTS LIST											
		INPUT			OUTPUT		FEATURES			NOTES	
POINT NAME	UNITS	AI	DI	MI	AO	DO	TREND	GRAPH	ALARM		
DISCHARGE AIR TEMPERATURE (DAT)	DEG C	X					X	X	X	ALARM < 10 DEG C	
DISCHARGE AIR HUMIDITY (DAH)	% RH	X					X	X	X	ALARM > 90% RH	
HEAT WHEEL RECOVERED AIR TEMPERATURE	DEG C	X					X	X			
HEAT WHEEL EXHAUST AIR TEMPERATURE	DEG C	X					X	X	X	ALARM < 2 DEG C	
RETURN AIR TEMPERATURE	DEG C	X					X	X			
RETURN AIR HUMIDITY	% RH	X					X	X		ALARM < 25 %RH, > 60 %RH	
OUTDOOR AIR TEMPERATURE	DEG C	X					X	X			
OUTDOOR AIR HUMIDITY	% RH	X					X	X			
DISCHARGE AIR PRESSURE	PA	X					X	X			
RETURN AIR PRESSURE	PA	X					X	X			
FRESH AIR FILTER STATUS	CLEAN/DIRTY		X				X	X	X		
RETURN AIR FILTER STATUS	CLEAN/DIRTY		X				X	X	X		
SUPPLY FAN STATUS	OFF/ON		X				X	X	X		
RETURN FAN STATUS	OFF/ON		X				X	X	X		
HEAT WHEEL STATUS	OFF/ON		X				X	X	X		
SUPPLY FAN COMMAND	OFF/ON					X	X	X			
RETURN FAN COMMAND	OFF/ON					X	X	X			
HEAT WHEEL COMMAND	OFF/ON					X	X	X			
DX COOLING COMMAND	OFF/ON					X	X	X		# OF STAGES AS REQUIRED	
CONDENSER REHEAT	DISABLE/ENABLE					X	X	X			
DX HEATING COMMAND	OFF/ON					X	X	X		# OF STAGES AS REQUIRED	
AUXILIARY ELECTRIC HEATING COMMAND	DISABLE/ENABLE					X	X	X			
HEAT WHEEL SPEED REFERENCE	%					X	X	X			
SUPPLY FAN SPEED REFERENCE	%					X	X	X			
RETURN FAN SPEED REFERENCE	%					X	X	X			
SUPPLY FAN VFD FAULT	NORMAL/ALARM		X				X	X	X		
RETURN FAN VFD FAULT	NORMAL/ALARM		X				X	X	X		



CQIQC/DCQ VAV BOX W/REHEAT CONTROL SCHEMATIC
N.T.S. M500



CQIQC/DCQ VAV BOX W/REHEAT & PERIMETER FCU CONTROL SCHEMATIC
N.T.S. M500



KEY PLAN

Issued for 100% Design Development 25/09/19

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

REVISIONS:

DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE ARCHITECT / ENGINEER BEFORE PROCEEDING. ONLY FIGURED DIMENSIONS MUST BE USED. THE CONTRACTOR MUST CHECK THE DIMENSIONS ON SITE. THE DRAWING IS PROTECTED BY COPYRIGHT. ALL DIMENSIONS ARE SHOWN IN MILLIMETERS. DO NOT SCALE THE DRAWINGS.

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PROJECT:
MCLENNAN PHYSICAL LABORATORIES - P078-24-109-QIS LAB & CQIQC SUITE

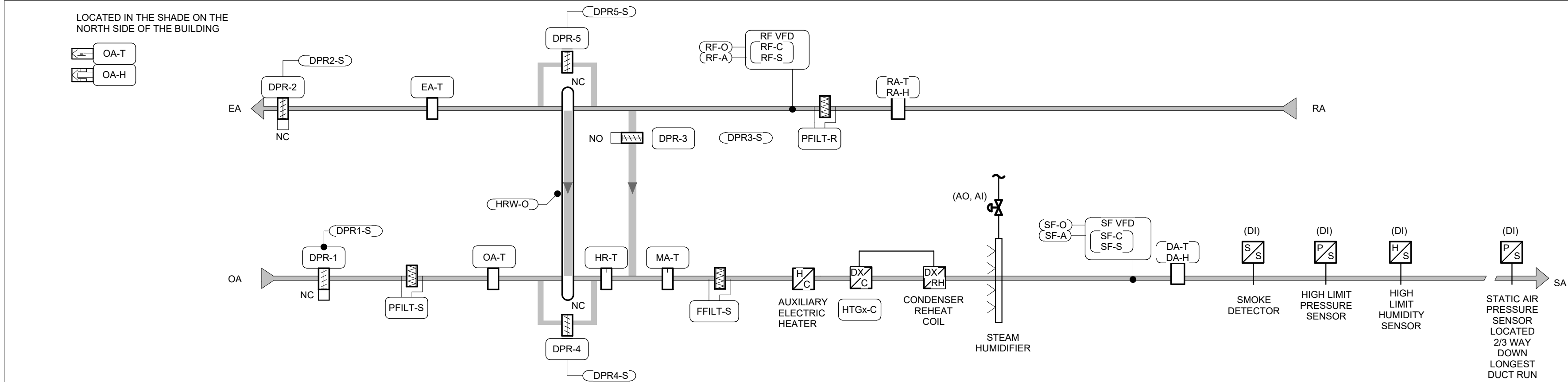
255 HURON STREET, TORONTO ONTARIO M5S 3J1

DRAWING TITLE:
MECHANICAL CONTROL DIAGRAMS

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

PROJECT NO: **24119**

DRAWING NO: **M500**



SEQUENCE OF OPERATION:

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

DAMPER CONTROL:

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

FAN CONTROL:

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

HEAT RECOVERY SYSTEM CONTROL:

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

COOLING CONTROL:

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

HEATING CONTROL:

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

ECONOMIZER MODE:

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

HUMIDIFIER CONTROL:

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

NOTES:

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

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

QIS LAB AIR HANDLING UNIT AHU-01 CONTROL SCHEMATIC

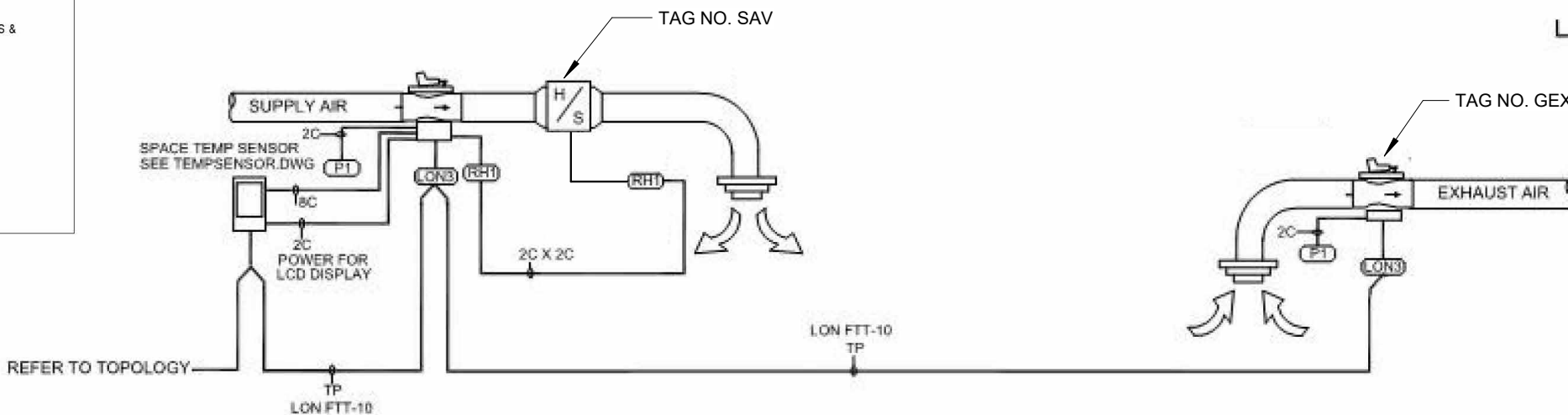
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M501

INSTALLATION NOTES:

1. LAB SUPPLY VENTURI IS COMPLETE WITH FACTORY INSTALLED:
 - HIGH SPEED LAB ELECTRIC ACTUATOR
2. LAB GENERAL EXHAUST VENTURI IS COMPLETE WITH FACTORY INSTALLED:
 - HIGH SPEED LAB ELECTRIC ACTUATOR
 - 0.4A.F. OFF BOARD AIR MODULE
3. LONWORKS NETWORK TO BACNET GATEWAY. GATEWAY LOCATIONS & QTY: 100. BAS INTEGRATES TO GATEWAYS VIA BACNET.



SEQUENCE OF OPERATION:

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

SUPPLY AIR VALVE AND ROOM TEMPERATURE CONTROL:

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

GENERAL EXHAUST AIR VALVE CONTROL:

1. GENERAL EXHAUST AIR VALVE TO TRACK SUPPLY AIR VALVE AT AIRFLOW OFFSET INDICATE ON DRAWINGS.

PURGE MODE:

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

NOTES:

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

TYPICAL LAB AREA TEMPERATURE CONTROL SCHEMATIC

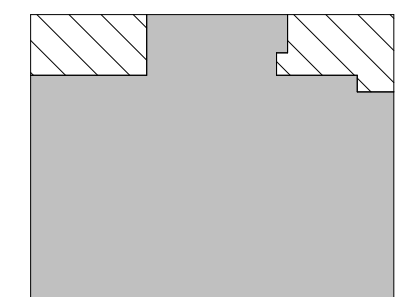
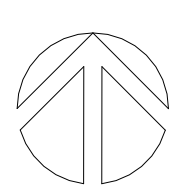
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2

M501



PROJECT LOGO



KEY PLAN

Issued for 100% Design Development 25/09/19

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

REVISIONS

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www.mccallumsather.com

PROJECT:
**MCLENNAN PHYSICAL
LABORATORIES - P078-24-109-QIS
LAB & CQICQ SUITE**

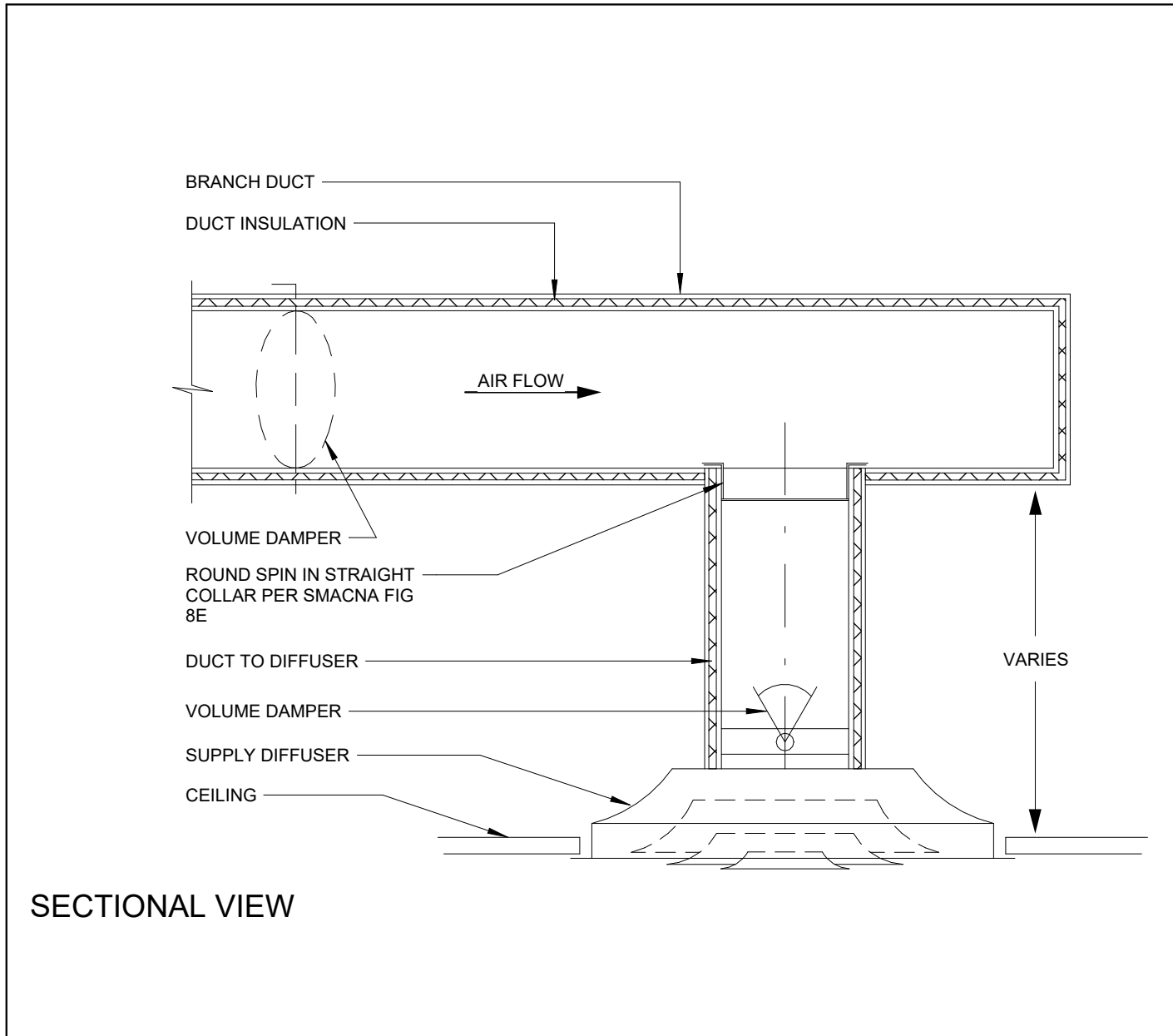
**255 HURON STREET, TORONTO
ONTARIO M5S 3J1**

