

ABBREVIATIONS	
Symbol	Description
AC	AIR CURTAIN
AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
AG	AIR GAS
AMP	AMPERAGE
AP	ACCESS PANEL
ARI	AIR CONDITIONING AND REFRIGERATION INSTITUTE
AS	AIR SEPARATOR
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS
AV	AIR VENT
BDD	BACK DRAFT DAMPER
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSE POWER
BT	BATH TUB
BTU	BRITISH THERMAL UNIT
BTU/H	BRITISH THERMAL UNITS PER HOUR
CAV	CONTROL AIR VOLUME
CBV	CIRCUIT BALANCE VALVE
CC	COOLING COIL
CD	CONDENSATE DRAIN
CFM	CUBIC FEET PER MINUTE
CO	CLEAN OUT, OR CARBON MONOXIDE
CO2	CARBON DIOXIDE
CTE	CONNECT TO EXISTING
CV	CONTROL VALVE
DB	DRY BULB
dB	DECIBELS
DCBP	DOUBLE CHECK BACKFLOW PREVENTER
DCW	DOMESTIC COLD WATER
DDC	DIRECT DIGITAL CONTROLS
DEG	DEGREE
DF	DESTRATIFICATION FANS
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RECIRC
DIA	DIAMETER
DN	DOWN
DP	DEW POINT TEMPERATURE
DPS	DIFFERENTIAL PRESSURE SENSOR
DWG	DRAWING
DWV	DRAIN WASTE VENT
DX	DIRECT EXPANSION
E/A	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EL	ELEVATION
EPA	ENVIRONMENTAL PROTECTION AGENCY
EPACT	ENERGY POLICY ACT
ESH	EMERGENCY SHOWER
ESP	EXTERNAL STATIC PRESSURE
EW	EMERGENCY EYEWASH
EWT	ENTERING WATER TEMPERATURE
F/D	FIRE DAMPER
FC	FAN CONTROLLER
FD	FLOOR DRAIN
FFD	FUNNEL FLOOR DRAIN
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
FFM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOW SWITCH
FT	FEET
FU	FIXTURE UNIT
G	NATURAL GAS
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HC	HEATING COIL
HD	HEAD
HOA	HAND/OFF/AUTOMATIC
HP	HORSE POWER
HR	HOUR
HYD	HYDRANT
I/O	INPUT/OUTPUT
IN	INCHES
IN HG	INCHES OF MERCURY
IN WC	INCH WATER COLUMN
IN WG	INCH WATER GAUGE
INV	INVERT
KS	KITCHEN SINK
KW	KILOWATT
KWh	KILOWATT HOUR
L	LITER
L/s	LITERS PER SECOND
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LB	POUNDS
LBHR	POUNDS PER HOUR
LWT	LEAVING WATER TEMPERATURE
m	METER
m/s	METERS PER SECOND
MAT	MIXED AIR TEMPERATURE
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	1000 BRITISH THERMAL UNITS PER HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MD	MOTOR OPERATED DAMPER
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MH	MANHOLE
MIN	MINIMUM
mm	MILLIMETER
MOCp	MINIMUM OVER CURRENT PROTECTION
N/A	NOT APPLICABLE
NC	NOISE CRITERIA, OR NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM	NOMINAL
NOx	NITROUS OXIDES
NPW	NON POTABLE WATER
NTS	NOT TO SCALE
O/A	OUTSIDE AIR
OC	ON CENTER
Pa	PASCAL
PD	PRESSURE DROP, OR PUMP DISCHARGE
PF	PEAK FIXTURE
PG	PRESSURE GAUGE
PPM	PARTS PER MILLION
PRV	PRESSURE REDUCING / REGULATING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH - ABSOLUTE
PSIG	POUNDS PER SQUARE INCH - GAUGE
PTRV	PRESSURE TEMPERATURE RELIEF VALVE
R/A	RETURN AIR
RAT	RETURN AIR TEMPERATURE
RD	ROOF DRAIN, OR RELIEF DAMPER
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL

ABBREVIATIONS	
Symbol	Description
RLA	RUN LOAD AMPERE
RO	REVERSE OSMOSIS
RPM	REVOLUTIONS PER MINUTE
RWL	RAIN WATER LEADER
S/I	SANITARY INVERT
S.W.I.	STORM WATER INVERT
S/A	SUPPLY AIR
SCFM	STANDARD CUBIC FEET PER MINUTE
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SP	STATIC PRESSURE
SQ FT	SQUARE FEET
SV	SUPERVISED VALVE
TD	TRENCH DRAIN
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
TP	TRAP PRIMER
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TYP	TYPICAL
U/G	UNDERGROUND
UL / ULC	UNDERWRITERS LABORATORY / CANADA
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
W	WATTS
Wb	WET BULB
WC	WATER CLOSET
WG	WATER GAUGE
WH	NON-FREEZE WATER HYDRANT
WHA	WATER HAMMER ARRESTER
WPD	WATER PRESSURE DROP
WS	WATER SOFTENER
°C	DEGREES CENTIGRADE (CELCIUS)
°F	DEGREES FAHRENHEIT
ø	DIAMETER
ΔP	CHANGE IN PRESSURE
ΔT	CHANGE IN TEMPERATURE

