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MECHANICAL SYMBOL LEGEND

EXISTING/DEMOLISHED PIPING:

—[TYPE]—	EXISTING PIPEWORK TO BE DEMOLISHED
—[TYPE]—	EXISTING PIPEWORK TO REMAIN
—DCW—	EXISTING DOMESTIC COLD WATER
—DHW—	EXISTING DOMESTIC HOT WATER
—DHWRC—	EXISTING DOMESTIC HOT WATER RECIRC.

PLUMBING:

—DCW—	DOMESTIC COLD WATER
—DHW—	DOMESTIC HOT WATER
—DHWRC—	DOMESTIC HOT WATER RECIRC.
—SW—	SOFTENED DOMESTIC WATER
—TW—	DOMESTIC TEMPERED WATER
—NPW—	NON-POTABLE WATER PIPE
—SAN—	SANITARY DRAINAGE
—SAN—	SANITARY DRAINAGE (BELOW)
—V—	SANITARY VENT
—STW—	STORM WATER DRAINAGE
—STW—	STORM WATER DRAINAGE (BELOW)

FUEL PIPING:

—G—	NATURAL GAS
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HEATING/COOLING PIPING:

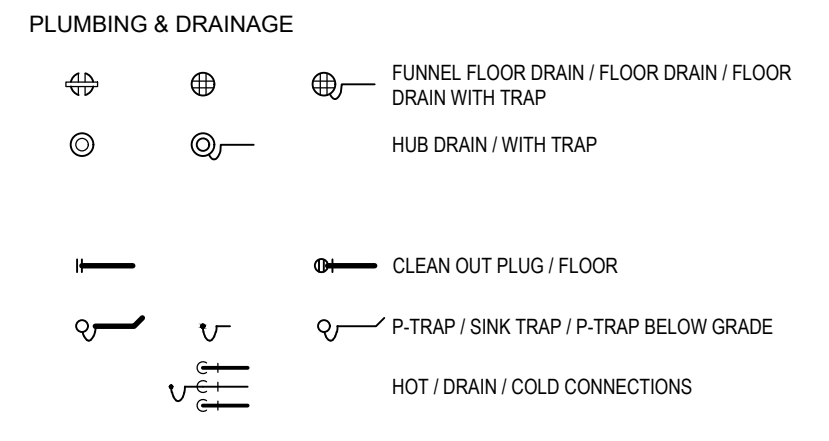
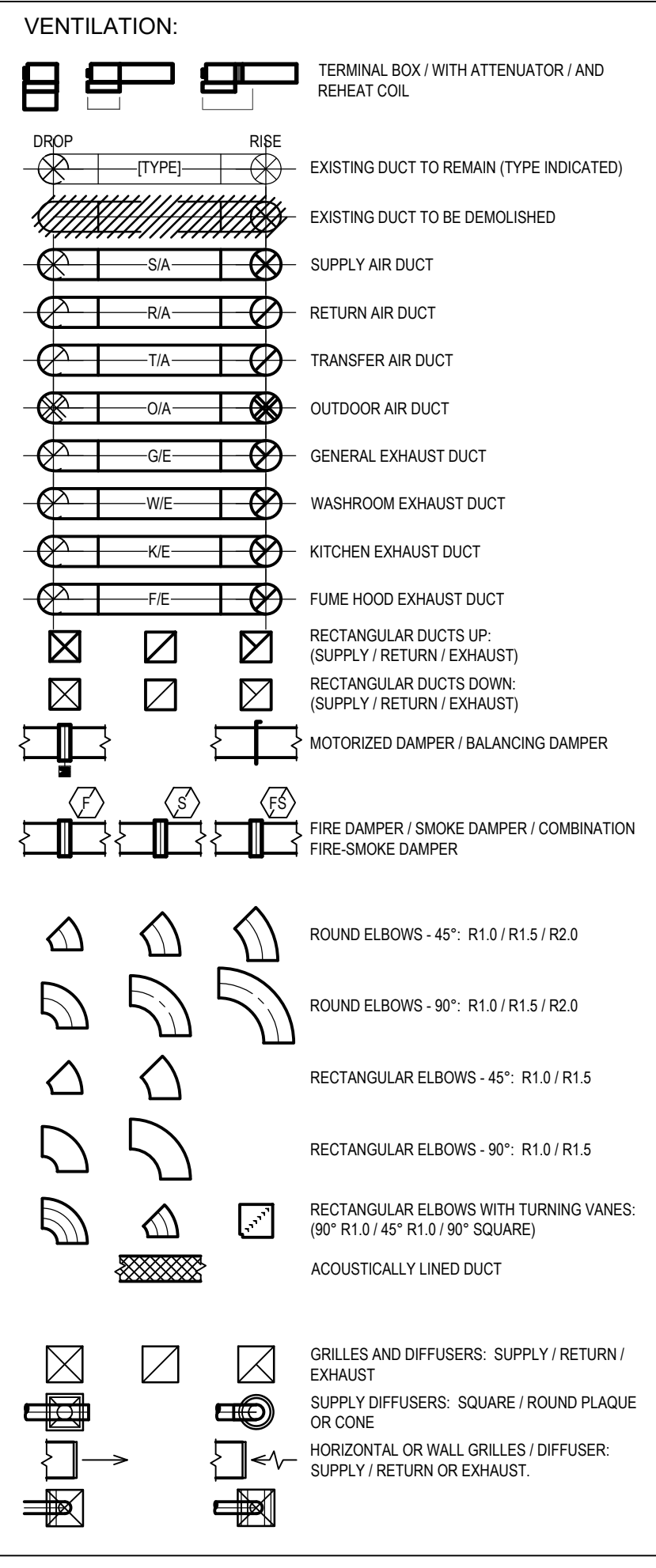
—HWS—	HEATING WATER SUPPLY
—HWR—	HEATING WATER RETURN
—DTWS—	DUAL TEMPERATURE WATER SUPPLY
—DTRW—	DUAL TEMPERATURE WATER RETURN
—CWS—	CHILLED WATER SUPPLY
—CWR—	CHILLED WATER RETURN
—RL—	REFRIGERANT LIQUID SUPPLY
—RV—	REFRIGERANT VAPOUR RETURN

SPRINKLER AND FIRE PROTECTION PIPING

—	FIRE PROTECTION ZONE
—	FIRE PROTECTION RATING
—F—	XXXX— FIRE PROTECTION PIPE
—SP—	XXXX— SPRINKLER MAIN
—	XXXX— SPRINKLER BRANCH PIPING
—DSP—	XXXX— DRY SPRINKLER PIPING
—PA—	XXXX— PRE-ACTION SPRINKLER PIPING

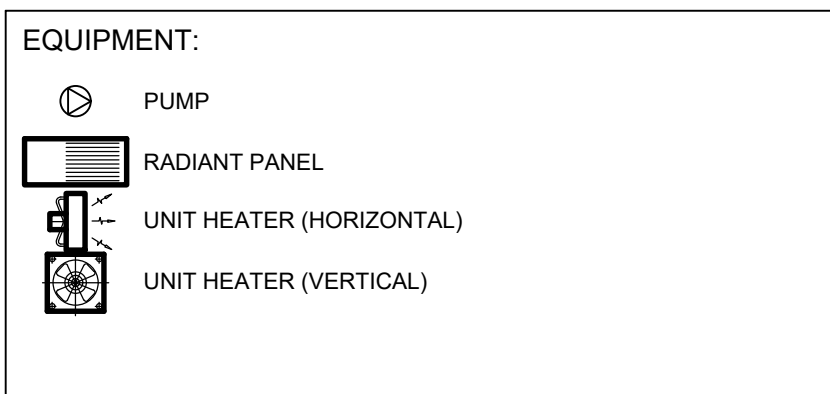
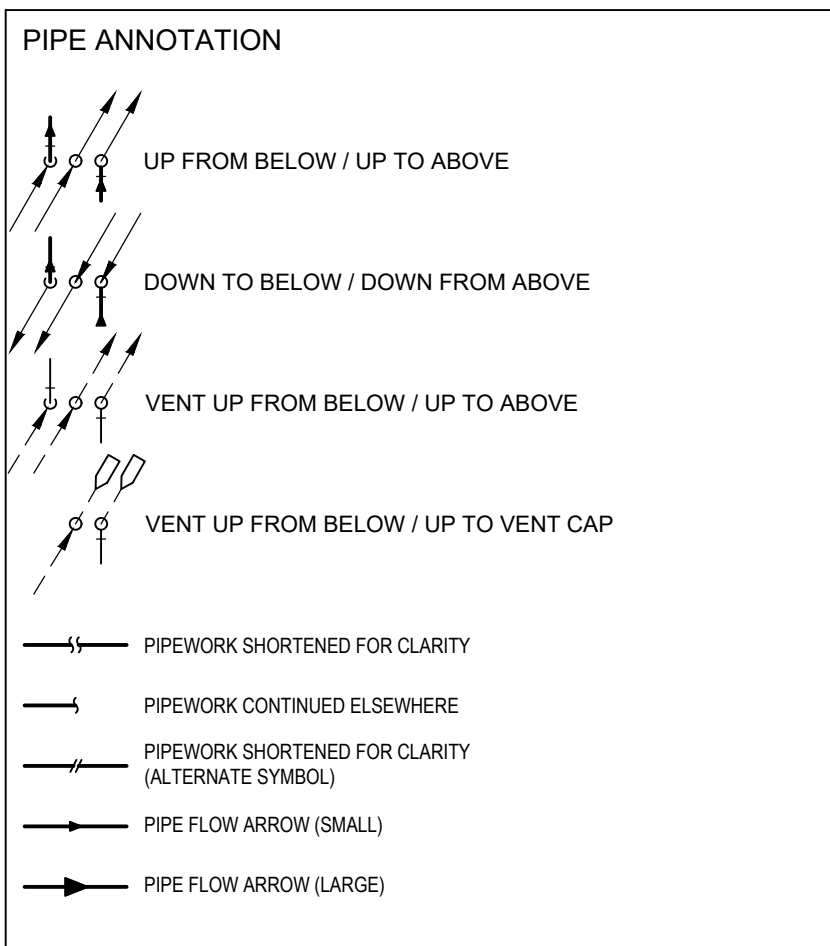
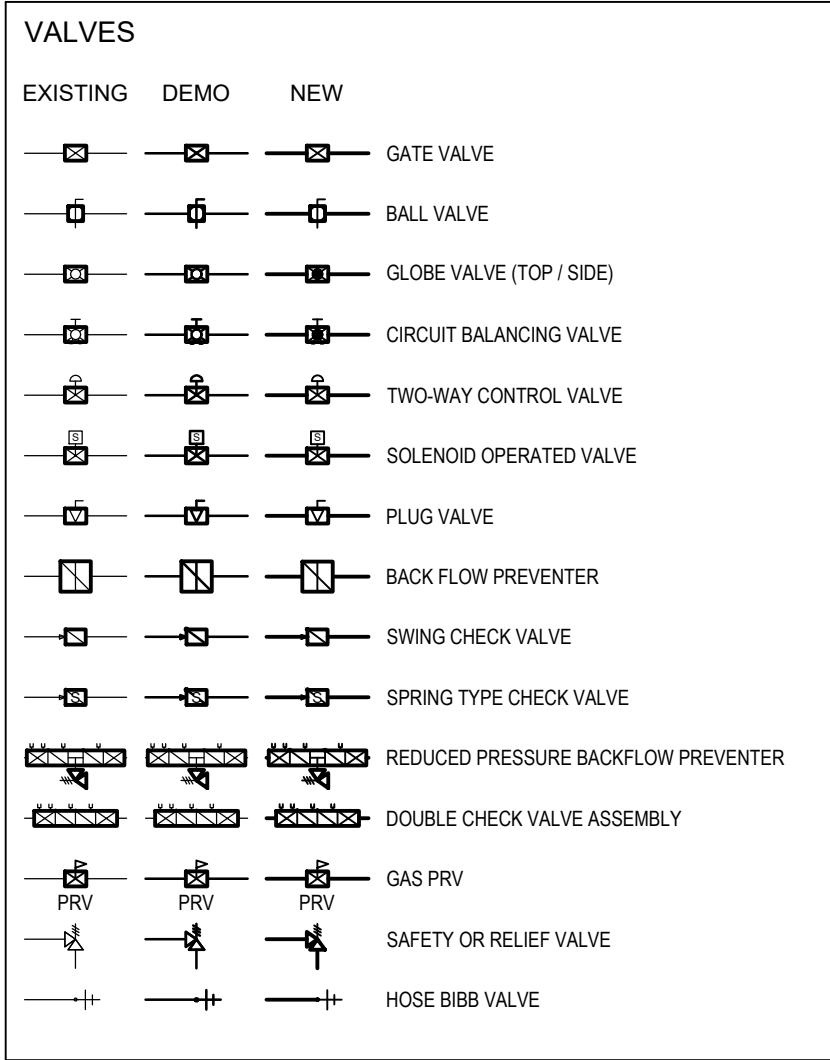
CONTROLS