DRAWING TITLE:
**MECHANICAL CONTROL
DIAGRAMS**

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

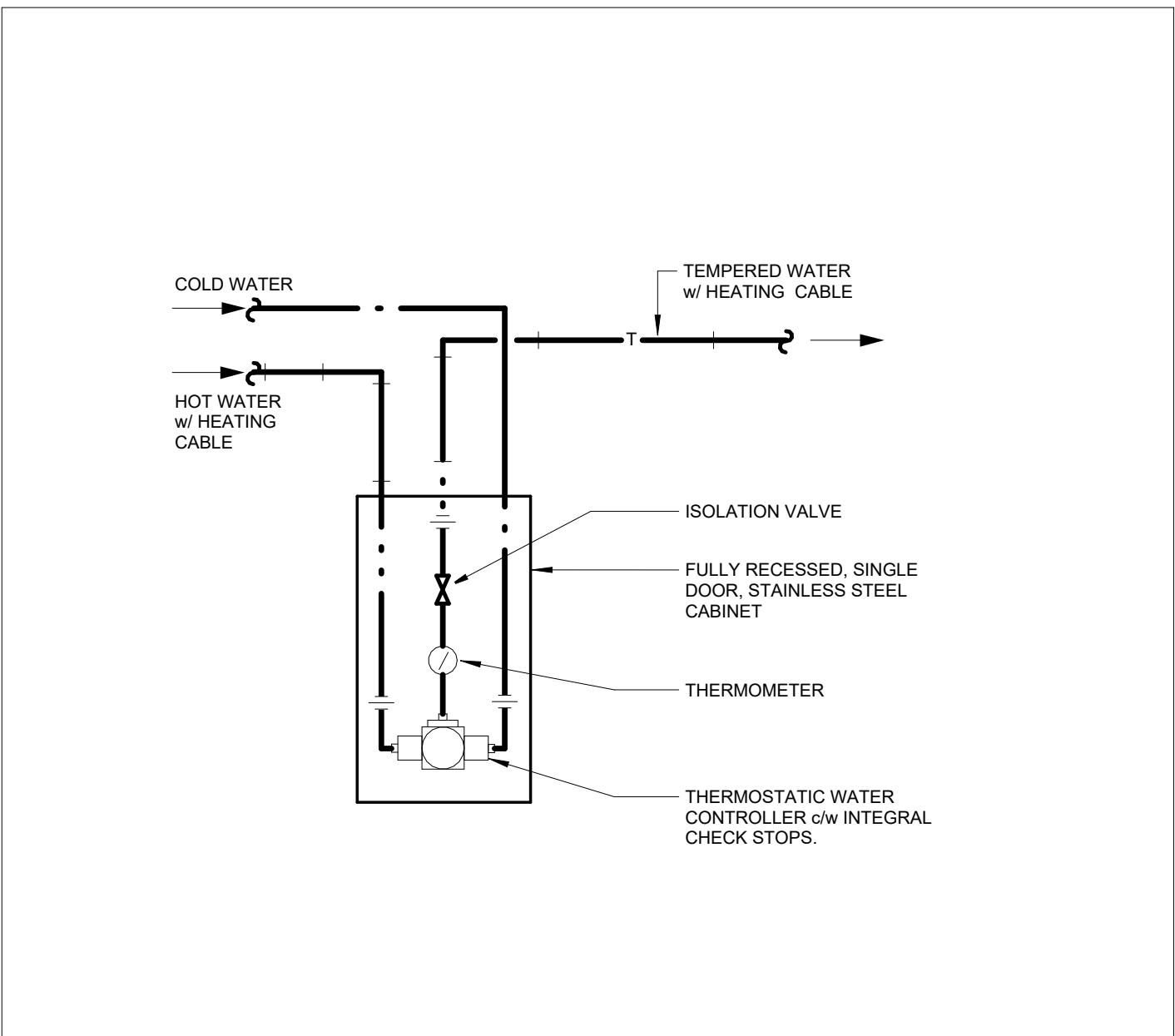
PROJECT NO: **24119**

DRAWING NO: **M501**



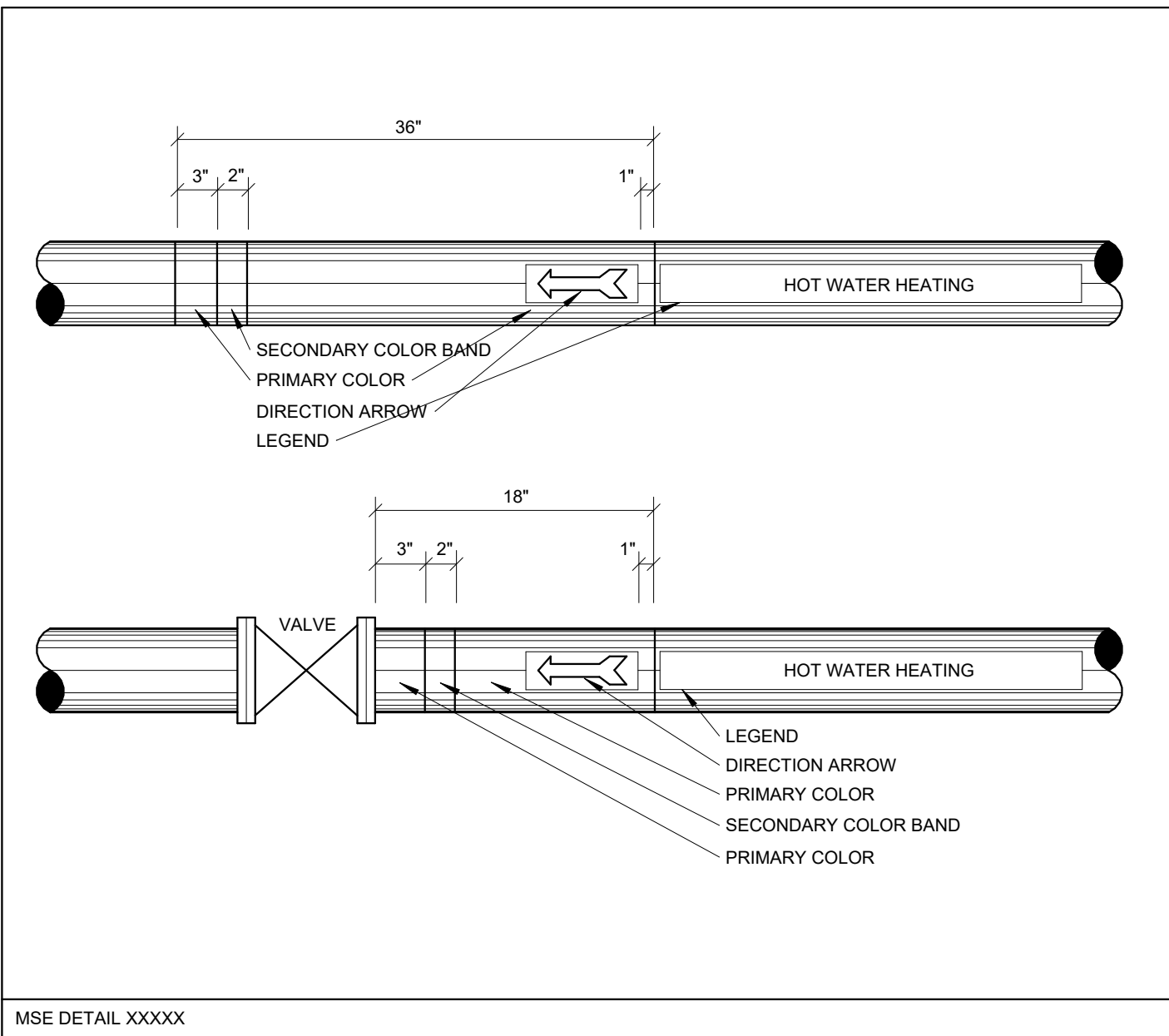
DIFFUSER CONNECTION WITH SPIN COLLAR (20181115)