SYMBOLS	
	SUPPLY / OUTSIDE AIR DUCT (UP & DOWN)
	EXHAUST DUCT (UP & DOWN)
	RETURN DUCT (UP & DOWN)
	ROUND AND SQUARE CEILING SUPPLY OUTLET
	ROUND AND SQUARE CEILING RETURN INLET
	ROUND AND SQUARE CEILING EXHAUST INLET
	SQUARE DIRECTIONAL CEILING SUPPLY OUTLET
	WALL SUPPLY OUTLET
	WALL RETURN / EXHAUST INLET
	INCLINED RISE, IN DIRECTION OF AIR FLOW
	INCLINED DROP, IN DIRECTION OF AIR FLOW
	NEW DUCT (INSIDE DIMENSIONS: WIDTH x DEPTH)
	LOUVER OPENING
	FLEXIBLE DUCTWORK
	DUCT WITH ACOUSTIC LINING
	THERMOSTAT
	THERMOSTAT WITH COVER
	TEMPERATURE SENSOR
	HUMIDISTAT
	DIFFERENTIAL PRESSURE SENSOR
	STATIC PRESSURE SENSOR
	CARBON MONOXIDE SENSOR
	CARBON DIOXIDE SENSOR
	NITROGEN DIOXIDE SENSOR
	FLOW SWITCH

SYMBOLS	
	MOTOR OPERATED DAMPER
	FIRE DAMPER
	SMOKE DAMPER
	COMBINATION FIRE & SMOKE DAMPER
	FIRE EXTINGUISHER
	FIRE EXTINGUISHER, CO2
	DOUBLE CHECK BACKFLOW PREVENTER
	DRAINS ABOVE
	FLOOR CLEANOUT
	CLEANOUT PLUG
	FLOOR DRAIN
	ROOF DRAIN

ANNOTATION	
TAGS	DESCRIPTION
	VAV BOX SIZE
	MIN. AIR FLOW [L/s]
	MAX. AIR FLOW [L/s]
	REHEAT COIL
	EQUIPMENT TAG
	SEQUENTIAL NUMBER
	DIFFUSER TYPE
	NECK SIZE [mm]
	AIR FLOW [L/s]
	TYPICAL QUANTITY
	GRILLE TYPE
	GRILLE SIZE [mmxmm]
	AIR FLOW [L/s]
	CALLOUT HEAD
	DETAIL NUMBER
	REFERENCING SHEET

SYMBOLS	
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RETURN
	TEMPERED WATER
	TEMPERED WATER RETURN
	SANITARY ABOVE SLAB
	SANITARY BELOW SLAB
	STORM ABOVE SLAB
	STORM BELOW SLAB
	VENT
	GRAVITY FED CONDENSATE DRAIN
	PUMPED DISCHARGE
	HOT WATER SUPPLY
	HOT WATER RETURN
	HOT WATER REVERSE RETURN
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	GLYCOL HOT WATER SUPPLY, LOW TEMPERATURE
	GLYCOL HOT WATER RETURN, LOW TEMPERATURE
	GLYCOL WATER SUPPLY
	GLYCOL WATER RETURN
	SOFT WATER
	CONCENTRIC REDUCER OR INCREASER
	ECCENTRIC REDUCER OR INCREASER
	TOP CONNECTION, 45° OR 90°
	BOTTOM CONNECTION, 45° OR 90°
	SIDE CONNECTION
	RISER DOWN (ELBOW)
	RISER UP (ELBOW)
	RISER DOWN (IN PIPE)
	RISER UP (IN PIPE)
	RISE OR DROP IN PIPE
	ELBOW
	PIPE BREAK
	CAP ON END OF PIPE
	UNION
	MANUAL AIR VENT
	AUTOMATIC AIR VENT
	GATE VALVE OR GENERIC VALVE REFER TO SPECIFICATIONS
	BALL VALVE
	DRAIN VALVE WITH THREADED HOSE END CONNECTION
	GATE VALVE, O.S.&Y.
	BUTTERFLY VALVE
	2-WAY BUTTERFLY VALVE
	CHECK VALVE
	ANGLE GLOBE VALVE
	PLUG VALVE
	PRESSURE REGULATING VALVE
	SOLENOID VALVE
	PRESSURE SAFETY VALVE
	VALVE IN RISE
	VALVE IN DROP
	THERMOMETER
	PRESSURE GAUGE
	PRESSURE GAUGE W/ STOPCOCK
	PLUGGED PRESSURE GAUGE CONNECTION
	TWO WAY CONTROL VALVE
	THREE WAY CONTROL VALVE
	CIRCUIT BALANCING VALVE
	EXPANSION JOINT
	PIPE/DUCT FLEXIBLE CONNECTION
	WATER METER
	CHILLED WATER REVERSE RETURN

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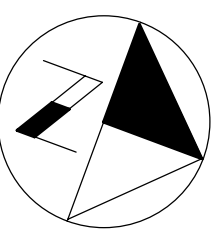
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THE REGIONAL MUNICIPALITY
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DESIGN, CONSTRUCTION & ASSET MANAGEMENT

NEW SEATON PARAMEDIC STATION AND TRAINING FACILITY IN PICKERING MECHANICAL LEGENDS AND DRAWING LIST

PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. PO61- 18- 01
CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 000	SHEET NO.