—	CONTROL WIRE
Ⓢ	THERMOSTAT / SPACE TEMPERATURE SENSOR
Ⓢ	THERMOSTAT WITH GUARD
Ⓢ	HUMIDISTAT / HUMIDITY SENSOR
Ⓢ	CO2 SENSOR
Ⓢ	SWITCH
Ⓢ	PUSH BUTTON



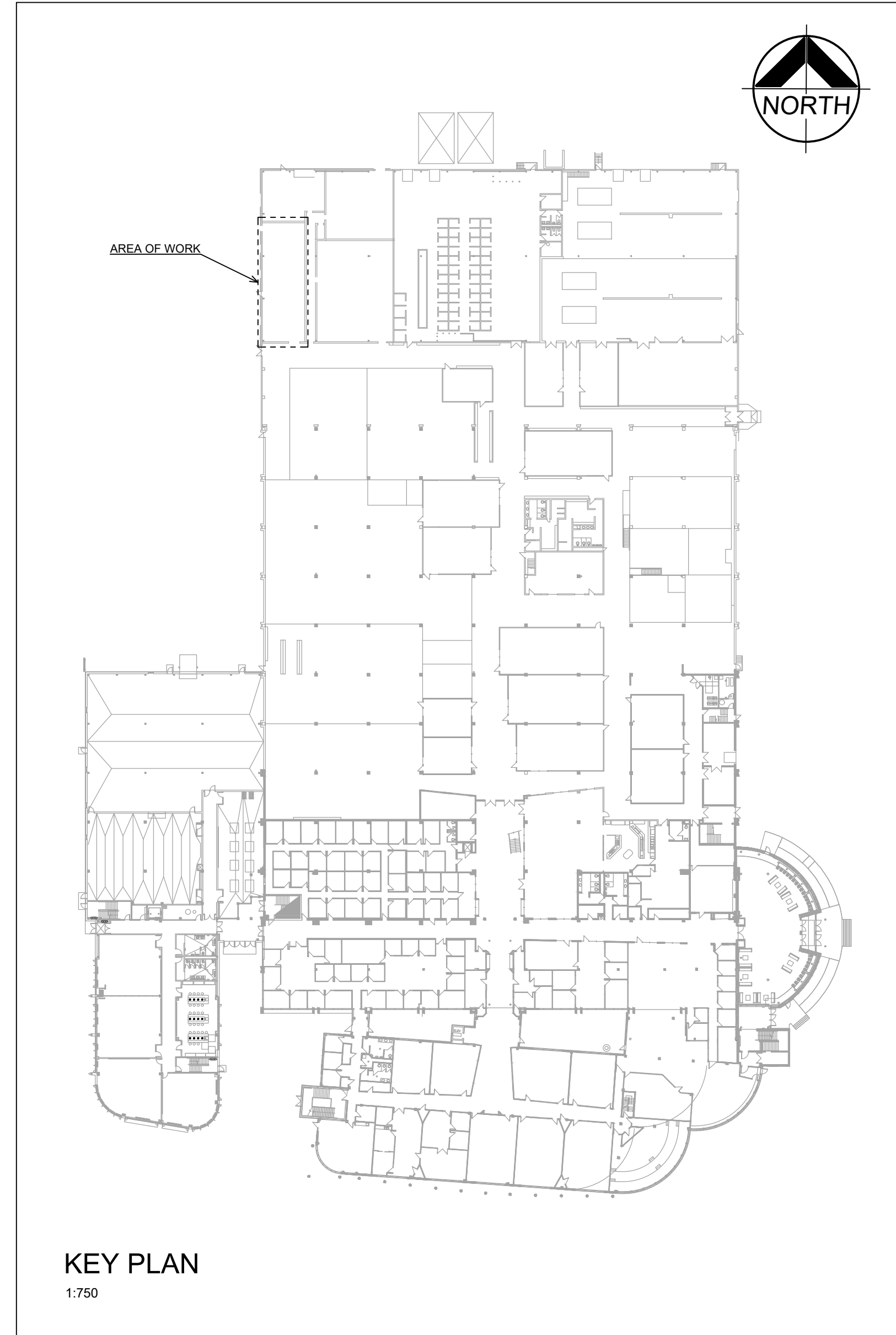
GENERAL NOTES

- NOT ALL SYMBOLS SHOWN IN LEGEND ARE NECESSARILY USED ON THIS PROJECT.
- THESE DRAWINGS AND THE ACCOMPANYING SPECIFICATIONS ARE AN INTEGRAL PART OF THE CONTRACT DOCUMENTS. PERFORM ALL WORK DETAILED IN THE CONTRACT DOCUMENTS TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL SYSTEM TO THE SATISFACTION OF THE OWNER AND CONSULTANT.
- ALL WORK SHALL BE PHASED AS REQUIRED TO MINIMIZE DOWNTIME AND DISTURBANCE TO THE REMAINDER OF THE BUILDING. CONTRACTOR TO SUBMIT PHASING AND HEARDING PLANS TO CONSULTANT FOR REVIEW AND APPROVAL PRIOR TO COMMENCING ANY WORK.
- ALLOW FOR HOT TAPPING WHEN POSSIBLE, AND FREEZING OF PIPING WHEN HOT TAPPING IS NOT POSSIBLE, TO MINIMIZE DOWNTIME TO FACILITY OPERATIONS. ALLOW FOR THE INSTALLATION OF ADDITIONAL SHUTOFF VALVES AS IF EQUIPPED TO MINIMIZE DOWNTIME TO BUILDING OPERATIONS.
- ALL EXISTING INFORMATION SHOWN ON DRAWINGS IS TRANSFERRED FROM DOCUMENTATION PROVIDED BY THE OWNER AND/OR SITE SURVEY. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE ACCURACY OF THESE DOCUMENTS WITH EXISTING AS-BUILT CONDITIONS. ALL QUANTITIES, AND DETERMINATION OF EXISTING CONDITIONS MUST BE BASED ON SITE VISITS BY THE CONTRACTOR PRIOR TO TENDER CLOSING. NO CLAIMS ASSOCIATED WITH DISCREPANCIES BETWEEN SITE CONDITIONS AND CONTRACT DOCUMENTS WILL BE ENTERTAINED AFTER CONTRACT AWARD.
- MAINTAIN THE INTEGRITY OF ALL EXISTING FIRE SEPARATIONS AND EXITS AT ALL TIMES THROUGHOUT CONSTRUCTION.
- PROVIDE ULCL LISTED FIRE STOP SYSTEMS AT ALL NEW AND EXISTING OPENINGS AND/OR GAPS AROUND DUCTS, PIPES OR ELECTRICAL SERVICES PENETRATING FIRE SEPARATIONS TO MAINTAIN THE INTEGRITY OF THE FIRE SEPARATION.
- PROVIDE BALANCING DAMPERS AT ALL BRANCH DUCTS AND SMOKE, FIRE OR COMBINATION SMOKE/FIRE DAMPERS IN ALL DUCTWORK THAT PENETRATE FIRE SEPARATIONS TO MAINTAIN THE INTEGRITY OF THE FIRE SEPARATION.
- ALL EQUIPMENT AND MATERIALS LOCATED IN ANY CONCEALED SPACE USED AS A RETURN AIR PLENUM SHALL
- CONFORM TO THE REQUIREMENTS OF THE ONTARIO BUILDING CODE.
- ALL ELECTRICAL WORK SHALL CONFIRM TO APPLICABLE STANDARD & CODES GIVEN IN SPECIFICATION AND DRAWINGS.
- ALL WIRING SHALL BE COPPER RW90 UNLESS OTHERWISE NOTED. CURRENT RATING OF THE WIRE SHALL BE NOT LESS THAN AMPERE RATING OF THE BREAKER/DISCONNECT.
- TRADE CONTRACTOR TO VERIFY ALL SITE CONDITIONS, AND INFORMATION ON SITE BEFORE INSTALLATION/DEMOLITION BEGINS. THE INFORMATION SHOWN ON DRAWINGS IS BASED ON INFORMATION GATHERED FROM EXISTING ARCHITECTURAL, MECHANICAL, ELECTRICAL DRAWINGS AND FROM SITE SURVEYS AND MAY NOT BE FULLY REPRESENTATIVE OF WHAT IS ON SITE. CONTRACTOR TO VERIFY ALL EXISTING LOCATIONS AND CONDITIONS.
- TRADE CONTRACTOR TO COORDINATE ROUTING OF ALL NEW PIPING WITH EXISTING PIPE HANGERS, CONDUIT, CABLE TRAYS, ETC. RELOCATE EXISTING EQUIPMENT WHERE REQUIRED TO ALLOW FOR NEW PIPE ROUTING, BUT AIM TO MINIMIZE DISTURBANCE TO EXISTING EQUIPMENT AND SYSTEMS WHERE POSSIBLE.
- MINIMUM CONDUIT SIZE SHALL BE 21MM AND ALL THE CONDUIT SHALL BE EMT UNLESS NOTED OTHERWISE.

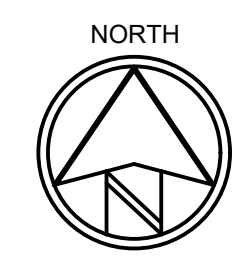


MECHANICAL DRAWING LIST

SHEET No.	DETAIL	SCALE
M0-00	MECH. DRAWING LIST, LEGEND & GENERAL NOTES	N.T.S.
M0-01	DRAWING SPECS- MECHANICAL	N.T.S.
M1-01	HVAC - DEMOLITION AND NEW WORK	1:100
M1-02	WELD SHOP EXHAUST, COMPRESSED AIR & WELDING GASES	1:100
M2-01	ROOF PLAN & MECHANICAL DETAILS	AS NOTED
M3-01	CONTROLS- SHEET NO. 1	N.T.S.
M3-02	CONTROLS- SHEET NO.2	N.T.S.
ME-01	EQUIPMENT SCHEDULES	N.T.S.



NO.	ISSUES/ REVISIONS	DATE	BY
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4	ISSUED FOR REVIEW	2026-04-17	
5	ISSUED FOR PERMIT	2026-05-05	
6	ISSUED FOR TENDER	2026-05-15	



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23202

PROJECT:
**DURHAM COLLEGE
WELDING SHOP
EXPANSION**

1610 CHAMPLAIN AVENUE
WHITBY, ONTARIO, L1N 6A7
DURHAM COLLEGE

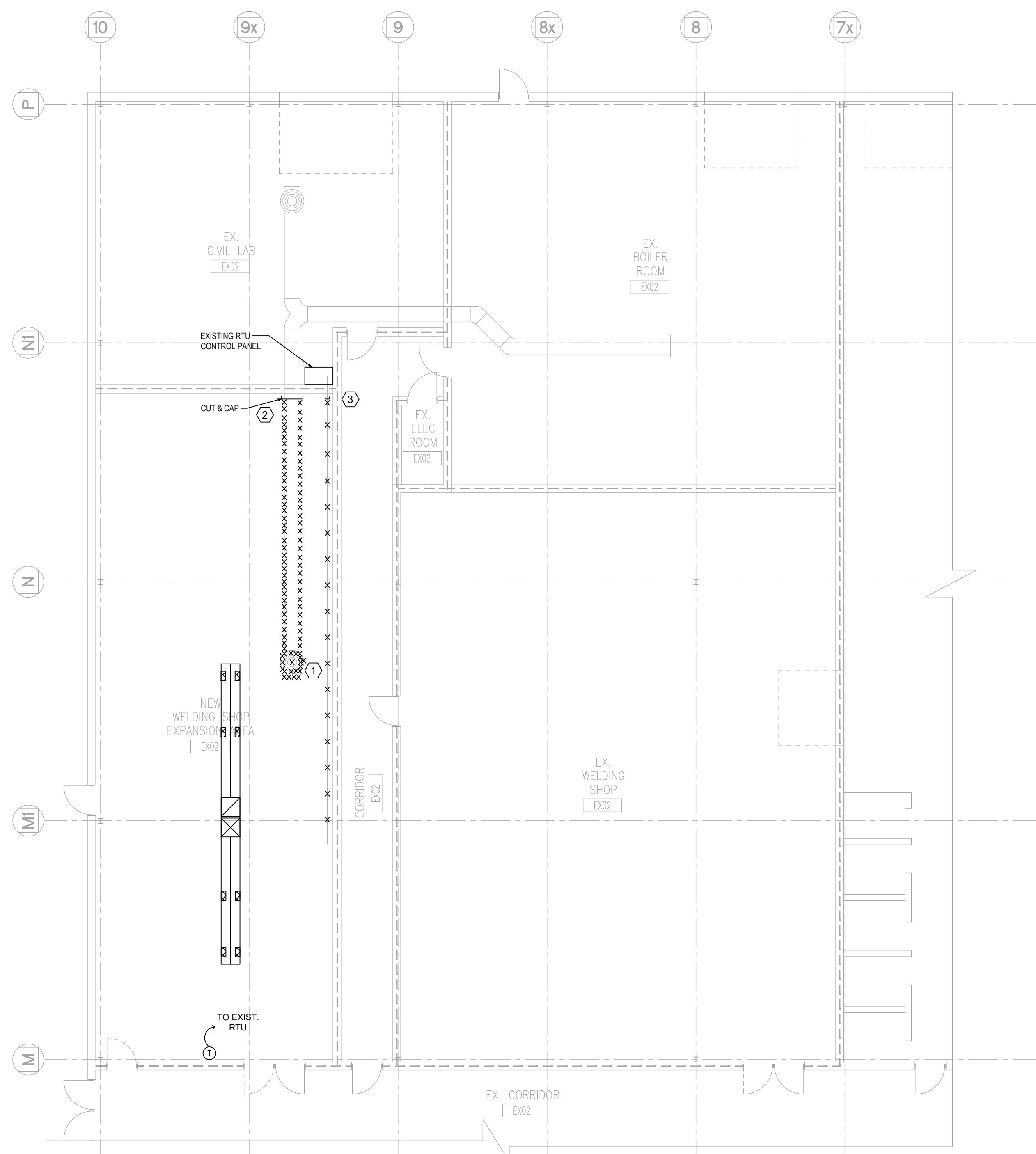
DRAWING:
**MECH. DRAWING LISTS,
LAYOUT AND GENERAL
NOTES**

DESIGN BY: TT SEAL:
DRAWN BY: ML
CHECKED BY: MH
DATE: APR, 2026
SCALE: N.T.S.