1
N.T.S. M600



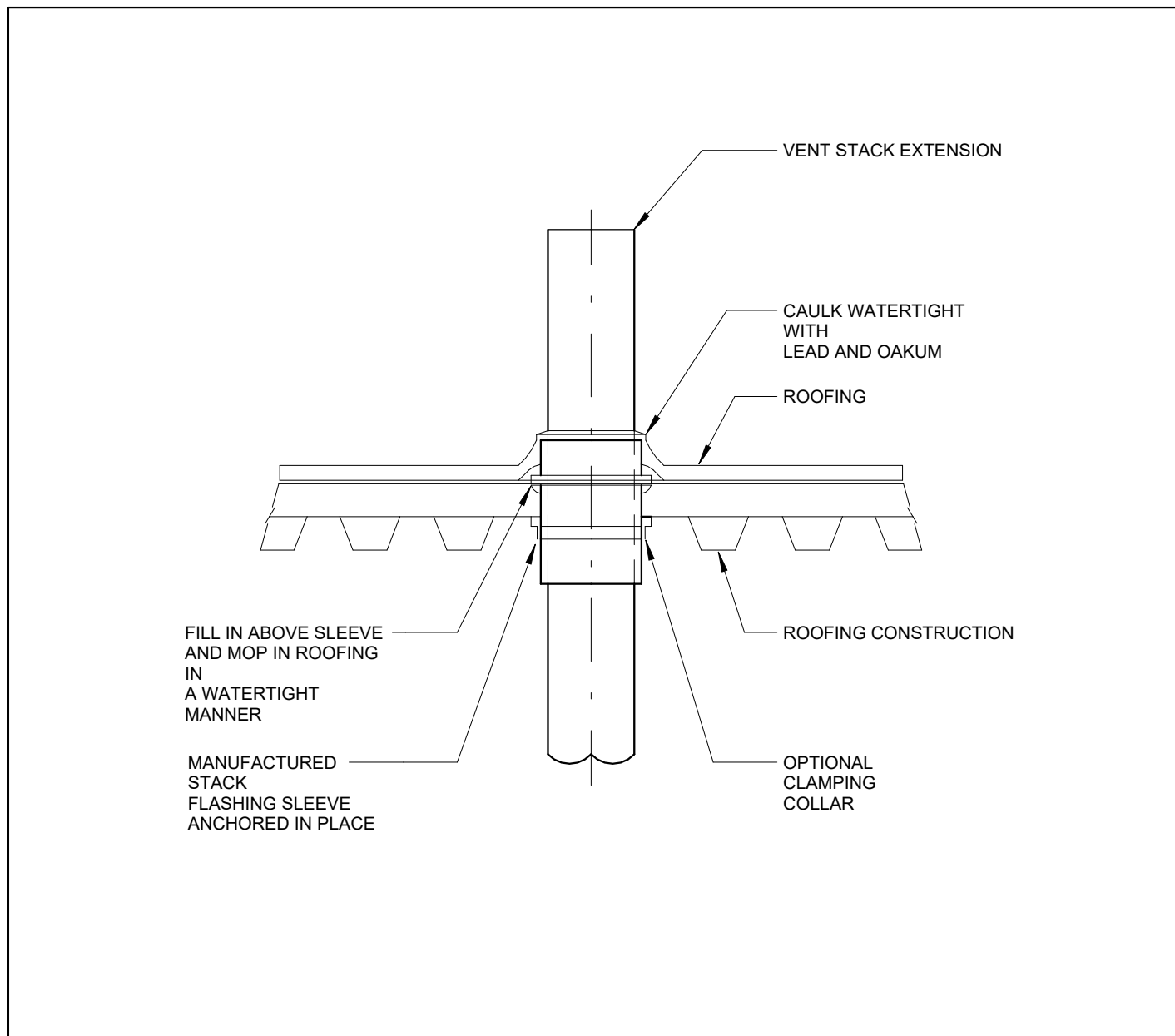
SCHEMATIC OF MIXING VALVE AND CABINET

2
N.T.S. M600



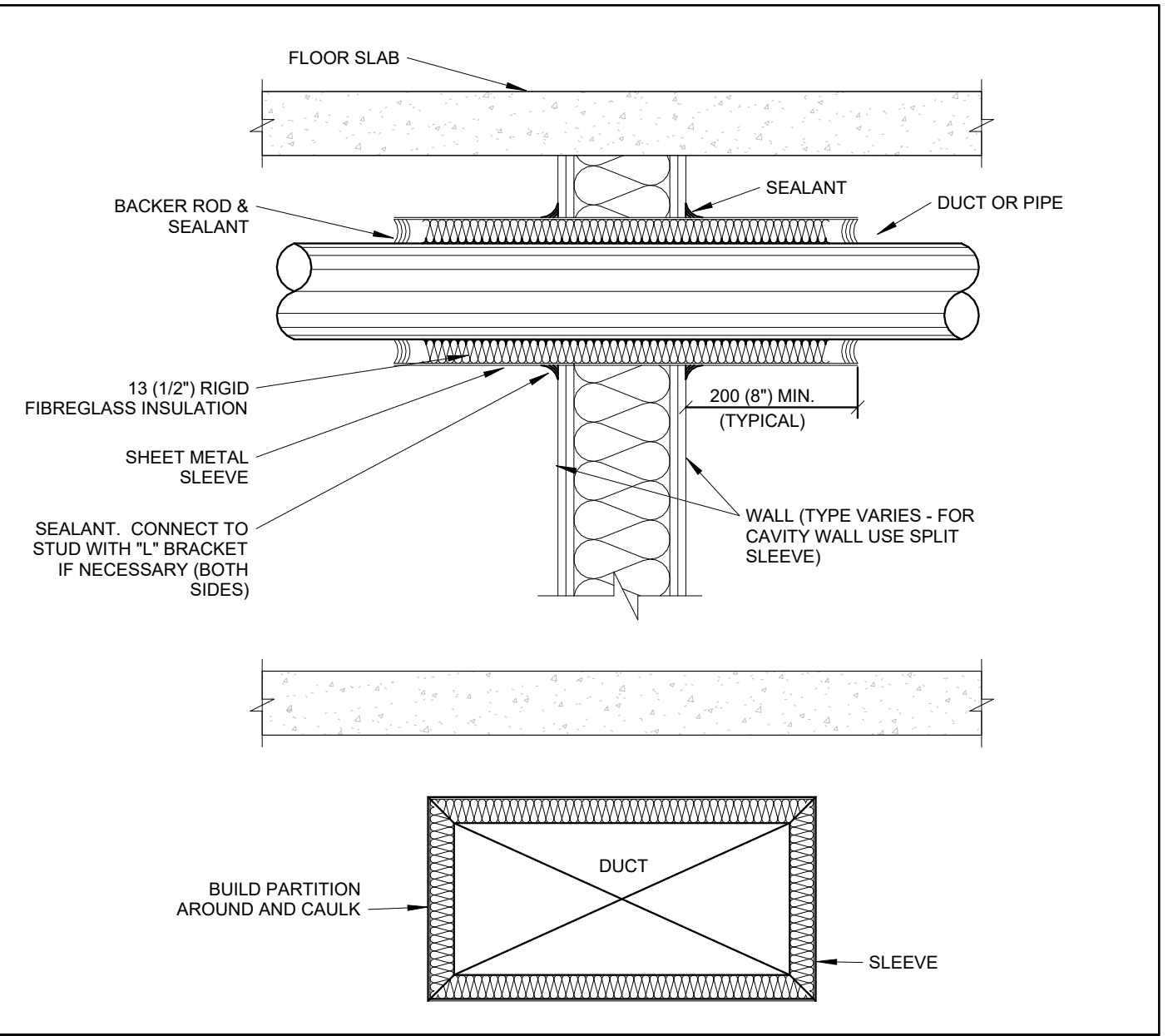
PIPING IDENTIFICATION DETAIL

3
N.T.S. M600



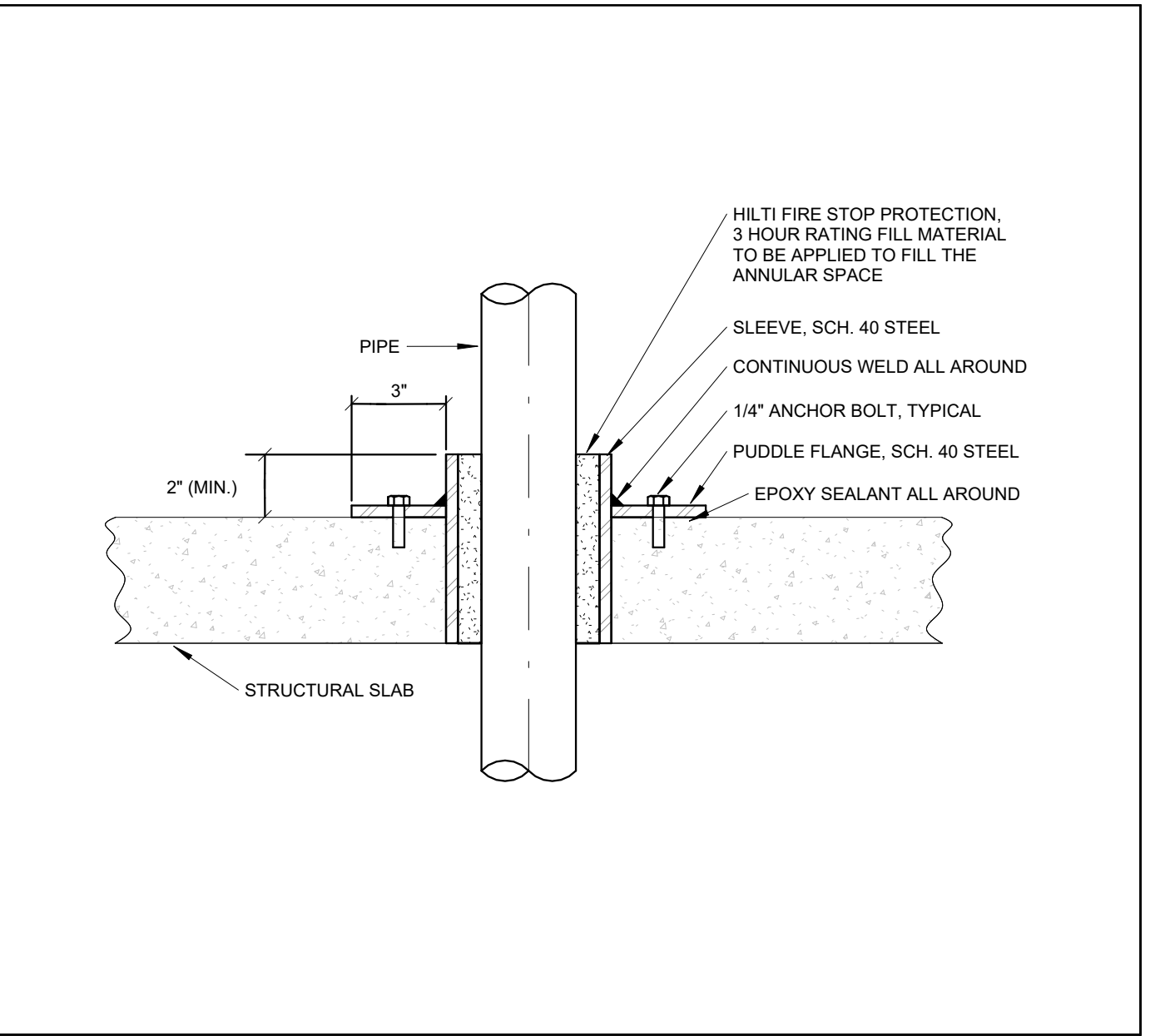
VENT THROUGH ROOF DETAIL

4
N.T.S. M600



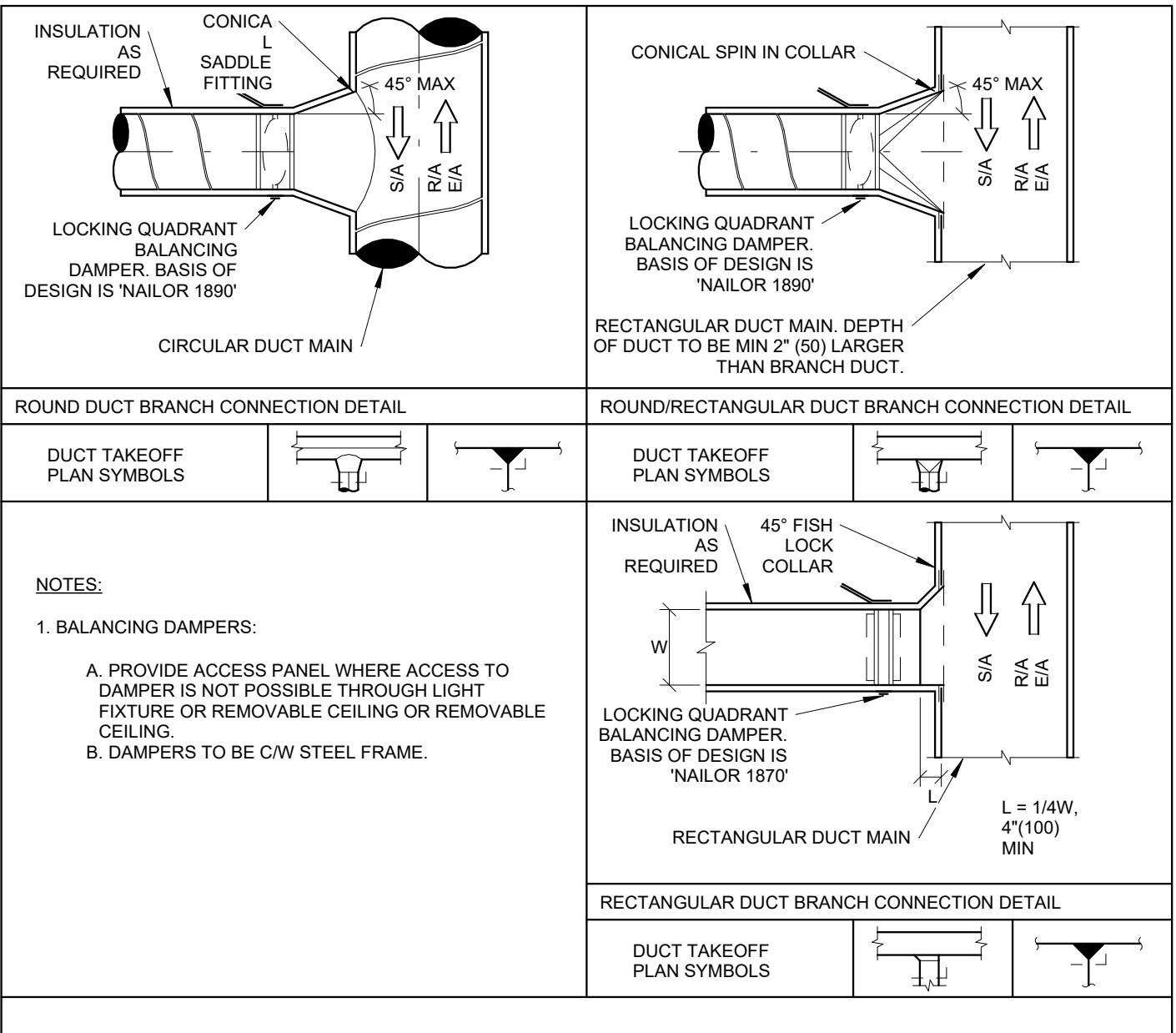
PIPE & DUCT PENETRATIONS DETAIL

5
N.T.S. M600



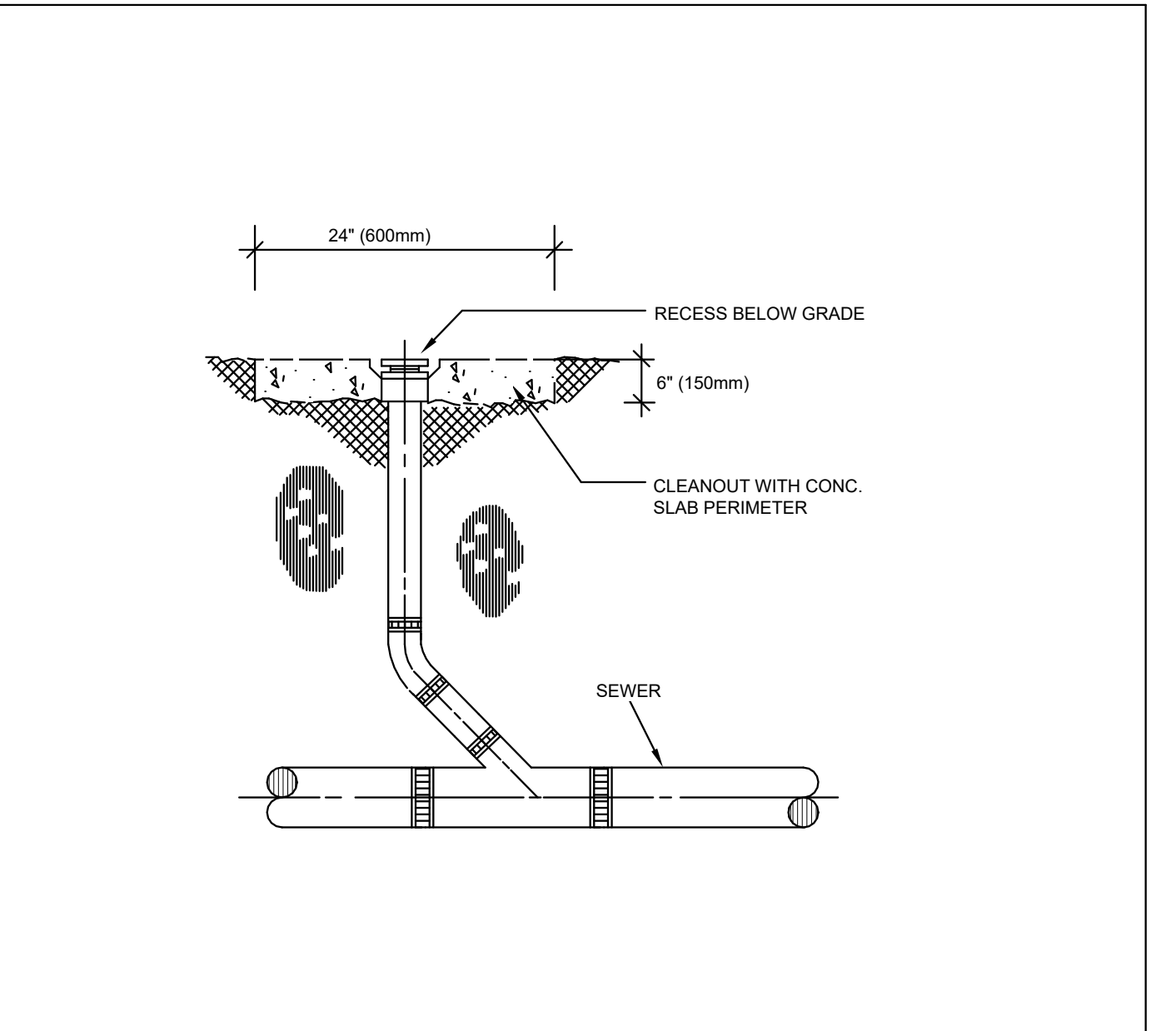
DETAIL OF PIPE PENETRATION THROUGH SLAB

6
N.T.S. M600



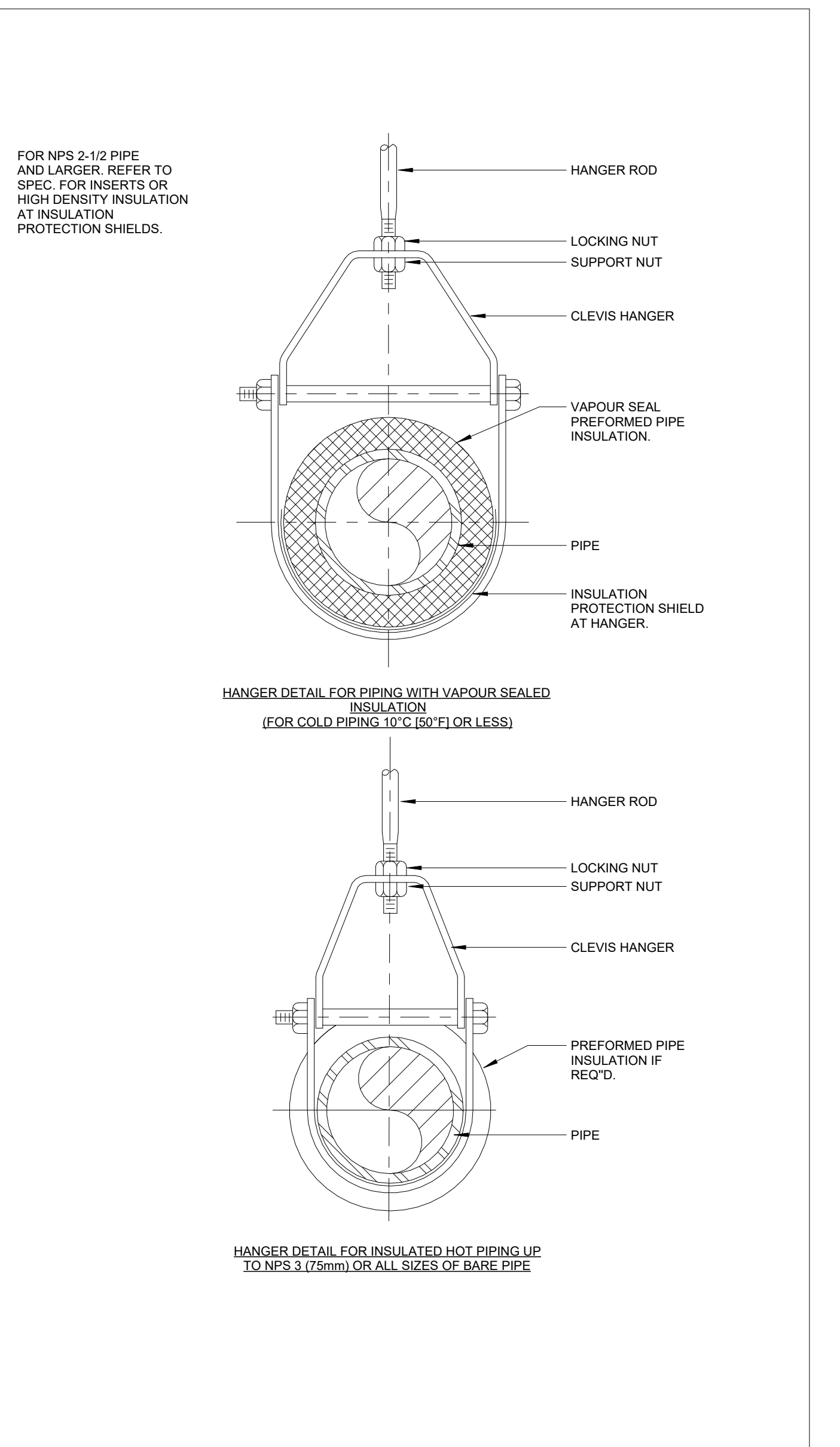
DUCT BRANCH CONNECTION DETAIL

9
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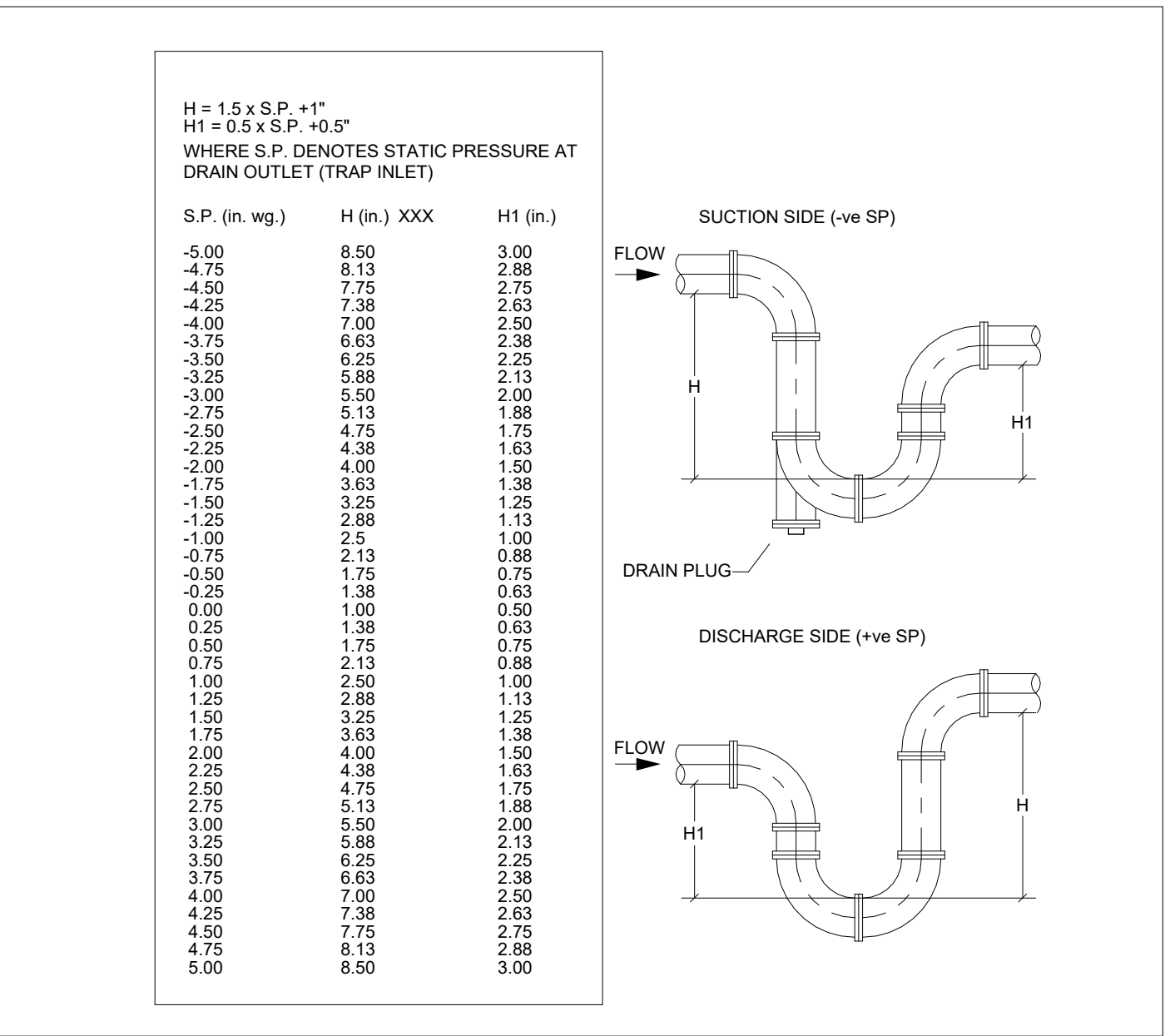
CLEANOUT TO GRADE DETAIL