PROJECT NO: 24333-08 DRAWING NO: M0-00

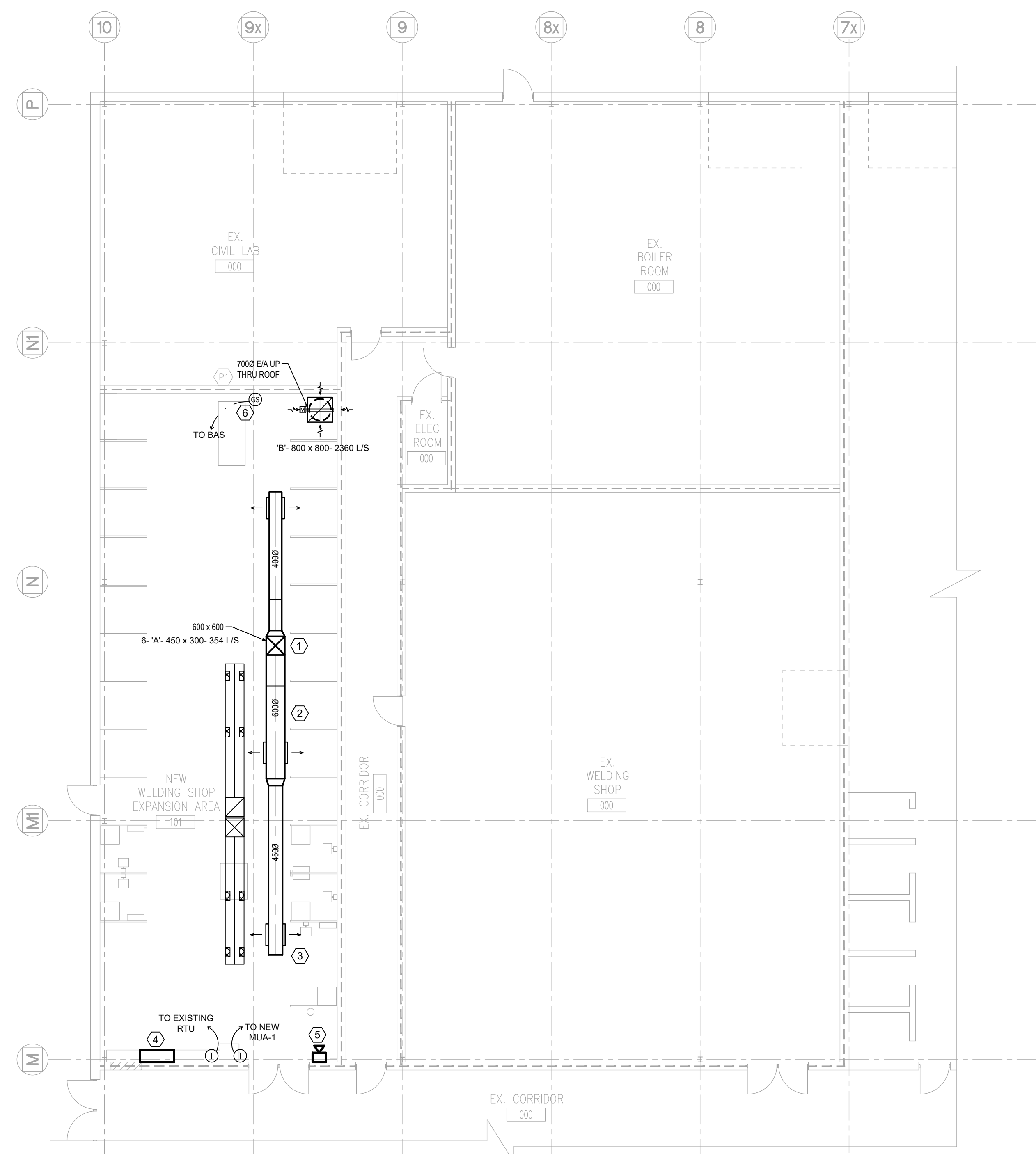
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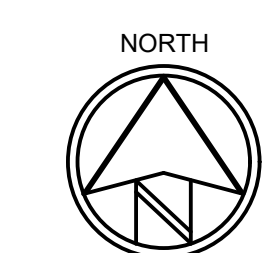
1 HVAC DEMOLITION
M1-01 SCALE: 1:100

KEYNOTE:	DESCRIPTION:
①	REMOVE ABANDONED SUPPLY AIR DUCTWORK ALONG WITH SUPPLY AIR DIFFUSER.
②	CUT & CAP ABANDONED S/A DUCT AT WALL.
③	CUT & CAP EXISTING COMPRESSED AIR LINE AT WALL.



2 HVAC NEW WORK
M1-01 SCALE: 1:100

KEYNOTE:	DESCRIPTION:
①	600 x 600 S/A FROM NEW MUA UNIT ON ROOF ABOVE.
②	INSTALL DUCTWORK UNDER TRUSSES.
③	INSTALL S/A GRILLS AT 45° DOWNWARD FROM THE HORIZONTAL CENTERLINE OF THE MAIN DUCT. (TYP. FOR ALL)
④	NEW BAS PANEL. IT DROP TO THIS LOCATION BY DURHAM COLLEGE. BACnet IP TO EXISTING BAS.
⑤	NEW AUDIBLE AND VISUAL HORN WALL MOUNTED.
⑥	NEW GAS MONITORING DEVICE TO BE MOUNTED ON WALL 1.5m A.F.F.



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PROJECT:
**DURHAM COLLEGE
 WELDING SHOP
 EXPANSION**

1610 CHAMPLAIN AVENUE
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 DURHAM COLLEGE

DRAWING:

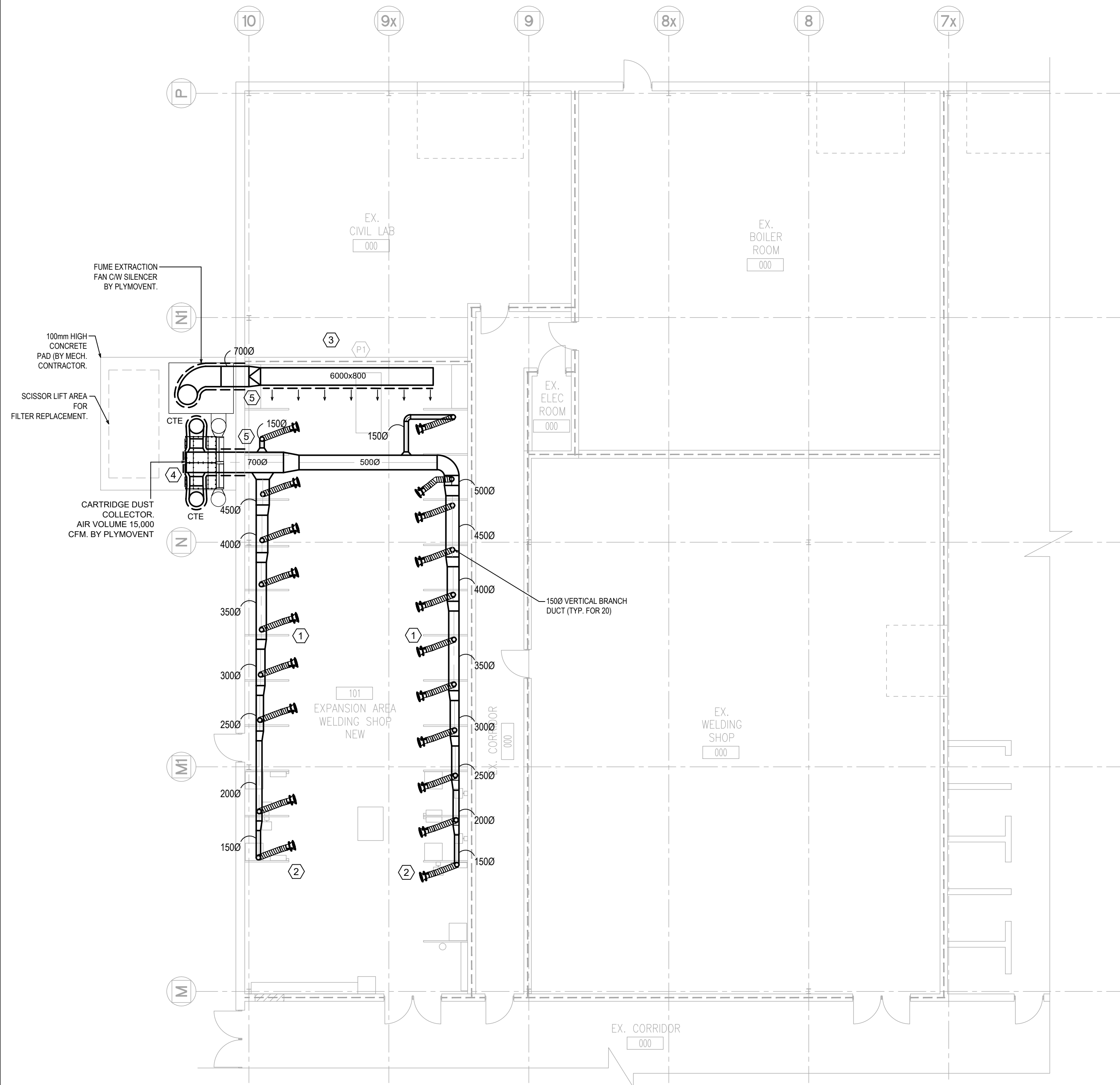
**HVAC - DEMOLITION AND
 NEW WORK**

DESIGN BY: TT SEAL:
 DRAWN BY: ML
 CHECKED BY: MH
 DATE: APR, 2026
 SCALE: 1:100

PROJECT NO: **24333-08** DRAWING NO: M1-01

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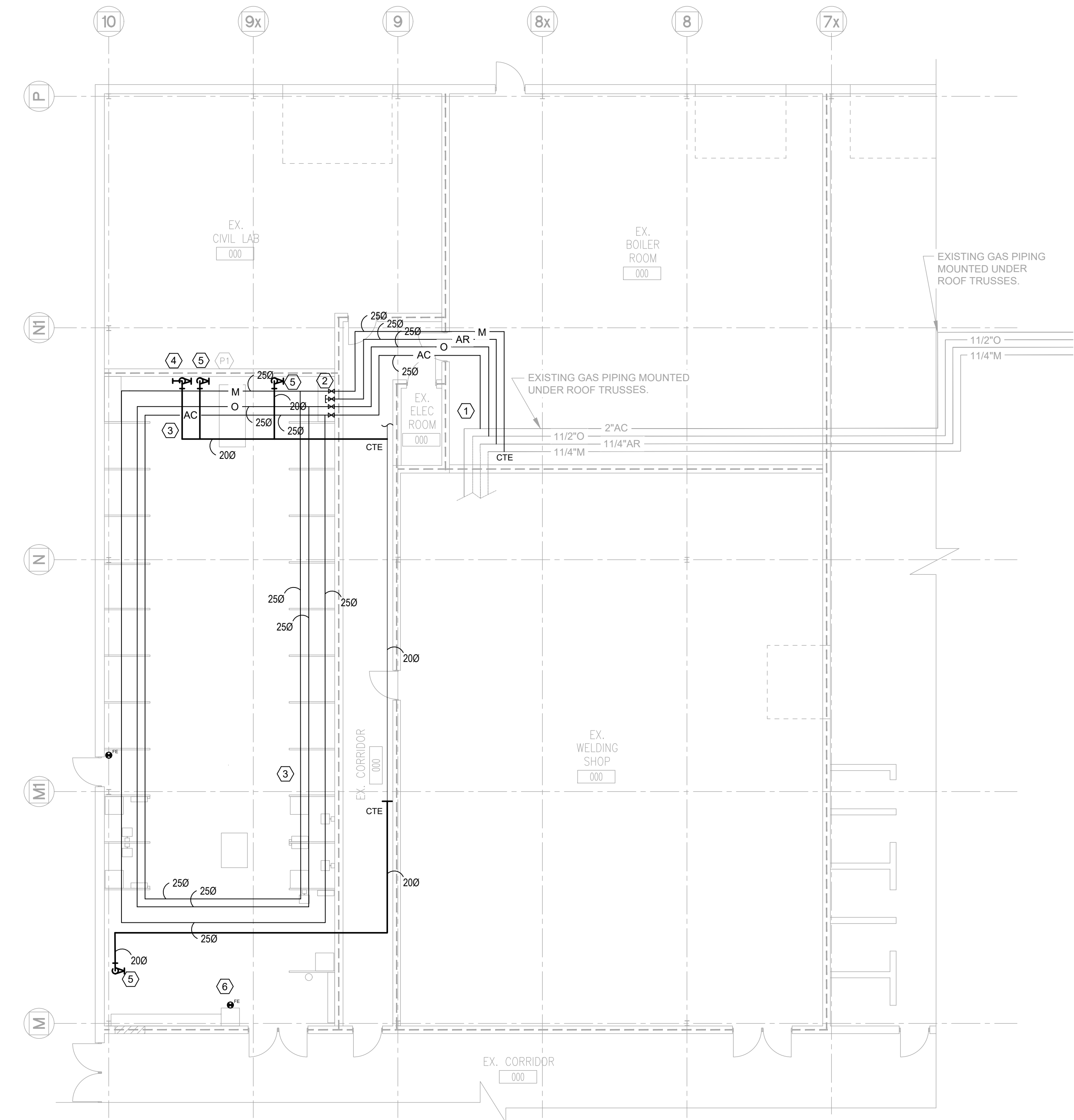
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1 WELD SHOP EXHAUST
SCALE: 1:100

KEYNOTE:	DESCRIPTION:
①	INSTALL FUME EXHAUST MAINS UNDER TRUSSES. ALL DUCTWORK TO BE FABRICATED OF 304 STAINLESS STEEL.
②	CONNECT 1500 FUME EXH. BRANCH DUCTWORK TO EXTRACTION ARMS. REFER TO DRAWING M2-01 FOR DETAILS.
③	6000 x 800 x 800mm DEEP PLENUM WITH FULL FRONT AREA PERFORATED (MINIMUM PERFORATION DENSITY 50%).
④	EXISTING DUST COLLECTOR RELOCATED FROM WELD SHOP #3. BY PLYMOVENT.
⑤	EXHAUST AND RETURN DUCTWORK THROUGH WALL AND CONNECTED TO EXISTING FUME EXTRACTION SYSTEM. ALL DUCTWORK INSTALLED OUTDOOR TO BE THERMALLY INSULATED.

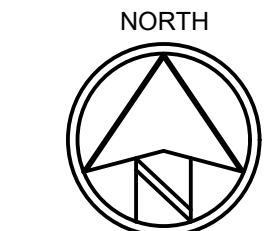
DELINEATION OF WORK		
ITEM	SUPPLY	INSTALL
CARTRIDGE DUST COLLECTOR	DURHAM COLLEGE	DURHAM COLLEGE
FUME EXTRACTION FAN CW SILENCER	DURHAM COLLEGE	DURHAM COLLEGE
DUCTWORK & INSULATION	MECHANICAL CONTRACTOR	MECHANICAL CONTRACTOR
FUME EXTRACTION ARM	DURHAM COLLEGE	MECHANICAL CONTRACTOR



2 COMPRESSED AIR & WELDING GASES
SCALE: 1:100

KEYNOTE:	DESCRIPTION:
①	CONNECT NEW 250 WELDING GAS PIPING (AC, O, AR/M) TO EXISTING. VERIFY EXACT PIPE CONNECTIONS AND COORDINATE NEW PIPE ROUTING WITH EXISTING SERVICES IN THIS AREA.
②	TERMINATE NEW ARGON 250 PIPE WITH ISOLATION VALVE AND CAP INSIDE THE WELD SHOP #4. EXISTING FILTRATION SYSTEM TO BE REVIEWED PRIOR TO UTILIZING THE NEW LINE IN THE FUTURE.
③	INSTALL GAS PIPING AT HIGH LEVEL UNDER ROOF TRUSSES. PROVIDE A SPARE SPACE IN PIPE RACK FOR FUTURE INSTALLATION OF ARGON PIPING.
④	200 COMPRESSED AIR FOR FUME/DUST EXTRACTION SYSTEM TERMINATED WITH ISOLATION VALVE. (PRESSURE REGULATOR AND PIPING FROM THIS POINT TO THE UNIT OUTDOOR BY DURHAM COLLEGE).
⑤	TERMINATE 200 COMPRESSED AIR PIPE WITH ISOLATION VALVE AND QUICK-CONNECT COUPLER. 1.0 m A.F.F.

KEYNOTE:	DESCRIPTION:
⑥	EXISTING FIRE EXTINGUISHER TO BE RELOCATED AND MOUNTED ON NEW WALL.



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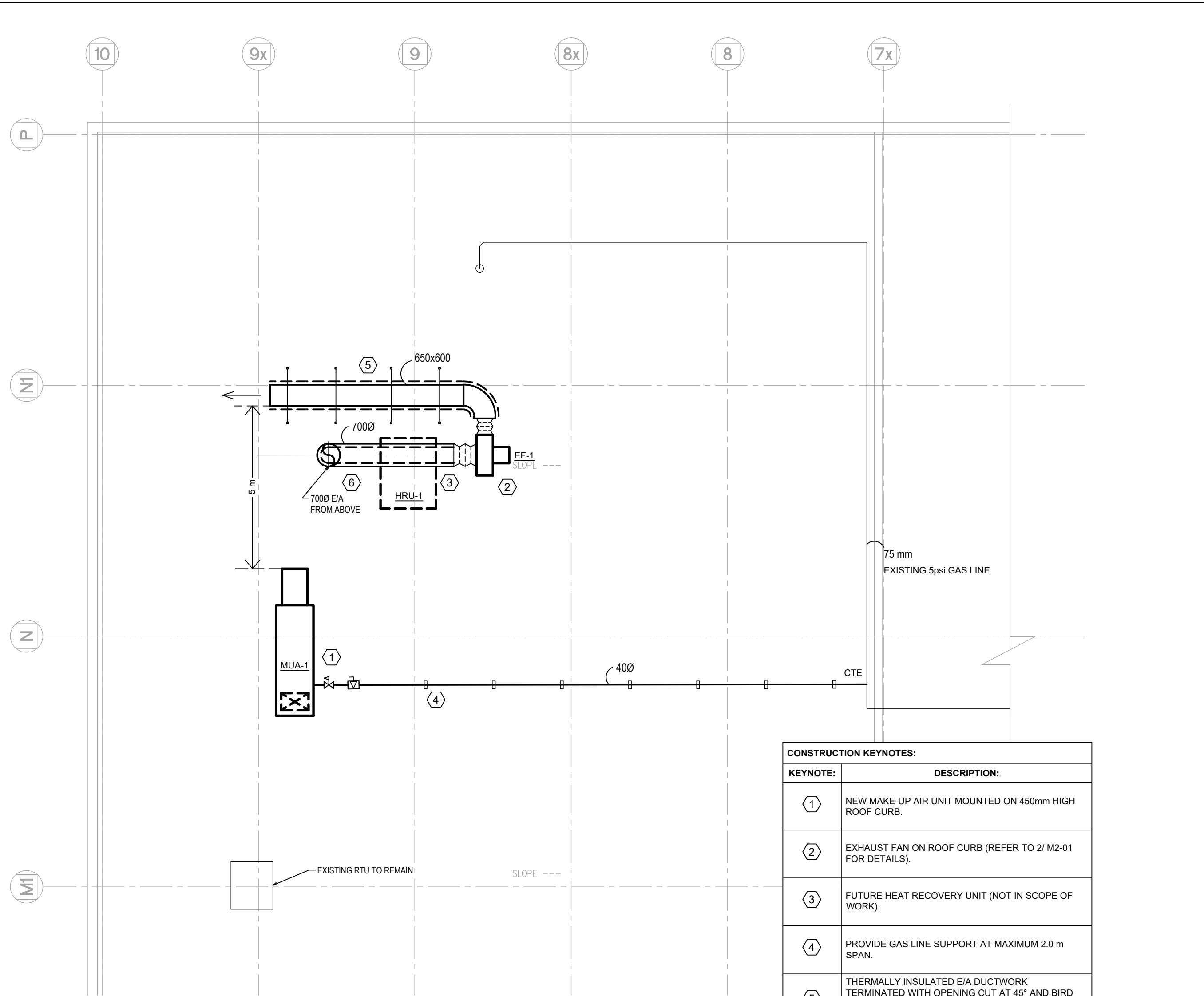
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PROJECT:
**DURHAM COLLEGE
 WELDING SHOP
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1610 CHAMPLAIN AVENUE
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 DURHAM COLLEGE

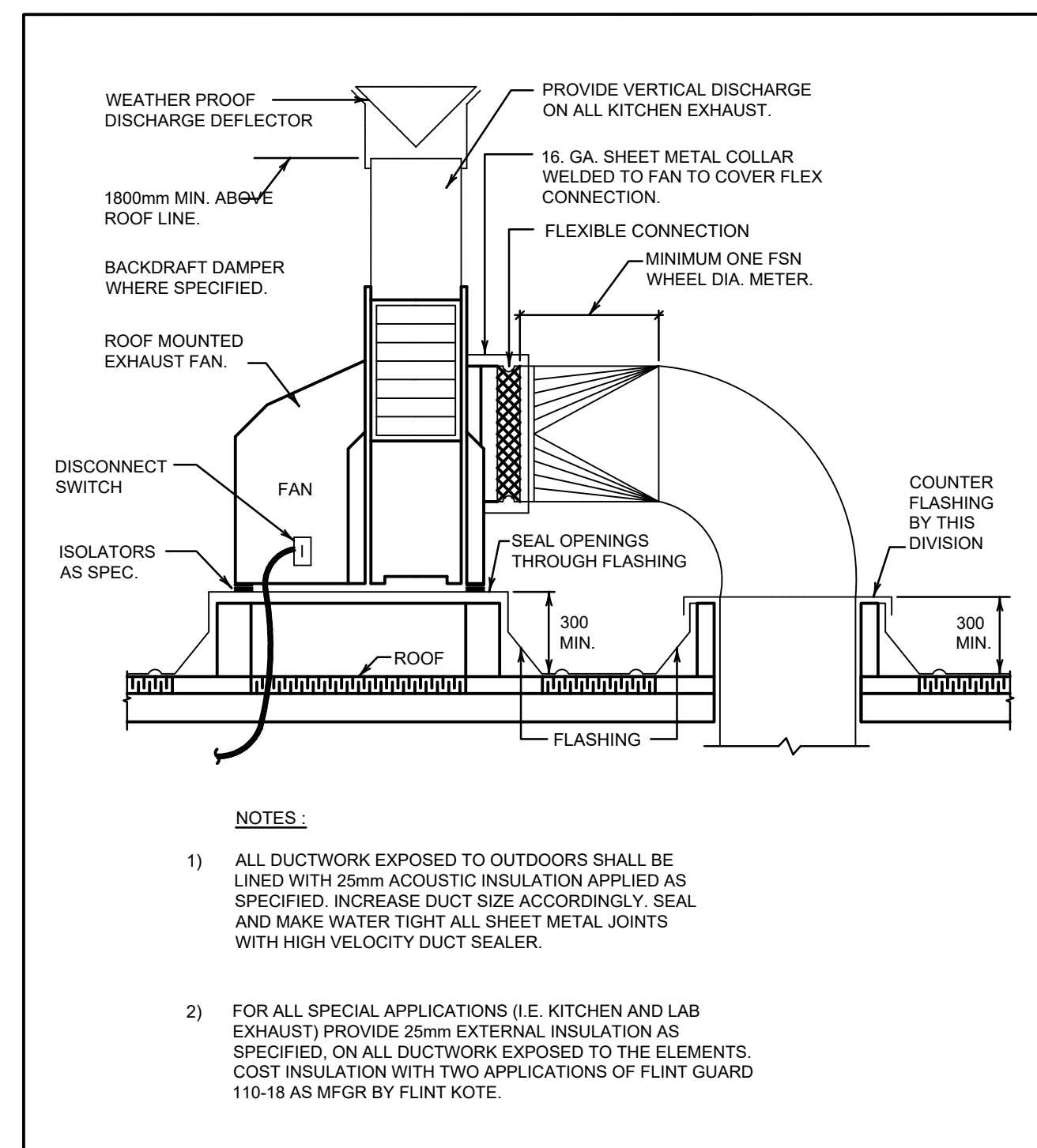
DRAWING:
**WELD SHOP EXHAUST,
 COMPRESSED AIR &
 WELDING GASES**