10
N.T.S. M600



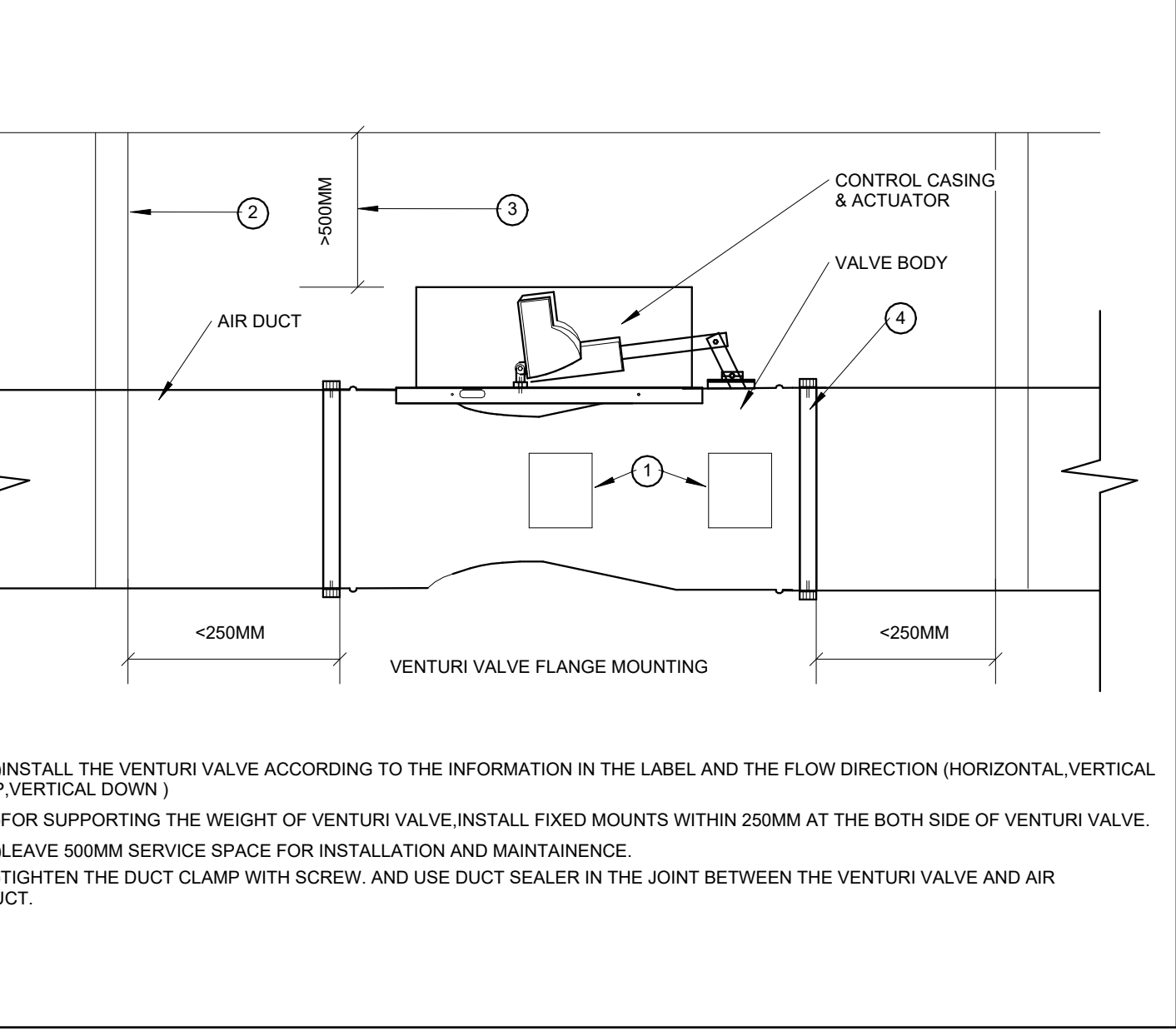
PIPE HANGER DETAIL

7
N.T.S. M600



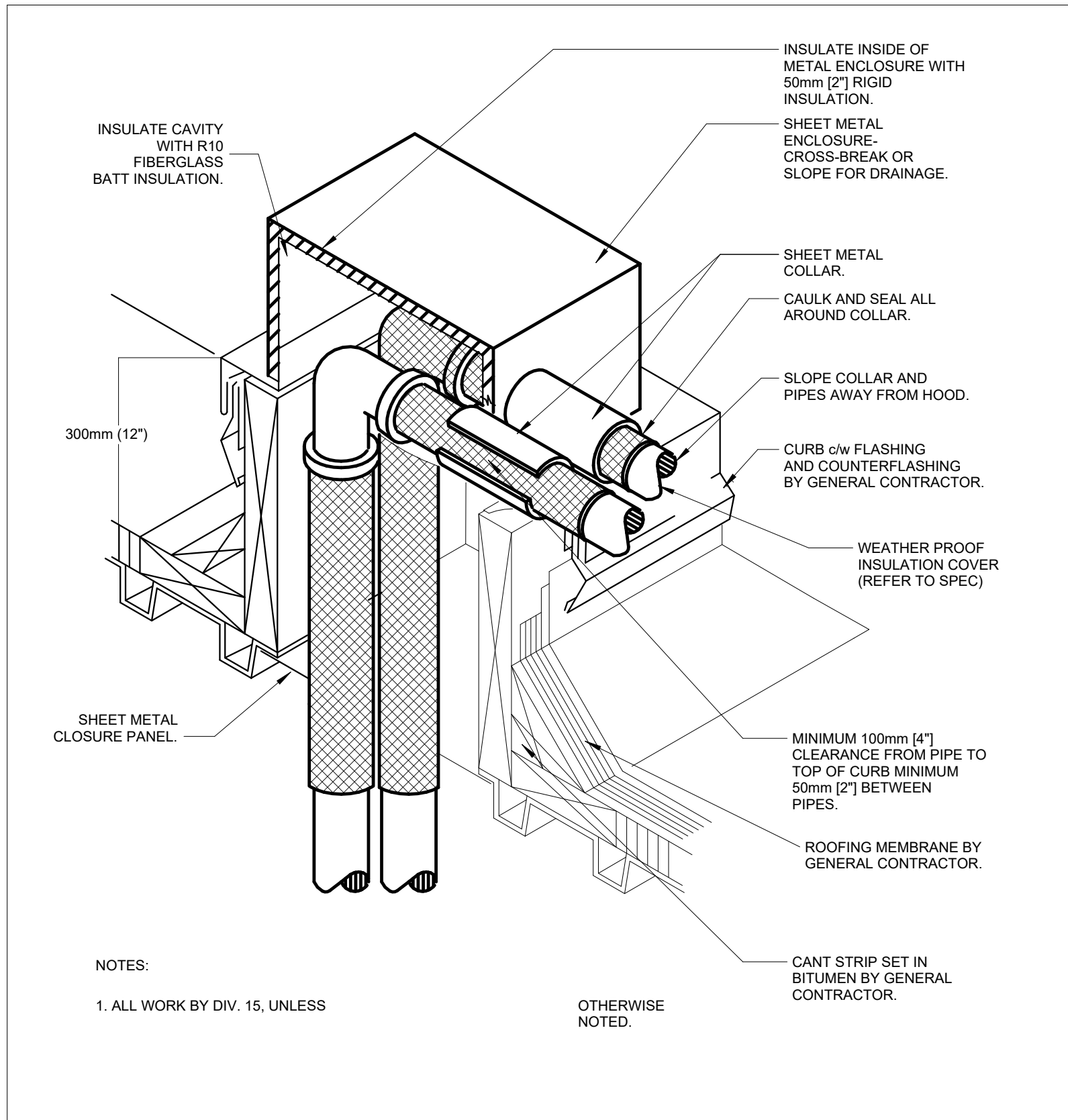
DETAIL OF TRAPS FOR AIR HANDLING UNIT

8
N.T.S. M600



VENTURI VALVE PLUG-IN MOUNTING DETAIL

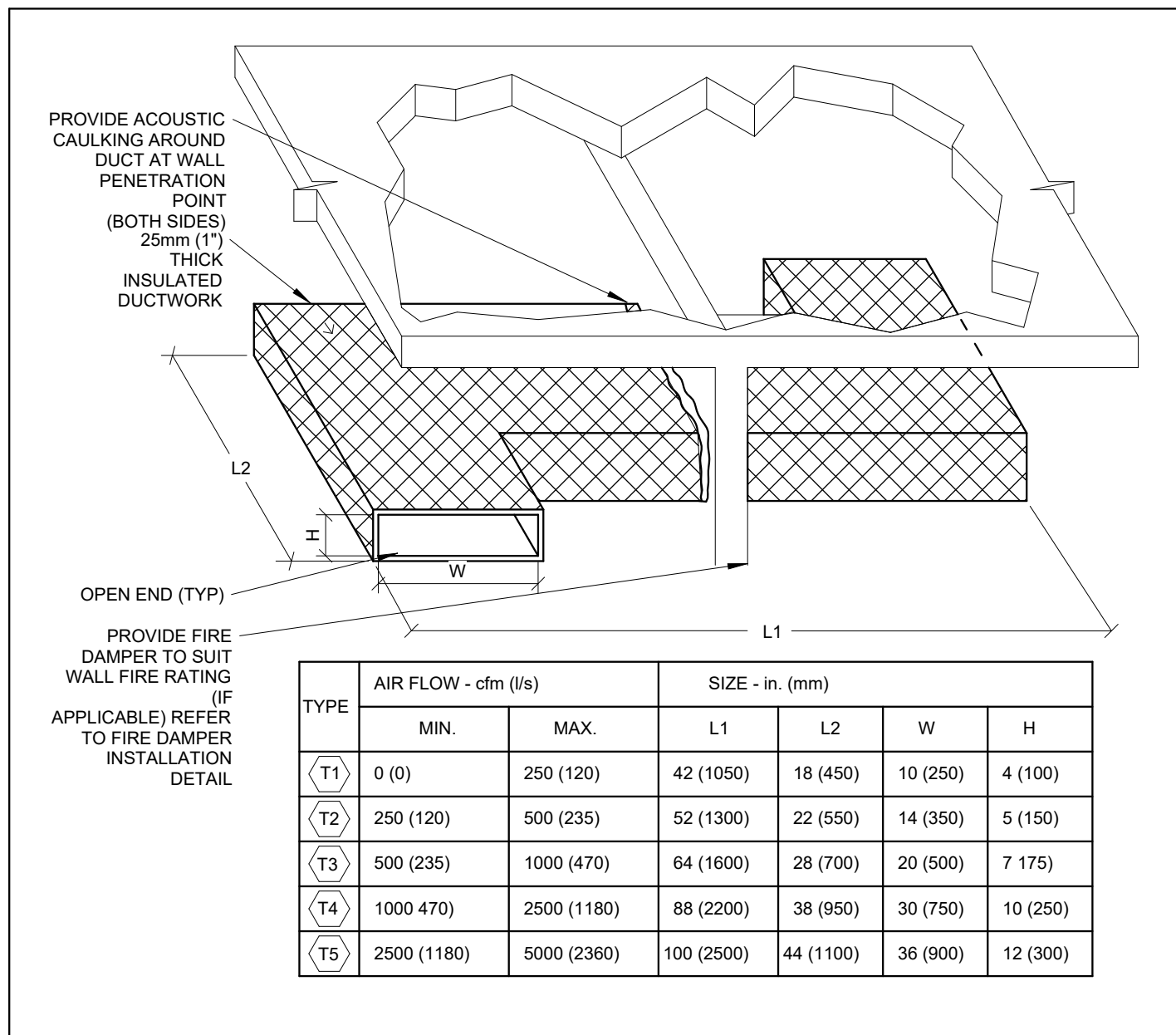
11
N.T.S. M600



PIPE PENETRATIONS THROUGH ROOF

N.T.S.

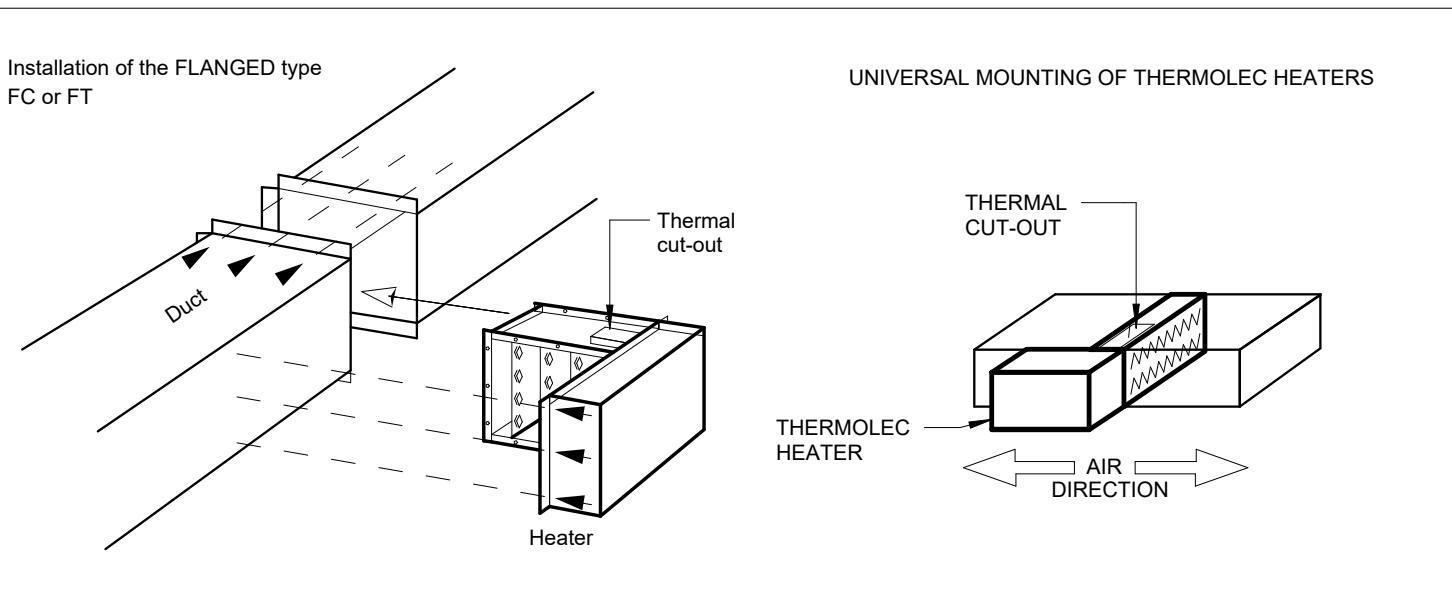
M601



ACOUSTIC TRANSFER DUCT (Z-SHAPE) DETAIL

N.T.S.