DESIGN BY: TT SEAL:
 DRAWN BY: ML
 CHECKED BY: MH
 DATE: APR, 2026
 SCALE: 1:100
 PROJECT NO: **24333-08** DRAWING NO: M1-02

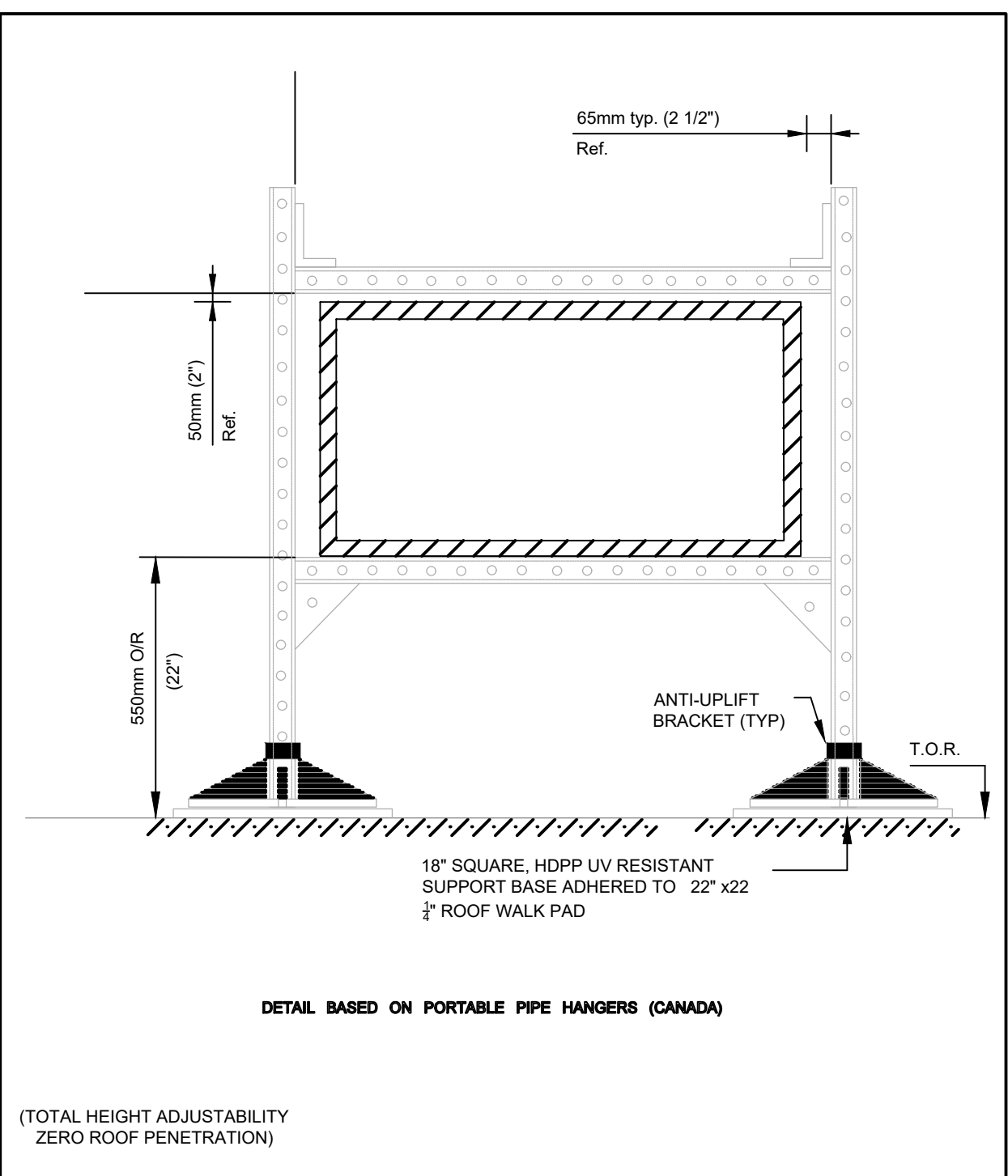


1 ROOF PLAN
SCALE: 1:100

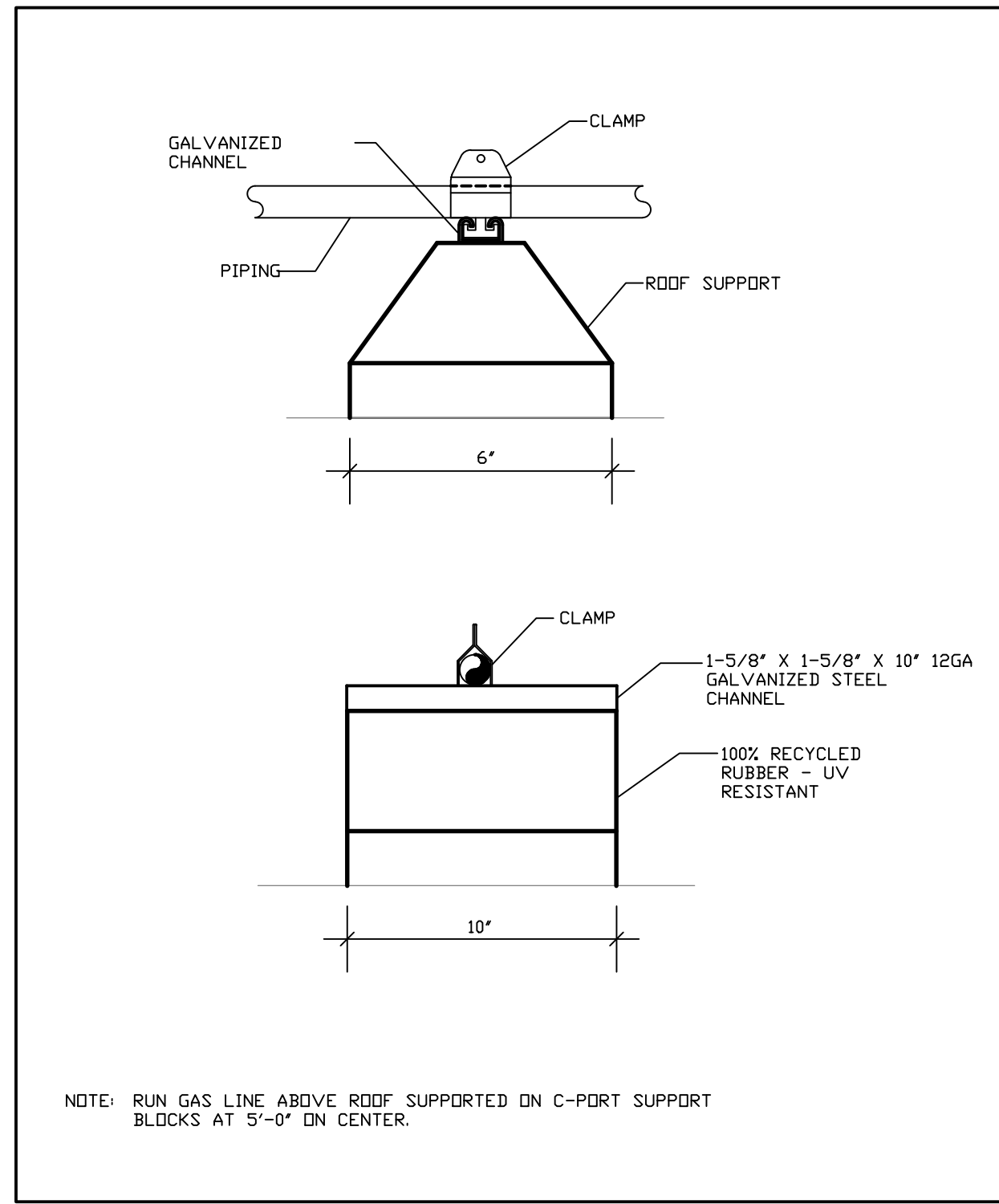
KEYNOTE:	DESCRIPTION:
①	NEW MAKE-UP AIR UNIT MOUNTED ON 450mm HIGH ROOF CURB.
②	EXHAUST FAN ON ROOF CURB (REFER TO 2/ M2-01 FOR DETAILS).
③	FUTURE HEAT RECOVERY UNIT (NOT IN SCOPE OF WORK).
④	PROVIDE GAS LINE SUPPORT AT MAXIMUM 2.0 m SPAN.
⑤	THERMALLY INSULATED E/A DUCTWORK TERMINATED WITH OPENING CUT AT 45° AND BIRD SCREEN (REFER TO DETAIL 3/ M2-01 FOR ROOF DUCT SUPPORT).
⑥	ACOUSTICALLY LINED EXHAUST FAN INTAKE DUCTWORK IN THE ENTIRE SECTION INSTALLED ABOVE THE ROOF.



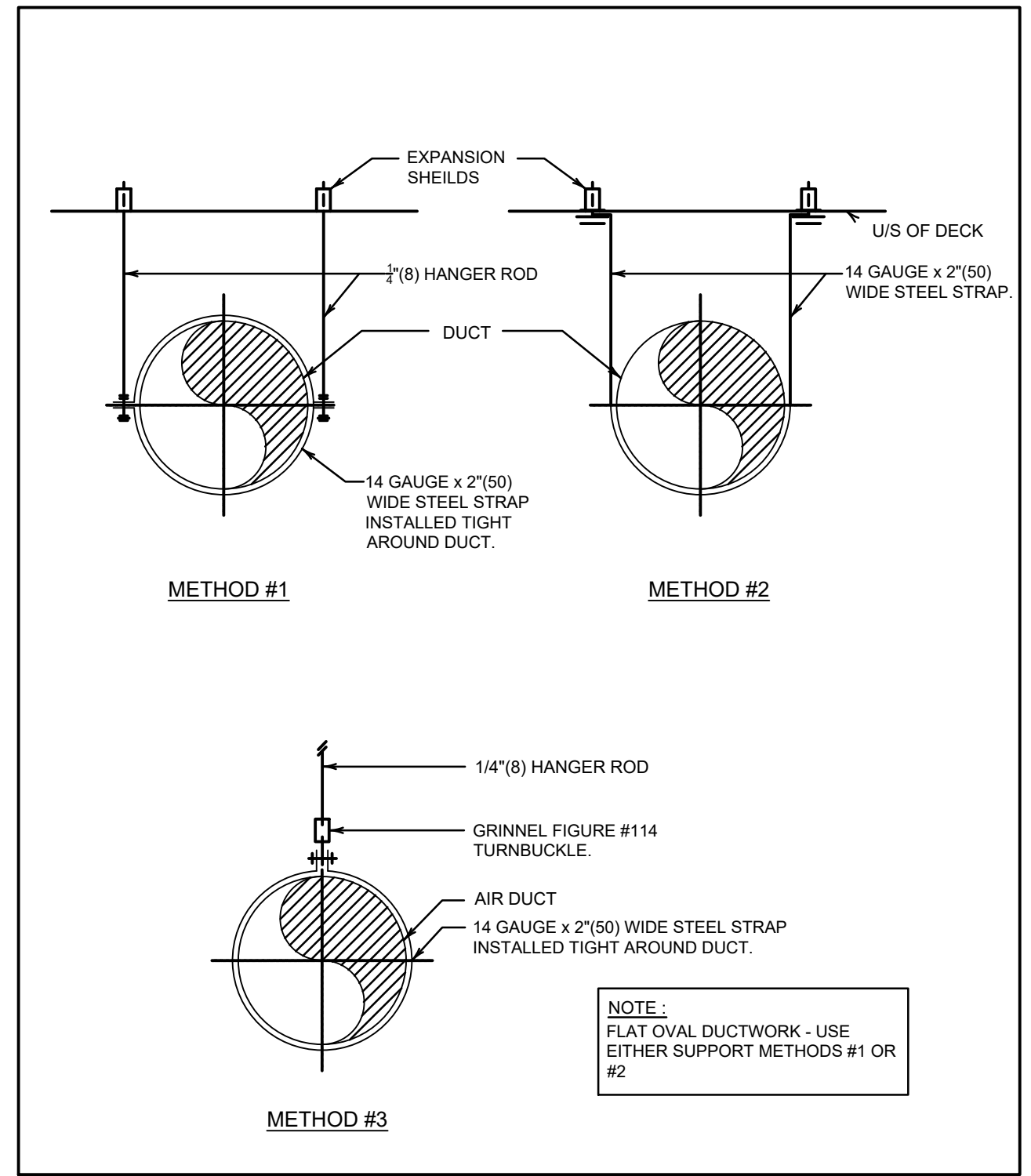
2 ROOF MOUNTED UTILITY TYPE EXHAUST FAN
SCALE: N.T.S.