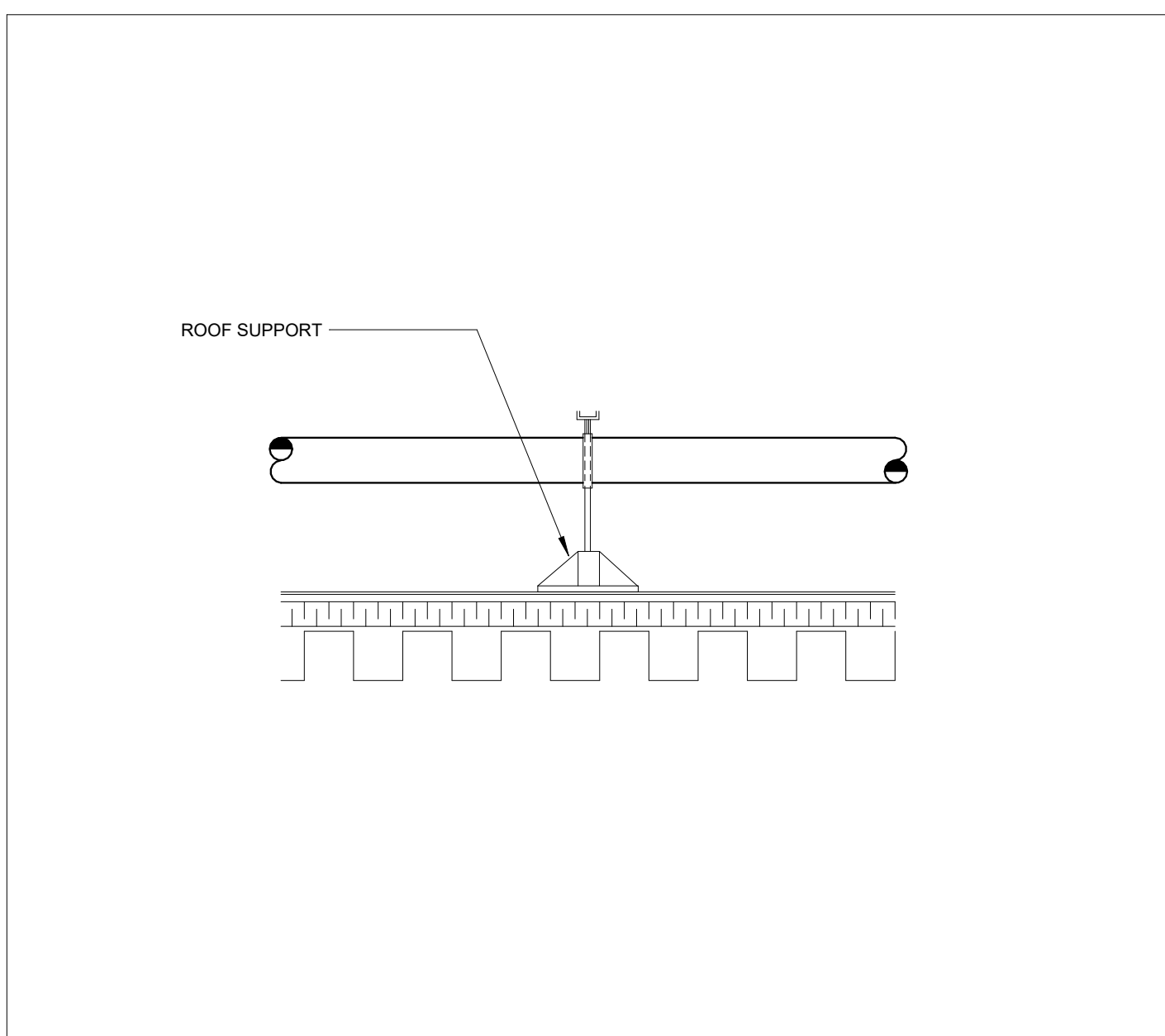
M601



ELECTRIC DUCT HEATER INSTALLATION DETAIL

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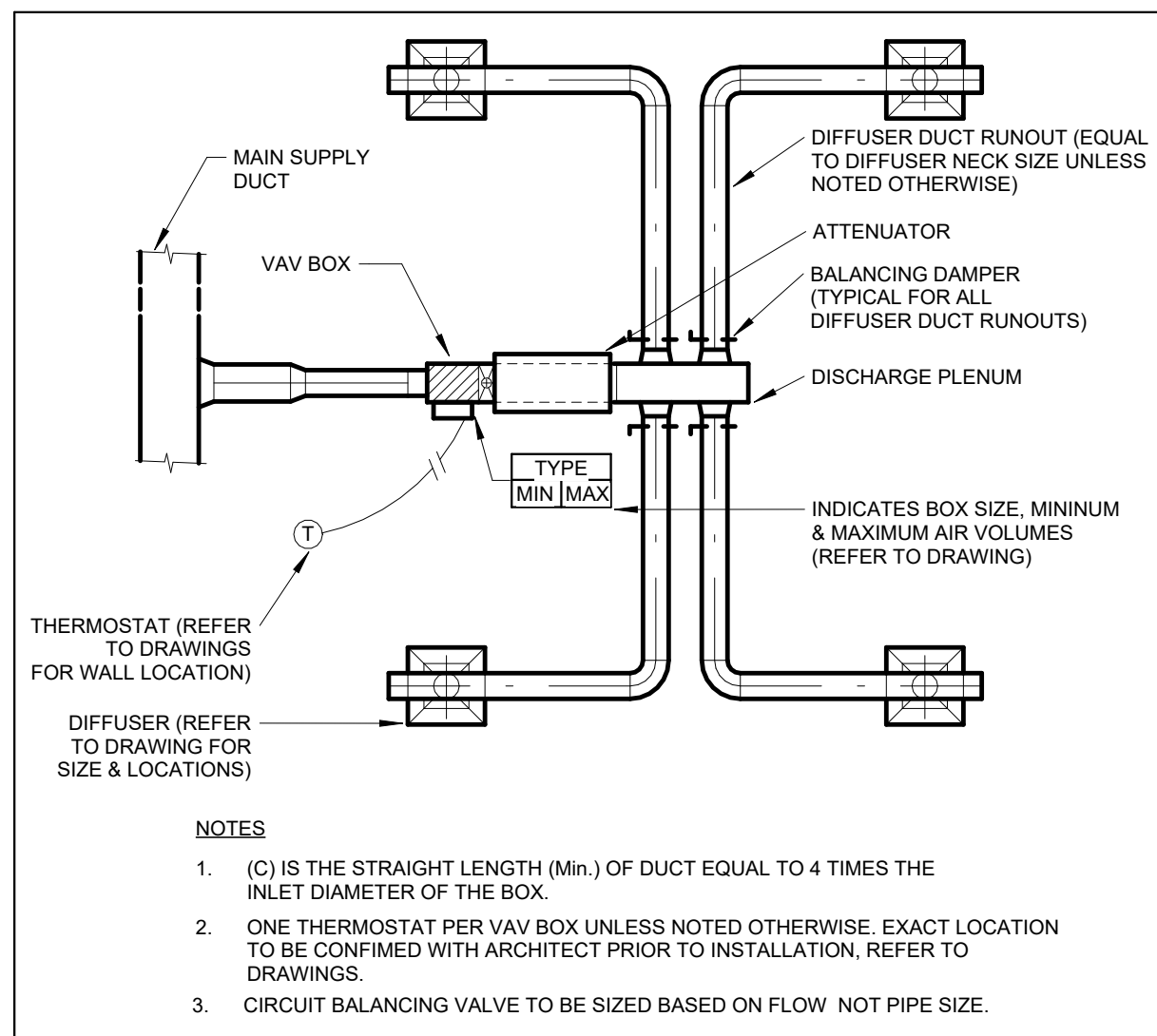
M601



PIPING ROOF SUPPORT

N.T.S.

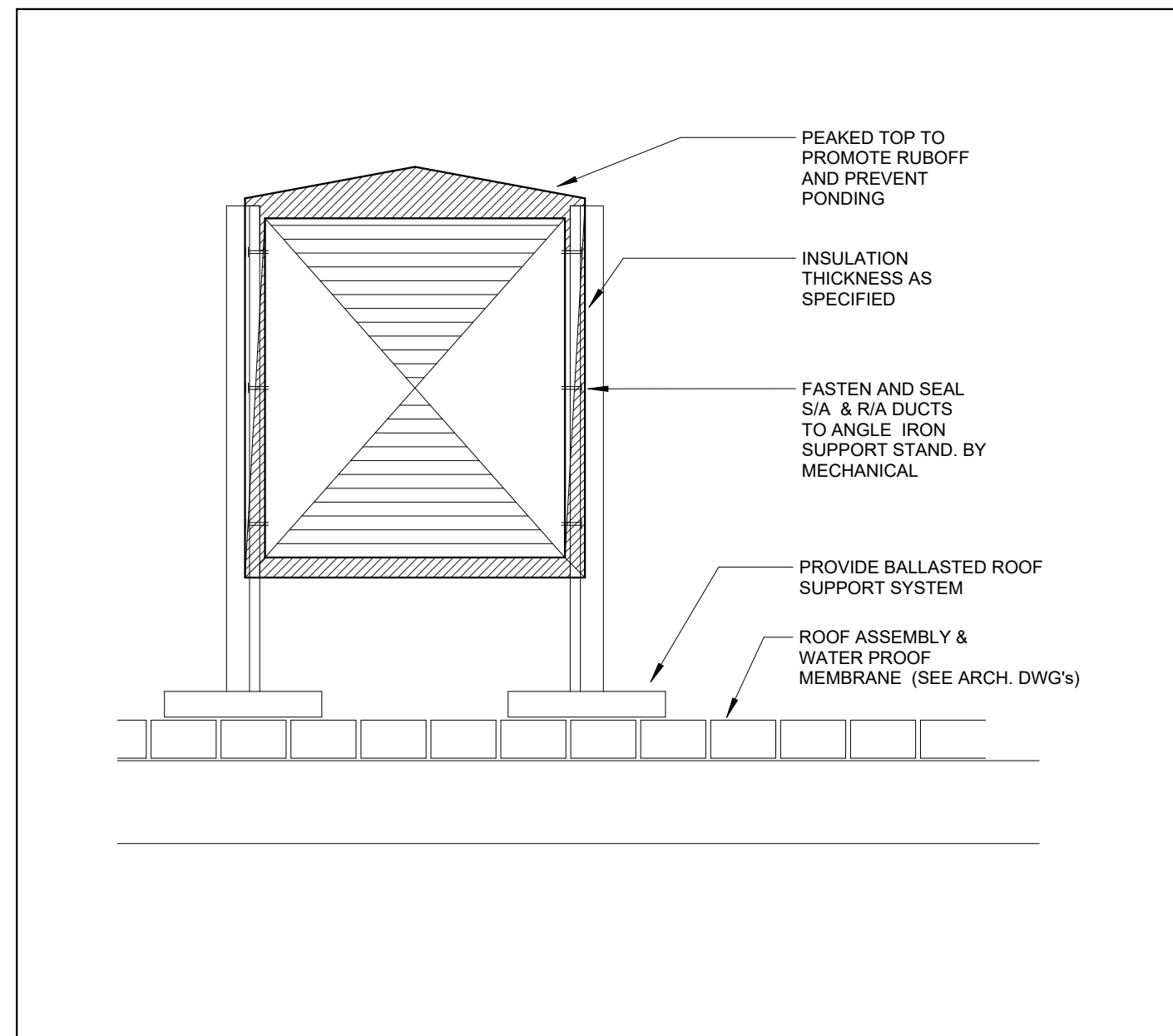
M601



AIR VALVE INSTALLATION (NO RE-HEAT COIL)

N.T.S.

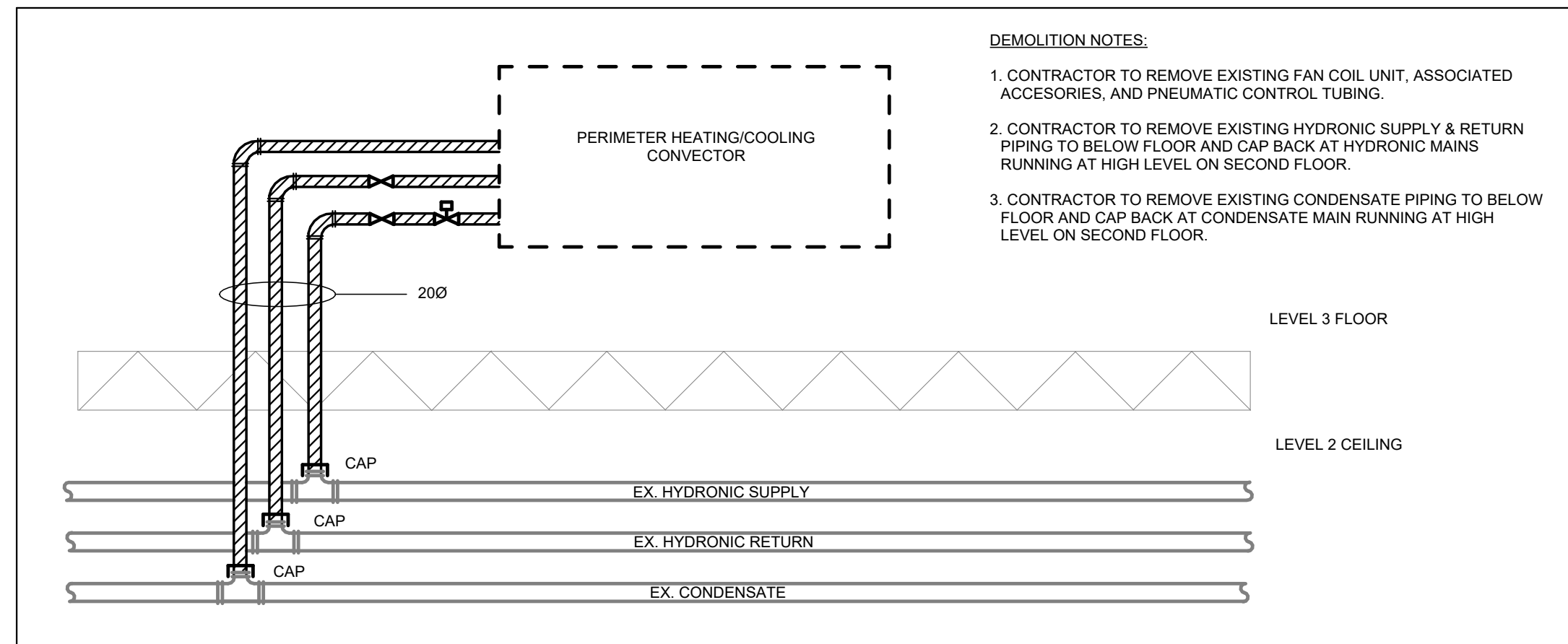
M601



DUCT ROOF SUPPORT DETAIL

N.T.S.

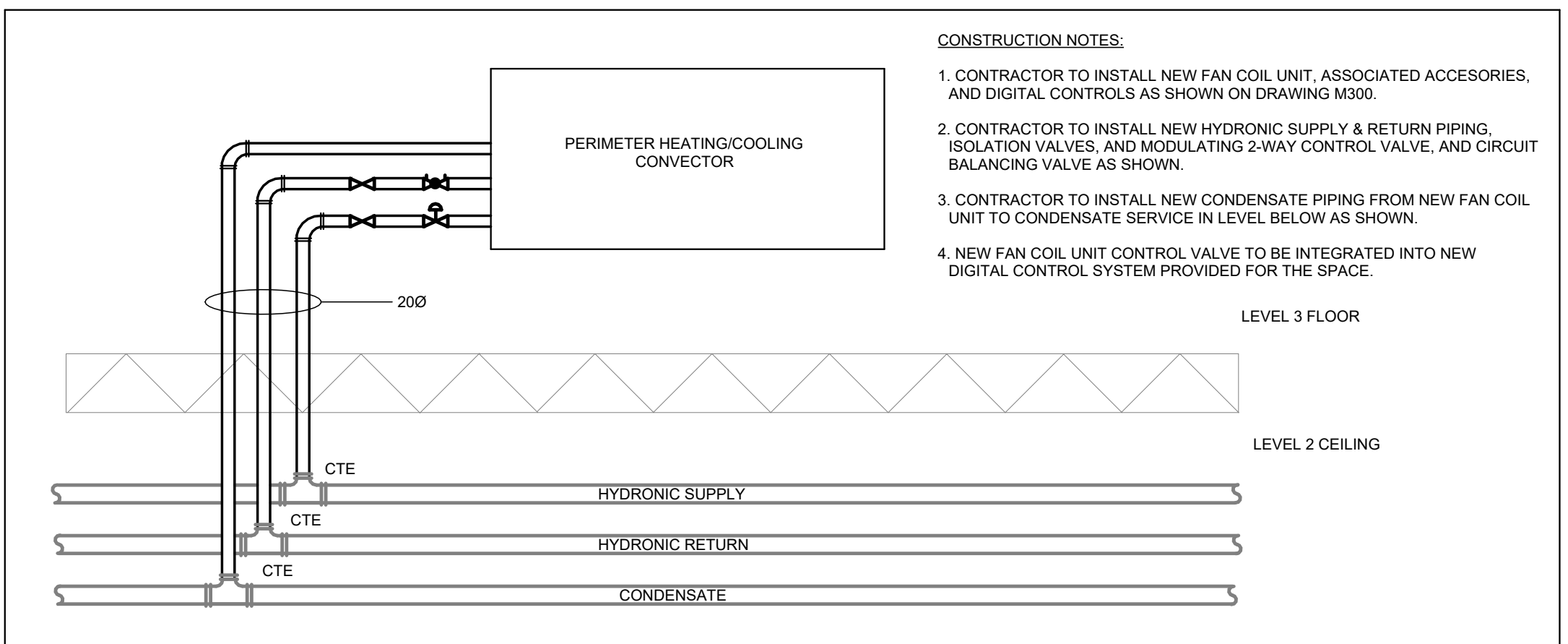
M601



HYDRONICS - DEMOLITION DETAIL

N.T.S.