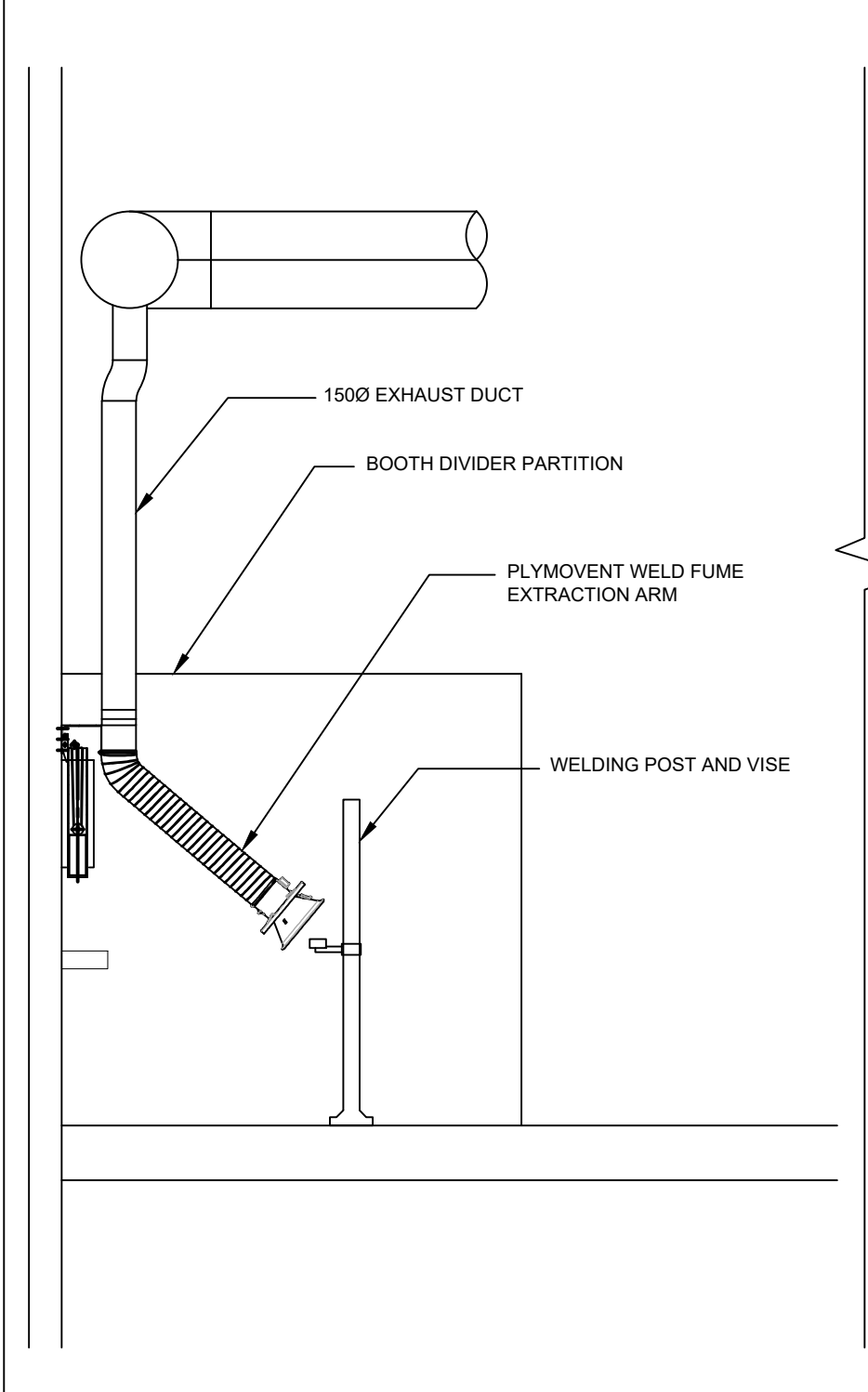
3 ROOF DUCT SUPPORT
SCALE: N.T.S.



4 GAS LINE SUPPORT DETAIL
SCALE: N.T.S.

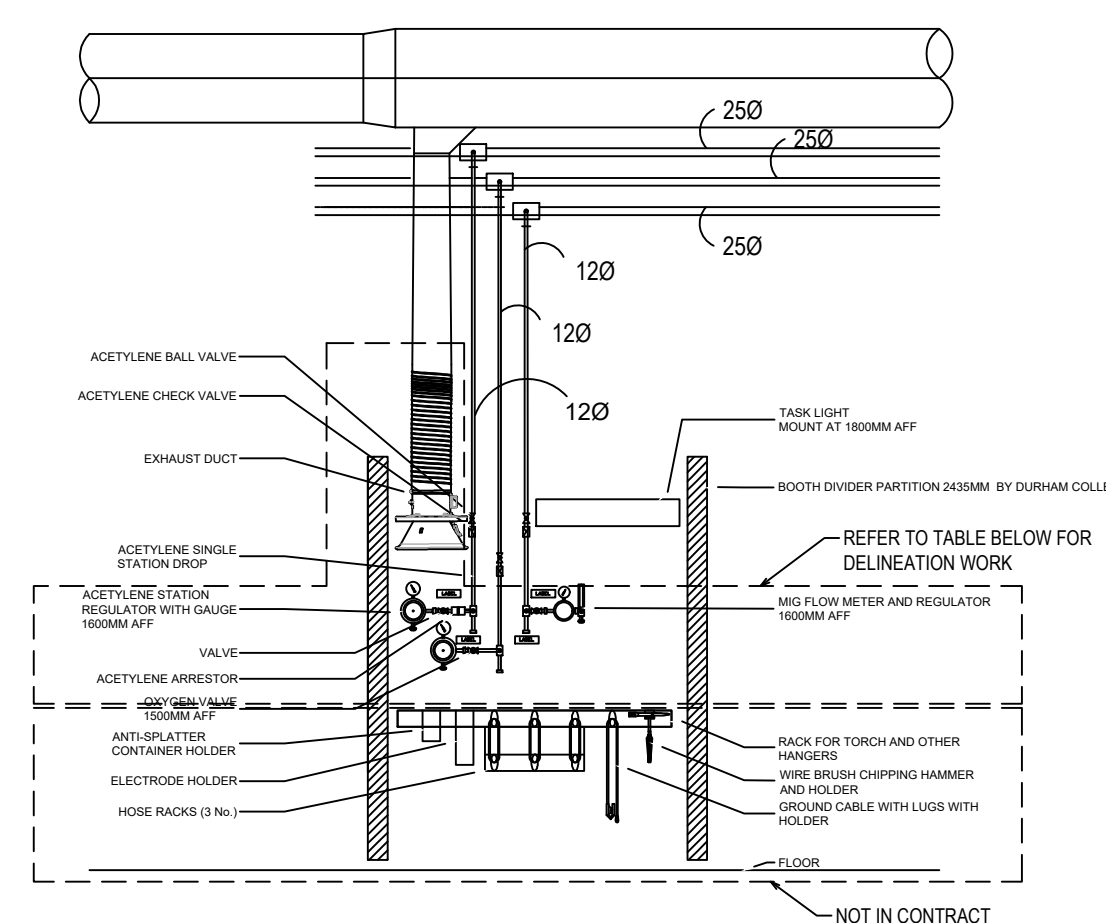


5 EXPOSED DUCTWORK SUPPORT METHODS
SCALE: N.T.S.

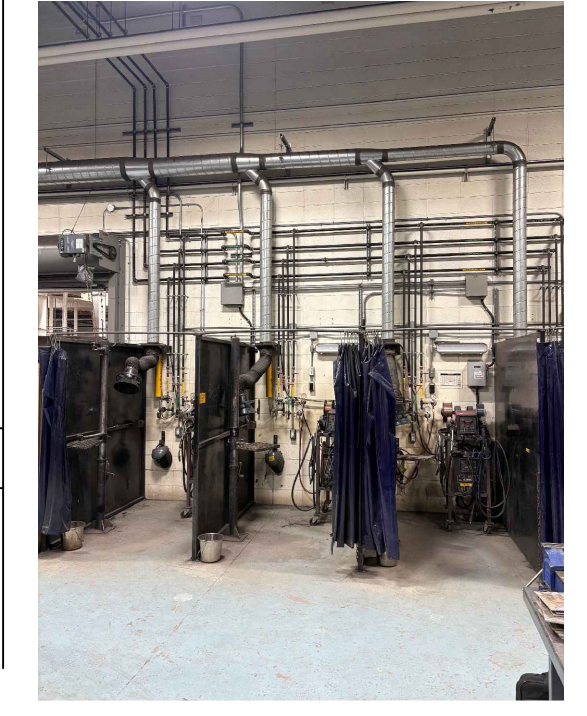
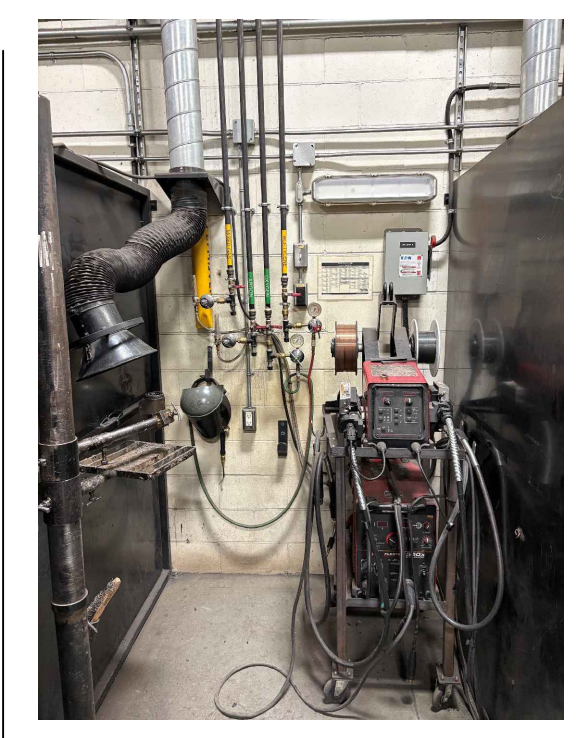


6 TYPICAL WELDING BOOTH
SCALE: N.T.S.

GAS PIPE TERMINATION HEIGHTS A.F.F. IN WELD BOOTH	
MIG	1.5 m
ACETYLENE	1.5 m
OXYGEN	1.3 m

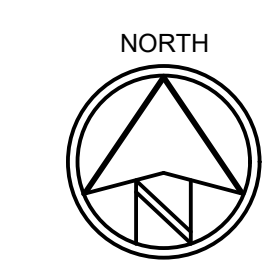


DELINEATION WORK		
ITEM	SUPPLY	INSTALL
WELD FUME EXTRACTION ARM	DURHAM COLLEGE	DURHAM COLLEGE
FLOW METER AND PRESSURE REGULATOR	DURHAM COLLEGE	MECH. CONTRACTOR
GAS PIPING- MAIN AND DROPS	MECH. CONTRACTOR	MECH. CONTRACTOR
WELD BOOTH PIPE FITTINGS	MECH. CONTRACTOR	MECH. CONTRACTOR