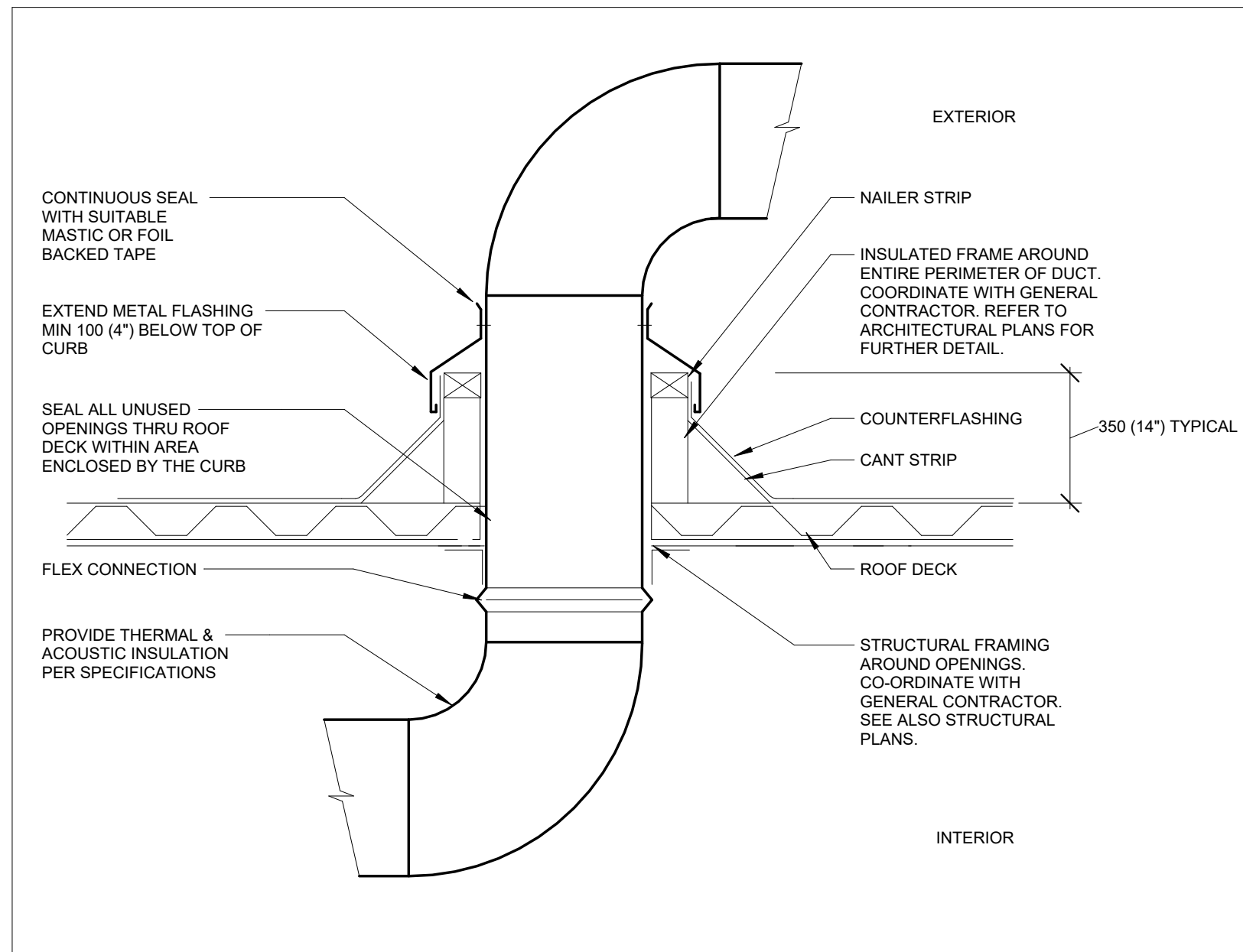
M601



HYDRONICS - INSTALLATION DETAIL

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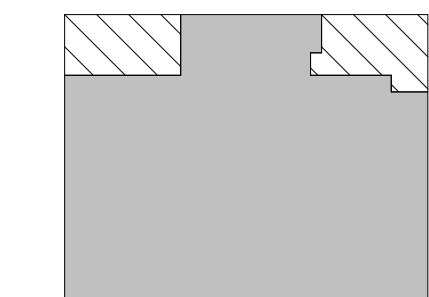
M601



ROOFTOP DUCT PENETRATION

N.T.S.

M601



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

REVISIONS

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SEAL

CONSULTANTS:

PROJECT:
MCLENNAN PHYSICAL LABORATORIES - P078-24-109-QIS LAB & CQICQ SUITE

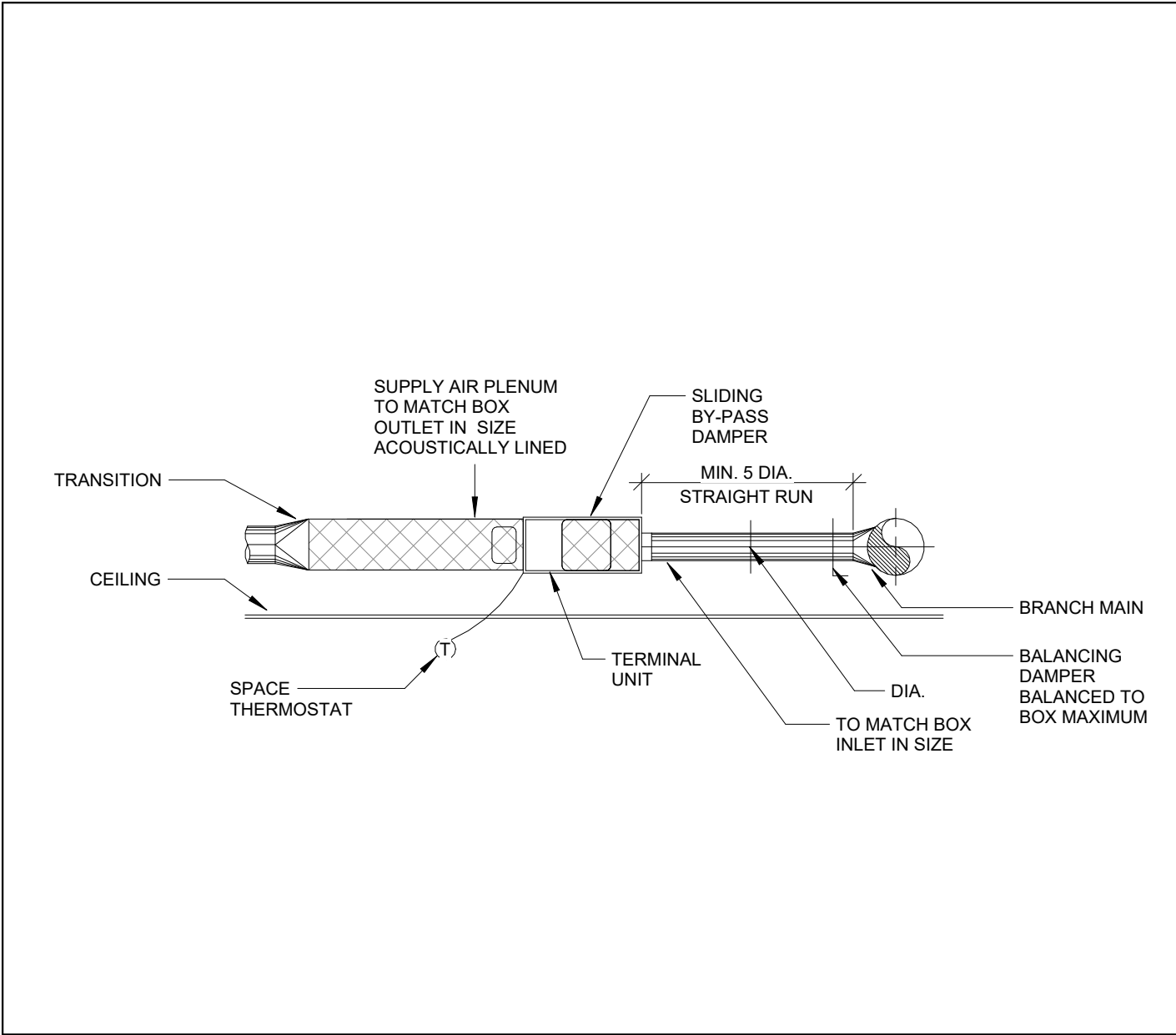
255 HURON STREET, TORONTO ONTARIO M5S 3J1

DRAWING TITLE:
MECHANICAL DETAILS

DRAWN BY: AR DATE: 2025/07/04
CHECKED BY: DR SCALE: N.T.S.

PROJECT NO.: **24119**

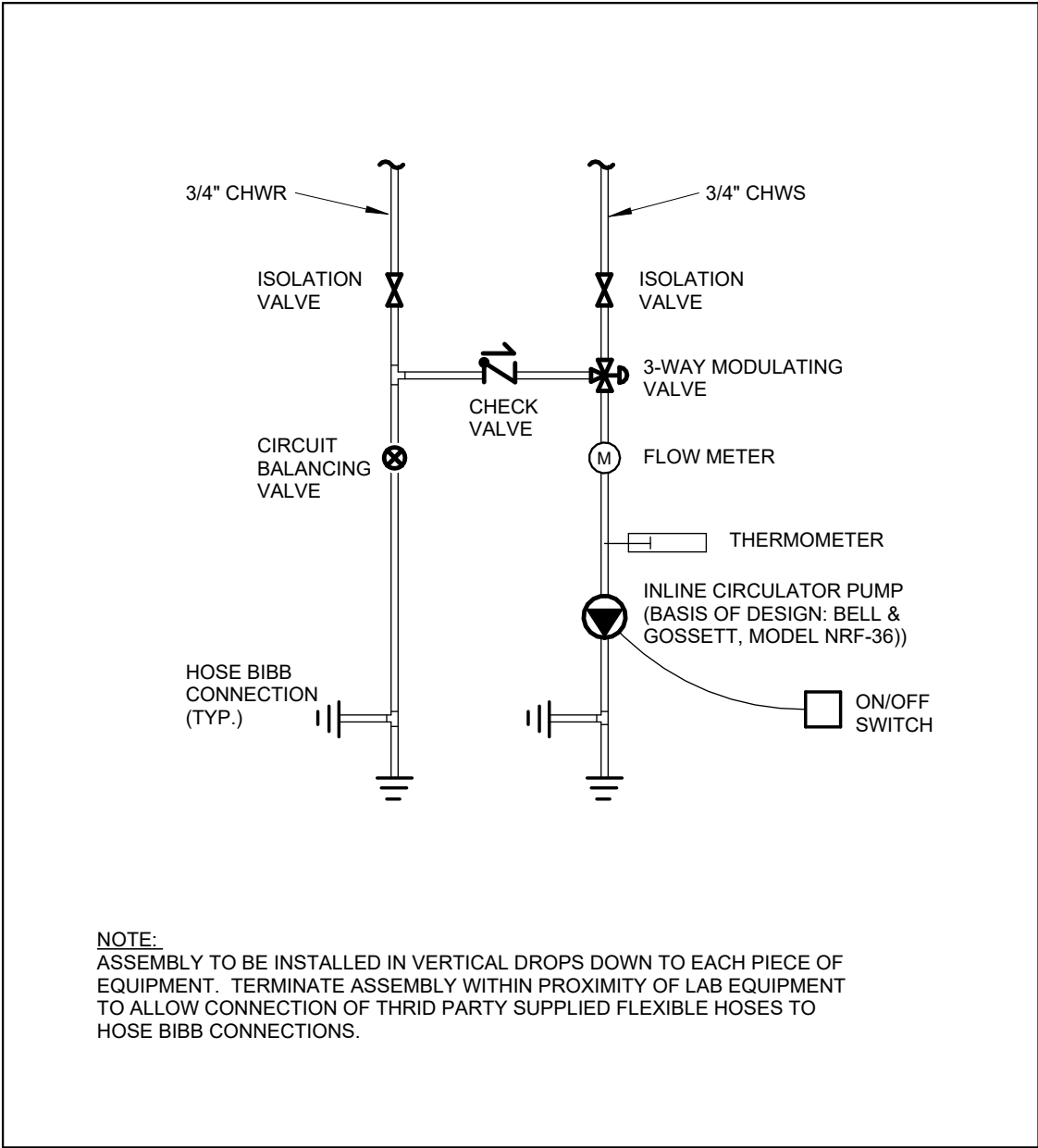
DRAWING NO.: **M601**



TERMINAL BOX DETAIL

N.T.S.