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PROJECT:
DURHAM COLLEGE
WELDING SHOP
EXPANSION

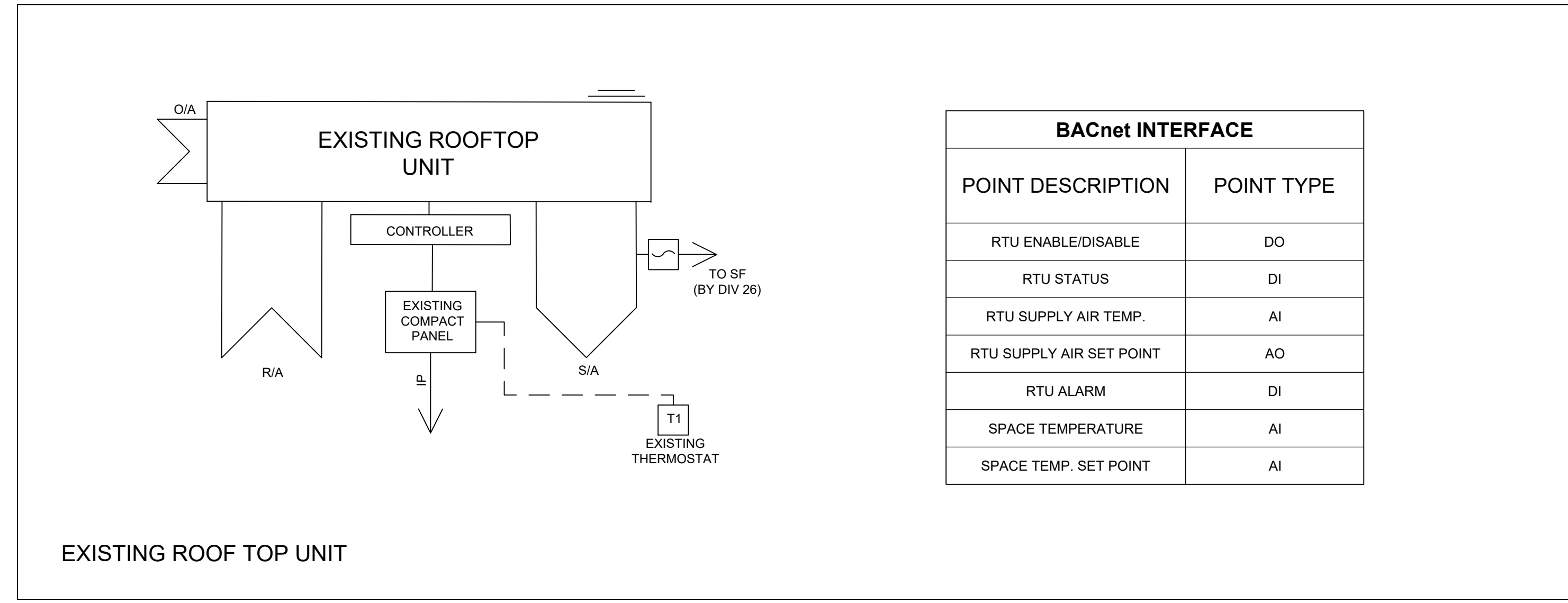
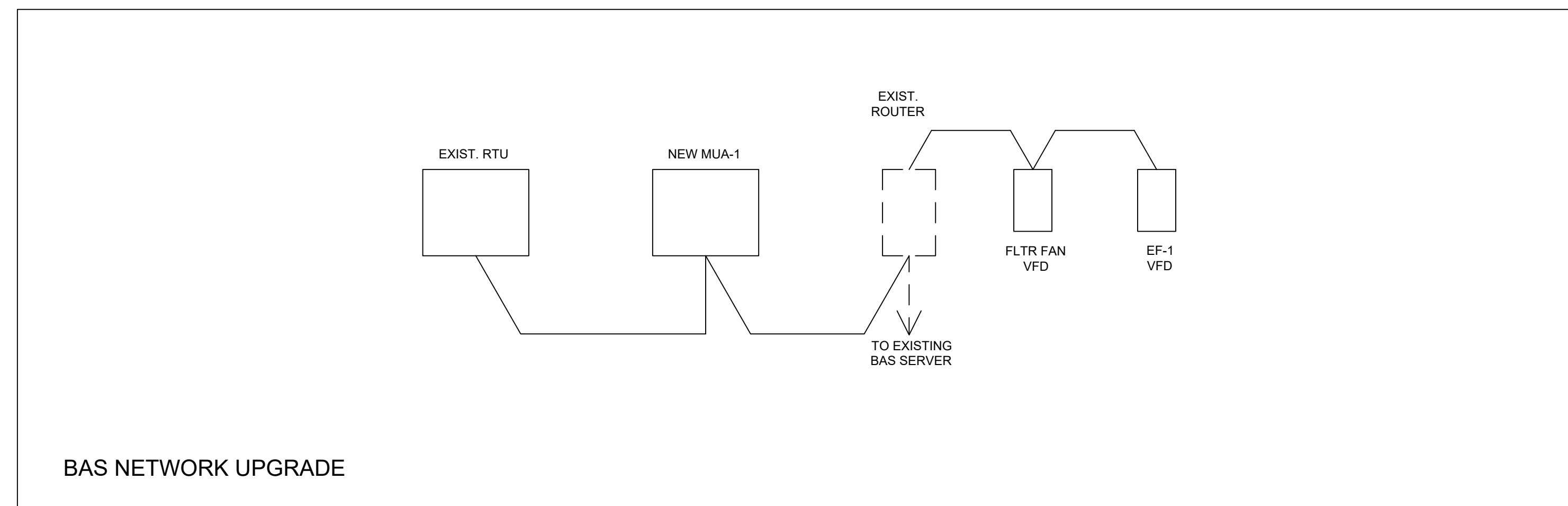
1610 CHAMPLAIN AVENUE
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 DURHAM COLLEGE

DRAWING:
 ROOF PLAN AND
 MECHANICAL DETAILS

DESIGN BY: TT	SEAL:
DRAWN BY: ML	
CHECKED BY: MH	
DATE: APR, 2026	
SCALE: AS NOTED	
PROJECT NO: 24333-08	DRAWING NO: M2-01

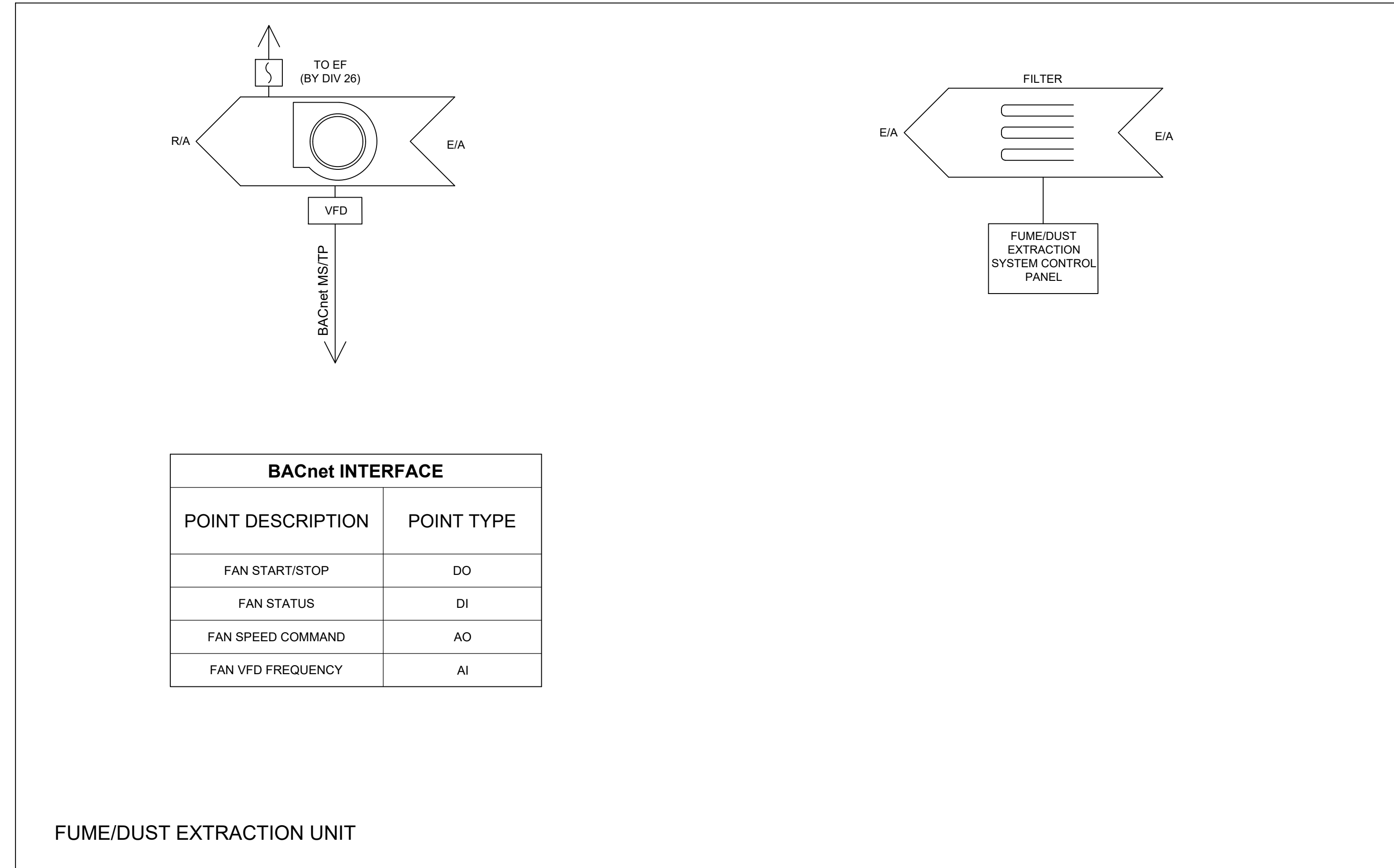
SEQUENCE OF OPERATION FOR EXISTING ROOF TOP UNIT

- .1 GENERAL DESCRIPTION OF THE SYSTEM
 - .1 THE SYSTEM COMPRISES A PACKAGED DX COOLING/GAS HEATING ROOF TOP UNIT. THE UNIT IS MOUNTED ON WELD SHOP #4 ROOF.
- .2 SCHEDULE
 - .1 THE UNIT WILL OPERATE ACCORDING TO TOD SCHEDULE.
- .3 START/STOP
 - .1 SYSTEM START
 - THE SYSTEM WILL BE INTER LOCKED WITH FUME/DUST EXTRACTION AND WELD SHOP #4 GENERAL VENTILATION SYSTEMS THROUGH THE BAS. IT WILL BE DISABLED BY BAS ONCE FUME/DUST EXTRACTION SYSTEM IS ACTIVATED.
 - THE UNIT WILL OPERATE UNDER ITS CONTROLLER TO MAINTAIN SPACE TEMPERATURE SET POINT.
 - .2 SYSTEM STOP
 - THE UNIT WILL COMMAND TO STOP ON ONCE EITHER OF FUME/DUST EXTRACTION OR GENERAL VENTILATION SYSTEMS ARE ENABLED.
- .4 SAFETIES
 - THE UNIT WILL SHUT DOWN IF:
 - SMOKE DETECTOR (DIV 26) SENSES PRODUCTS OF COMBUSTION
 - LOW LIMIT TEMPERATURE SENSOR LT SENSES BELOW SET POINT.
- .5 MODES OF OPERATION
 - .1 HEATING
 - THE RTU CONTROLLER WILL MODULATE GAS-FIRED HEATING SECTION TO MAINTAIN SPACE TEMPERATURE.
 - .2 COOLING
 - THE RTU CONTROLLER WILL STAGE COMPRESSOR TO MAINTAIN SPACE TEMPERATURE.
 - .3 ECONOMIZER MODE (FREE COOLING)
 - WHEN OUTDOOR AIR ENTHALPY IS LOWER THAN RETURN AIR ENTHALPY THE RTU WILL OPERATE IN ECONOMIZING MODE.
- .6 MONITORED POINTS
 - SUPPLY FAN STATUS
 - HEATING STATUS
 - COOLING STATUS
 - COMPRESSOR STATUS
 - ECONOMIZER POSITION
 - SPACE TEMPERATURE
 - SUPPLY AIR TEMPERATURE
- .7 ALARM POINTS
 - GENERAL UNIT ALARM
 - FILTER ALARM STATUS
- .8 TRENDS
 - TOTAL RTU RUN TIME



FUME/DUST EXTRACTION SYSTEM FOR WELD SHOP #4

- .1 GENERAL DESCRIPTION OF THE SYSTEM
 - THE FUME/DUST EXTRACTION SYSTEM CONSISTS OF MULTIDUST BANK AND EXHAUST FAN. BOTH COMPONENTS WILL BE INSTALLED OUTSIDE ON GRADE.
- .2 SCHEDULE
 - THE UNIT WILL BE ENABLED THROUGH BAS ACCORDING TO TOD SCHEDULE.
- .3 START/STOP
 - .1 SYSTEM START
 - THE UNIT WILL START ON LOCAL COMMAND BY THE OPERATOR AND CONTROLLED VIA ITS CONTROL PANEL.
 - .2 SYSTEM STOP
 - THE SYSTEM WILL STOP ON LOCAL COMMAND BY THE OPERATOR.
- .4 SAFETIES
 - FAN STOP IF:
 - SMOKE DETECTOR (DIV 26) SENSES PRODUCT OF COMBUSTION
 - ANY OF THE MONITORED GASES (CO, H₂S, NO₂) EXCEEDS LOW ALARM LEVEL.
- .5 MONITORED POINTS
 - FAN OFF/ON STATUS
 - FAN RUN TIME HISTORY
- .6 ALARM POINTS
 - EXHAUST FAN FAILURE TO START
- .7 TRENDS
 - TOTAL FUME/DUST EXTRACTION SYSTEM RUN TIME.