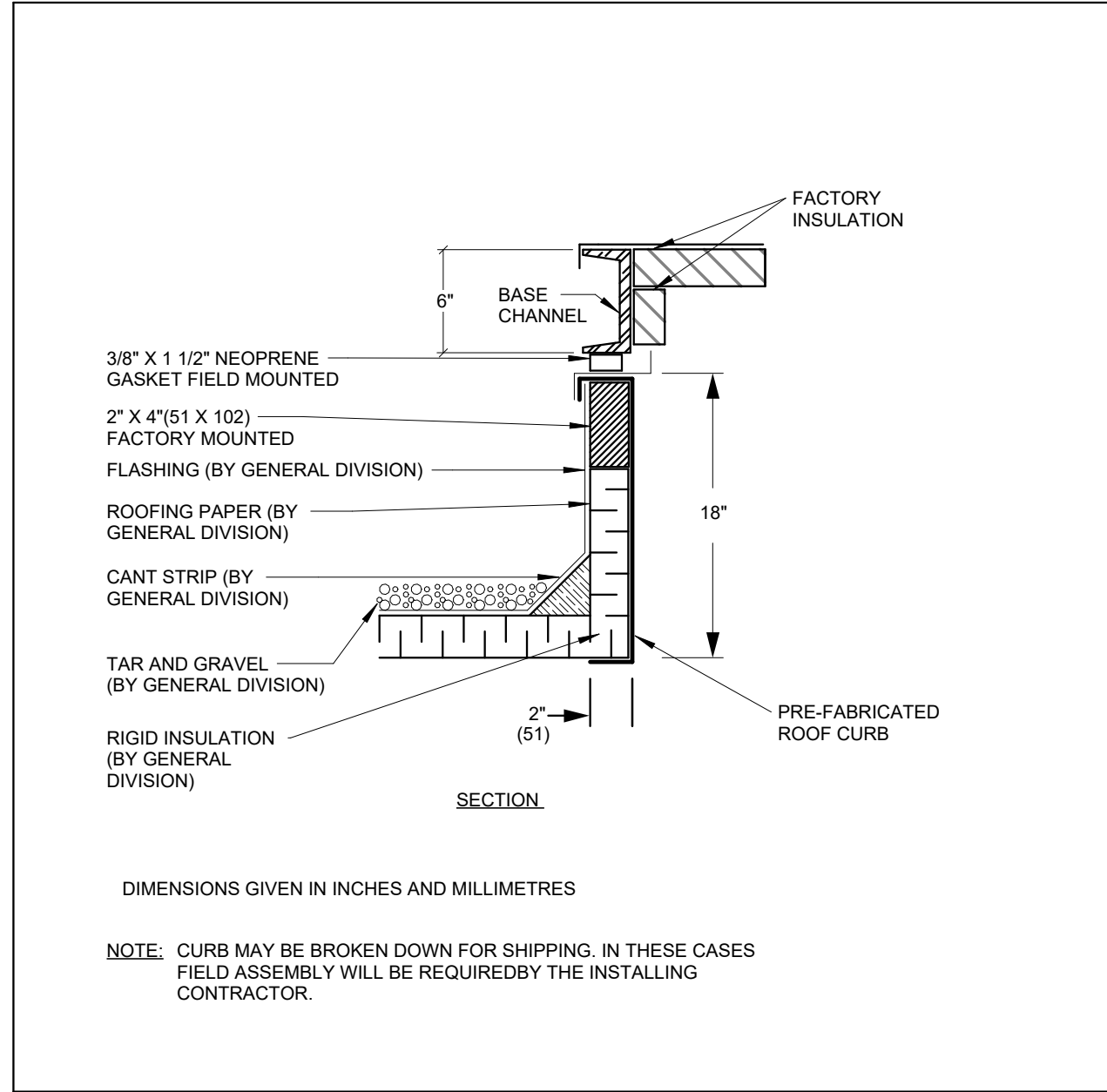
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M602



CHILLED WATER PIPING TO DR HELIUM COMPRESSOR DETAIL

NTS

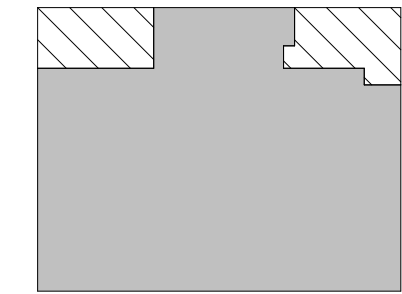
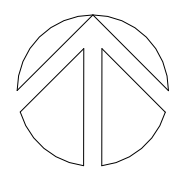
3
M602



AHU-01 ROOF CURB DETAIL

N.T.S.

2
M602



4	ISSUED FOR TENDER	2025-11-27
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ONTARIO M5S 3J1**

DRAWING TITLE:

MECHANICAL DETAILS

DRAWN BY: AR DATE: 2025/07/04

CHECKED BY: DR SCALE: N.T.S

PROJECT NO: 24119

DRAWING NO:

M602

AIR HANDLING UNIT SCHEDULE (OWNER PROVIDED EQUIPMENT)																																																			
TAG	MFG	MODEL	AREA SERVED	REFRIG.	COOLING										HEATING										SUPPLY FAN								RETURN FAN								ELECTRICAL								OPER. WT.		NOTES
					TOT. CAP.		SENS. CAP. (kW)	EAT DB (°C)	EAT WB (°C)	LAT DB (°C)	LAT WB (°C)	EER (MBH/KW)	CAPACITY @ 8°C AMBIENT	TEMP RISE @ 8°C AMBIENT	COP @ 8°C	CAPACITY @ -8°C AMBIENT	TEMP RISE @ -8°C AMBIENT	COP @ -8°C	AIR FLOW		ESP (Pa)	RPM	MOTOR POWER		AIR FLOW		ESP (Pa)	RPM	MOTOR POWER		VOLT.	PH.	HZ	MCA (A)	MOCp (A)	kg	lbs														
					kW	Tons													L/s	CFM			kW	HP	L/s	CFM																									
AHU-01	ENGINEERED AIR	FWEH243K/OJHRW/CR/MV	QIS LAB	R454B	67	19	47	24.3	17.2	7.9	7.9	9.9	49 kW	-1 °C	3.36	30 kW	-7 °C	2.32	2,360	5,000	497	2999	4.6	6.2	1,888	4,000	497	1971	3.7	5	575	3	60	103	110	5987	13,199														
AHU-02	ENGINEERED AIR	FWEH113K/OJHRW600/CR/MV		R-410A	0	0	0	-273.2	-273.2	-273.2	-273.2	0.0	0 kW	-273 °C		0 kW	-273 °C		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0														

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

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

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

GENERAL EXHAUST AIR VALVE (GEX) SCHEDULE									
NOTES: 1. TYPICALLY LOW PRESSURE STYLE VALVE BODY; MINIMUM 0.3" WC (150 Pa) PRESSURE 2. STAINLESS STEEL BODY SS304									
TAG	NO. OF VALVES	MFG	MODEL	SIZE	DESIGN AIR FLOW				NOTES
					MIN		MAX		
GEX-001	2	PHOENIX	PVEA212L-AMBHY-BMT	300	1901	897	1901	897	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES
GEX-002	1	PHOENIX	PVEA112L-AMBHY-BMT	300	801	378	801	378	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES
GEX-003	1	PHOENIX	PVEA108L-AMBHY-BMT	200	301	142	269	127	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES
GEX-004	1	PHOENIX	PVEA114L-AMBHY-BMT	300	1000	472	1000	472	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES
GEX-005	1	PHOENIX	PVEA114L-AMBHY-BMT	300	1000	472	1000	472	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES

SUPPLY AIR VALVE (SAV) SCHEDULE									
NOTES: 1. TYPICALLY LOW PRESSURE STYLE VALVE BODY; MINIMUM 0.3" WC (150 Pa) PRESSURE 2. STAINLESS STEEL BODY SS304									
TAG	NO. OF VALVE	MFG	MODEL	SIZE	DESIGN AIR FLOW				NOTES
					MIN.		MAX.		
SAV-001	2	PHOENIX	PVSA212L-AMDHY-500	300	1901	897	1901	897	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES
SAV-002	1	PHOENIX	PVSA112L-AMDHY-500	300	801	378	801	378	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES
SAV-003	1	PHOENIX	PVSA108L-AMDHY-500	200	301	142	301	142	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES
SAV-004	1	PHOENIX	PVSA114L-AMDHY-500	300	1000	472	1000	472	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES
SAV-005	1	PHOENIX	PVSA114L-AMDHY-500	300	1000	472	1000	472	HORIZONTAL MOUNTING; LOW PRESSURE RANGE VALVES


PLUMBING FIXTURE SCHEDULE				
NOTES: -REFER TO PLUMBING ROUGH-IN SCHEDULE FOR REQUIRED SERVICE CONNECTIONS AND SIZES				
TAG	MFG	MODEL	DESCRIPTION	ACCESSORIES & NOTES
EW-1	GUARDIAN	EYE WASH GBF1849LH-R	EYE WASH - DECK MOUNTED, SWING DOWN	LAWLER MODEL # 911E/F EMERGENCY THERMOSTATIC MIXING VALVE. PROVIDE SHUT-OFFS AT EMERGENCY MIXING VALVE PROVIDE P-TRAP
S-1	FRANKE	AWHBS2419-7	SINGLE BOWL UNDER COUNTER SINK - GRADE 18-10 18 GA. Nominal Dimensions: 483 mm (19") wide x 429 mm (16-7/8") long x 230 mm (9-1/16") high	PROVIDE: - 7074.010.002 COLONY PRO SINGLE HANDLE FAUCET - 570-86820 POINT OF USE THERMOSTATIC WATER MIXING VALVE - PROVIDE TEE, ADAPTORS AND FLEX. COPPER TUBING TO SUIT INSTALLATION. - PROVIDE TEMPERED WATER TO HOT SIDE OF FAUCET. - LFBV170 FAUCET SUPPLIES - 8912CB P-TRAP
S-2	FRANKE	KBX110-18	SINGLE BOWL UNDER COUNTER SINK - GRADE 18-10 18 GA. Nominal Dimensions: 483 mm (19") wide x 429 mm (16-7/8") long x 230 mm (9-1/16") high	PROVIDE: - 7074.010.002 COLONY PRO SINGLE HANDLE FAUCET - 570-86820 POINT OF USE THERMOSTATIC WATER MIXING VALVE - PROVIDE TEE, ADAPTORS AND FLEX. COPPER TUBING TO SUIT INSTALLATION. - PROVIDE TEMPERED WATER TO HOT SIDE OF FAUCET. - LFBV170 FAUCET SUPPLIES - 8912CB P-TRAP

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

AIR COOLED CHILLER SCHEDULE (OWNER PROVIDED EQUIPMENT)																
TAG	MFG.	MODEL	REFRIGERANT	COOLING		EVAPORATOR FLUID			ELECTRICAL					OPERATING WEIGHT		NOTES
				kW	Tons	EER	TYPE	FLOW (GPM)	VOLUME (USGAL)	V	PH	Hz	MCA	MOCp	kg	lbs
CH-1	HASKRIS	OPC24-9BG3Q32	R454B	56	16	0.0	CHILLER	40	25	575	3	60	54	70	998	2200

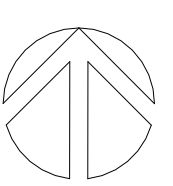

AIR TERMINAL UNIT (VAV) & REHEAT COIL SCHEDULE											
NOTES -UNITS SELECTED TO MEET NC 20 FOR DISCHARGE AND RADIATED NOISE PER AHRI 885-2008 -UNITS TO INCLUDE INTEGRAL 3 FOOT ATTENUATOR WITH PROTECTIVE SHROUD -REHEAT COILS SIZED FOR EAT 55°F, LAT 75°F...											
TAG	AREA SERVED	MFG	MODEL	SIZE	REHEAT COIL CAPACITY		DESIGN AIR FLOW				NOTES
					HEATING OUTPUT		MIN.		MAX.		
VAV-01	HUB		SDV10	250	8.5	2.5	375	177	750	354	
VAV-02	MEETING ROOM	PRICE INDUSTRIES	SDV6	150	3.8	1.1	325	153	350	165	C/W ELECTRIC HEATING COIL AND 3FT. SOUND ATTENUATOR
VAV-03	ADMIN OFFICE	PRICE INDUSTRIES	SDV6	150	2.0	0.6	90	42	180	85	C/W ELECTRIC HEATING COIL AND 3FT. SOUND ATTENUATOR
VAV-04	DIRECTOR'S OFFICE	PRICE INDUSTRIES	SDV6	150	3.3	1.0	151	71	301	142	C/W ELECTRIC HEATING COIL AND 3FT. SOUND ATTENUATOR
VAV-05	VISITOR'S OFFICE	PRICE INDUSTRIES	SDV6	150	1.7	0.5	81	38	161	76	C/W ELECTRIC HEATING COIL AND 3FT. SOUND ATTENUATOR
VAV-06	STUDENT/ POST DOCTORATE OFFCE	PRICE INDUSTRIES	SDV6	150	2.7	0.8	125	59	250	118	C/W ELECTRIC HEATING COIL AND 3FT. SOUND ATTENUATOR

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



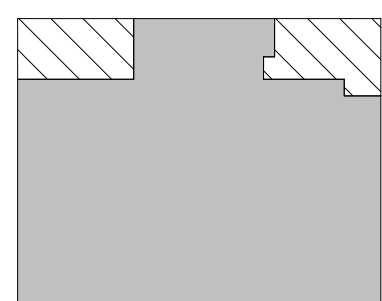
UNIVERSITY OF
TORONTO

PROJECT LOGO



TRUE NORTH

CONSTRUCTION NORTH



KEY PLAN

Issued for 100% Design Development

25/09/19

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DRAWING TITLE:
SCHEDULES

DRAWN BY: ARDATE: 2025/07/04

CHECKED BY: DRSCALE:

PROJECT NO: 24119

DRAWINGS NO: M800