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NO.	ISSUES/ REVISIONS	DATE	BY
1	ISSUED FOR REVIEW	2026-03-23	
2	ISSUED FOR PRE-TENDER	2026-03-31	
3	ISSUED FOR ADDENDUM 01	2026-04-07	
4	ISSUED FOR REVIEW	2026-04-17	
5	ISSUED FOR PERMIT	2026-05-05	
6	ISSUED FOR TENDER	2026-05-14	

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PROJECT:
 DURHAM COLLEGE WELDING SHOP EXPANSION
 1610 CHAMPLAIN AVENUE WHITBY, ONTARIO, L1N 6A7 DURHAM COLLEGE

DRAWING:
 CONTROLS- SHEET NO. 1

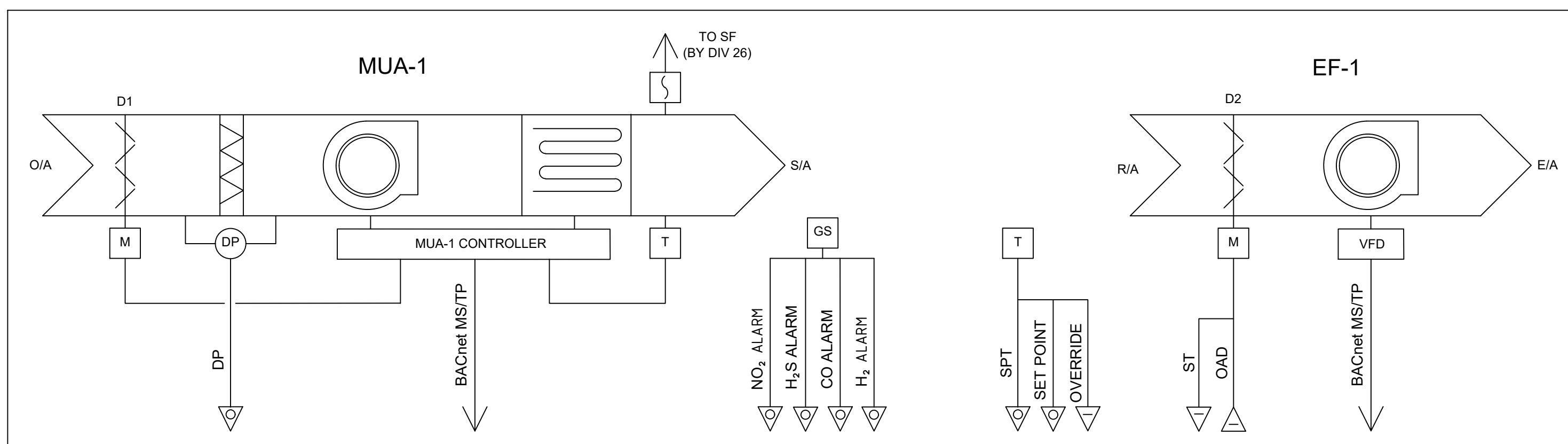
DESIGN BY: TT SEAL:
 DRAWN BY: ML
 CHECKED BY: MH
 DATE: APR, 2026
 SCALE:

PROJECT NO: 24333-08 DRAWING NO: M3-01

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SEQUENCE OF OPERATION FOR WELD SHOP #4 VENTILATION SYSTEM MUA-1 AND EF-1

- .1 GENERAL DESCRIPTION OF THE SYSTEM
 - .1 THE SYSTEM CONSISTS OF A HEATING ONLY 100% OUTDOOR AIR UNIT WITH INDIRECT GAS-FIRED HEATING SECTION AND UTILITY TYPE EXHAUST FAN AS A SEPARATE COMPONENT. BOTH EQUIPMENT WILL BE MOUNTED ON WELD SHOP #4 ROOF. THE SYSTEM WILL BE USED FOR WELD SHOP #4 GENERAL VENTILATION.
- .2 SCHEDULE
 - .1 THE VENTILATING SYSTEM WILL OPERATE ACCORDING TO TOD SCHEDULING.
- .3 START/STOP
 - .1 SYSTEM START
ON START-UP, OUTDOOR AND EXHAUST AIR DAMPERS D1 AND D2 TO OPEN. UPON FULL OPENING THESE DAMPERS AND THEIR POSITIONS ARE PROVEN VIA END SWITCHES, THE DDC WILL ENABLE THE FANS TO START.
 - .2 SYSTEM STOP
MAKE-UP AIR UNIT MUA-1 AND EXHAUST FAN EF-1 WILL SHUT-OFF ON COMMON COMMAND RECEIVED FROM BAS. OUTDOOR AND EXHAUST AIR DAMPERS D1 & D2 WILL MODULATE CLOSE.
- .4 SAFETIES
 - .1 FAN TO STOP IF:
SMOKE DETECTORS (DIV.26) SENSES PRODUCTS OF COMBUSTION.
LOW LIMIT TEMPERATURE SENSOR LT SENSES BELOW SETPOINT.
- .5 MODES OF OPERATION
 - THE MAKE-UP AIR UNIT WILL OPERATE IN HEATING AND VENTILATING MODE ONLY.
SPACE TEMPERATURE SENSORS TO OPERATE THROUGH THE DDC PANEL TO MAINTAIN SET POINT AT 22°C (ADJUSTABLE) BY MODULATING THE MUA-1 GAS BURNER.
- .6 MONITORED POINTS
 - SUPPLY AIR TEMPERATURE
 - RETURN AIR TEMPERATURE
 - MOTORIZED DAMPERS' POSITION
 - SUPPLY FAN SPEED
 - CO LEVEL/ALARM
 - H₂S LEVEL/ALARM
 - NO₂ LEVEL/ALARM
 - H₂ LEVEL/ALARM
 - FURNACE STAGE IGNITION
 - FILTER DP
- .7 ALARM POINTS
 - GENERAL ALARM
 - CO LEVEL 25 ppm: LOW ALARM
 - CO LEVEL 50-100 ppm: HIGH ALARM
 - DUST/SMOKE PARTICLES EXCEED CRITICAL LEVEL
- .8 TRENDS
 - TOTAL MAKE UP AIR UNIT RUN TIME



BAS INTERFACE	
POINT DESCRIPTION	POINT TYPE
FAN START/STOP	DO
FAN STATUS	DI
FAN SPEED COMMAND	AO
FAN SPEED FREQUENCY	AI
GAS SECTION START/STOP	DO
GAS SECTION FEEDBACK	AI
S/A TEMP. SET POINT	AO
GAS SECTION ALARM	DI
O/A DAMPER	DO
O/A DAMPER STATUS	DI

BACnet INTERFACE	
POINT DESCRIPTION	POINT TYPE
CO LEVEL/ALARM	AI
H ₂ S LEVEL/ALARM	AI
NO ₂ LEVEL/ALARM	AI
H ₂ LEVEL/ALARM	AI
SPACE TEMPERATURE	AI
SPACE TEMP SET POINT	AI
SPACE TEMP. OVERRIDE	DI

BAS INTERFACE	
POINT DESCRIPTION	POINT TYPE
START/STOP	DO
STATUS	DI
SPEED COMMAND	AO
SPEED FREQUENCY	AI
O/A DAMPER	DO
O/A DAMPER STATUS	DI

VENTILATION SYSTEM MUA-1 & EF-1

NO.	ISSUES/ REVISIONS	DATE	BY
1	ISSUED FOR REVIEW	2026-03-23	
2	ISSUED FOR PRE-TENDER	2026-03-31	
3	ISSUED FOR ADDENDUM 01	2026-04-07	
4	ISSUED FOR REVIEW	2026-04-17	
5	ISSUED FOR PERMIT	2026-05-05	
6	ISSUED FOR TENDER	2026-05-15	

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PROJECT:
**DURHAM COLLEGE
 WELDING SHOP
 EXPANSION**

1610 CHAMPLAIN AVENUE
 WHITBY, ONTARIO, L1N 6A7
 DURHAM COLLEGE

DRAWING:
CONTROLS- SHEET NO. 2

DESIGN BY: TT SEAL:
 DRAWN BY: ML
 CHECKED BY: MH
 DATE: APR, 2026
 SCALE:

PROJECT NO: **24333-08** DRAWING NO: M3-02

MAKE-UP AIR UNIT SCHEDULE (SUPPLIED BY THE OWNER)

REF	DESCRIPTION	LOCATION	SERVING	AIR FLOW (l/s)	OPERATING RPM	EXTERNAL STATIC PRESSURE (Pa)	TOTAL STATIC PRESSURE (Pa)	CAPACITY (kW)		FUEL TYPE	INLET GAS PRESSURE	DIMENSIONS (m)			MANUFACTURER	MODEL	POWER SUPPLY							STARTER			CONTROLS			OTHER REQUIREMENTS:			REMARKS:	NOTES:	
								INPUT	OUTPUT			LxWxH (M)	OP. WEIGHT (kg)	RIGGING WEIGHT (kg)			FLA	MCA	MCOP	VOLTS	PHASE	FED FROM	EM.	NORM.	SUPPLIED BY:	INSTALLED BY:	TYPE	MAN.	AUTO.	INTERLOCK BY:	DISC. AT MOTOR	W.P. DISC. AT MOTOR			F.A. SHUT
MUA-1	100% OUTDOOR AIR HANDLING UNIT	ROOF	WELD SHOP #4	2124	-	370	-	146	117	NATURAL GAS	7"	3.6 x 1.1 x 1.1	768	-	MODINE	HDP500	7.0	8.5	15	575	3	-	-	Y	DIV. 20	DIV. 20	VFD	-	YES	DIV. 20	-	YES	NO	C/W ROOF CURB, DOWNTURN PLENUM, AIR INLET HOOD, VFD, ISOLATION DISCONNECT.	MERV 13 FILTERS WILL BE PROVIDED BY DURHAM COLLEGE FOR CONTRACTOR TO INSTALL

FAN SCHEDULE

REF	DESCRIPTION	LOCATION	SERVING	WEIGHT (kg)	AIRFLOW (l/s)	TOTAL EXTERNAL SP (kPa)	FAN RPM	MANUFACTURER	MODEL	P.W.L. db RE 10^12 WATTS OCTAVE BAND								MOTOR SIZE HP	ENERGY REQUIRED (kW)	POWER SUPPLY							STARTER			CONTROLS			OTHER REQUIREMENTS:			REMARKS:	NOTES:
										1	2	3	4	5	6	7	8			FLA	MCA	MCOP	VOLTS	PHASE	FED FROM	EM.	NORM.	SUPPLIED BY:	INSTALLED BY:	TYPE	MANUAL	AUTO.	INTERLOCK BY:	DISC. AT MOTOR	W.P. DISC. AT MOTOR		
EF-1	UTILITY CENTRIFUGAL FAN	ROOF	SMOKE EXHAUST	159	2360	498	1191	GREENHECK	USF-22	81	86	83	76	72	72	66	61	3	1.89	-	4.88	10	575	3	-	YES	DIV. 20	DIV. 20	VFD	-	YES	DIV. 20	-	-	-	REFER TO SECTION 23 34 00	

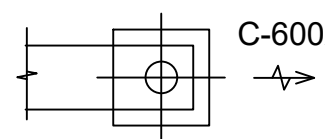
EXISTING ROOFTOP UNIT SCHEDULE

REF	DESCRIPTION	LOCATION	SERVING	AIR FLOW (l/s)	TOTAL STATIC PRESSURE (Pa)	COOLING CAPACITY (kW)		HEATING CAPACITY (kW)		FUEL TYPE	INLET GAS PRESSURE	DIMENSIONS (m)			MANUFACTURER	MODEL	POWER SUPPLY							STARTER			CONTROLS			OTHER REQUIREMENTS:			REMARKS:	NOTES:	
						SENSIBLE	TOTAL	INPUT	OUTPUT			LxWxH (M)	OP. WEIGHT (kg)	RIGGING WEIGHT (kg)			FLA	MCA	MCOP	VOLTS	PHASE	FED FROM	EM.	NORM.	SUPPLIED BY:	INSTALLED BY:	TYPE	MAN.	AUTO.	INTERLOCK BY:	DISC. AT MOTOR	W.P. DISC. AT MOTOR			F.A. SHUT
RTU	DX COOLING GAS HEATING PACKAGED ROOFTOP UNIT	ROOF	WELD SHOP #4	-	-	-	-	-	-	NATURAL GAS	7"	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	DIV. 20	DIV. 20	PKG	-	YES	DIV. 20	-	YES	NO	

REGISTERS, GRILLES AND DIFFUSERS SCHEDULE

REFERENCE	FUNCTION	CONFIGURATION	MODEL NUMBER	MOUNTING TYPE	REMARKS:
A	SUPPLY AIR	LOUVERED FACE GRILLE	/520D/FL/A/B/12	DRYWALL / SIDEWALL	REFER TO PLANS FOR SIZE
B	RETURN / EXHAUST AIR	LOUVERED FACE GRILLE	/530D/FL/A/B/12	DRYWALL / SIDEWALL	REFER TO PLANS FOR SIZE

SYMBOL CLARIFICATION



C-600x600-500

C - DIFFUSER/GRILLE TYPE
600x600 - GRILLE SIZE
500 - AIR QUANTITY L/S

NOTES:
1 - PROVIDE OPPOSED BLADE DAMPER
2 - PROVIDE CABLE OPERATED BALANCING DAMPER

SELECTION BASED ON EH PRICE

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DURHAM COLLEGE

DRAWING:

EQUIPMENT SCHEDULES &
CONTROLS

DESIGN BY: TT SEAL:
DRAWN BY: ML
CHECKED BY: MH
DATE: APR, 2026
SCALE:

PROJECT NO: 24333-08 DRAWING NO: ME-01