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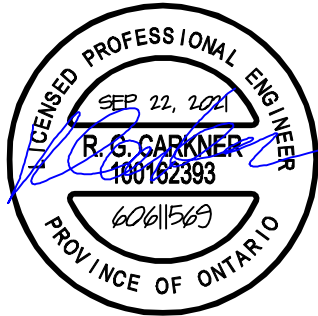
KEY PLAN

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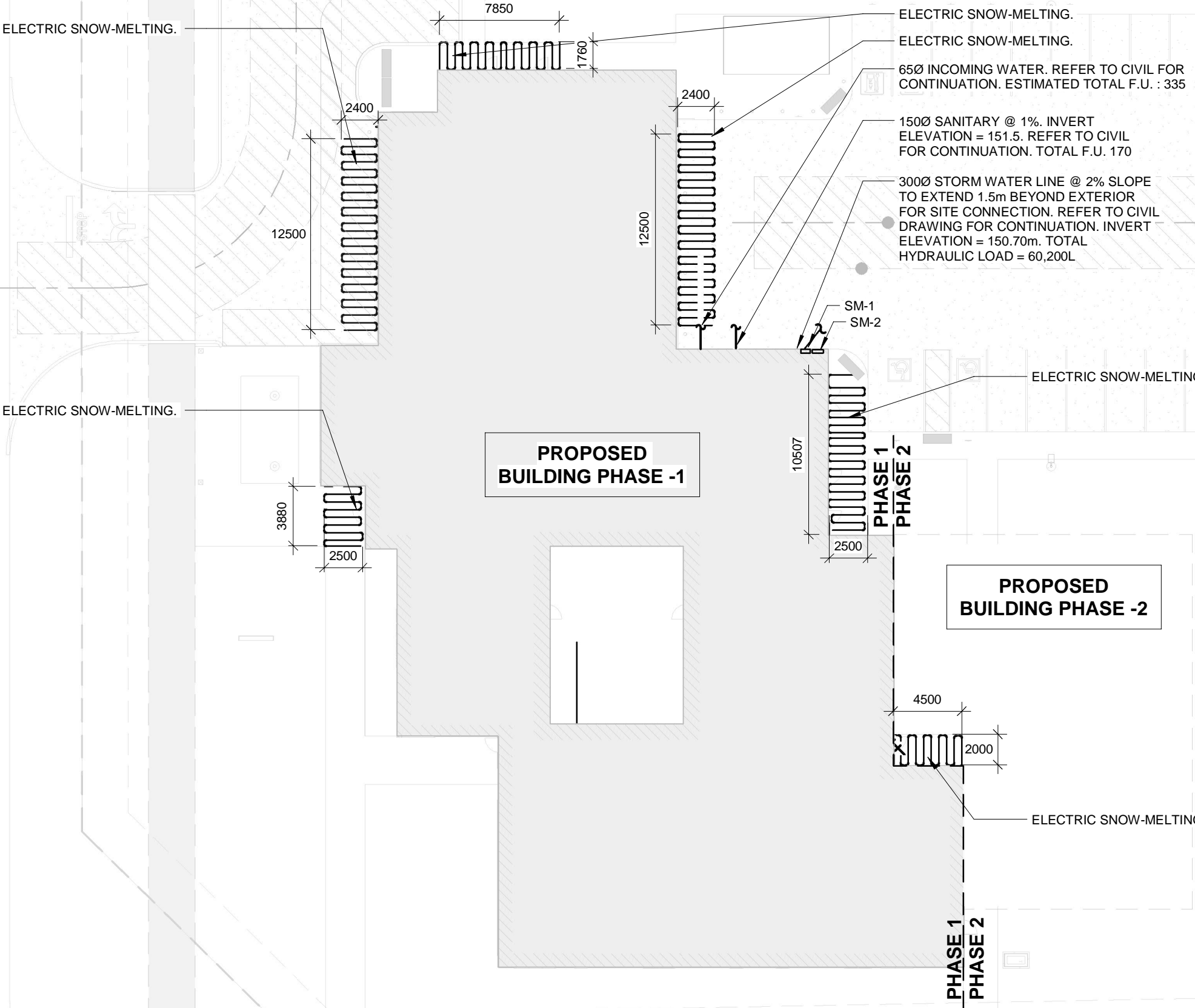
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NEW SEATON PARAMEDIC STATION
AND TRAINING FACILITY IN PICKERING
MECHANICAL SITE PLAN

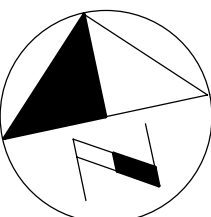
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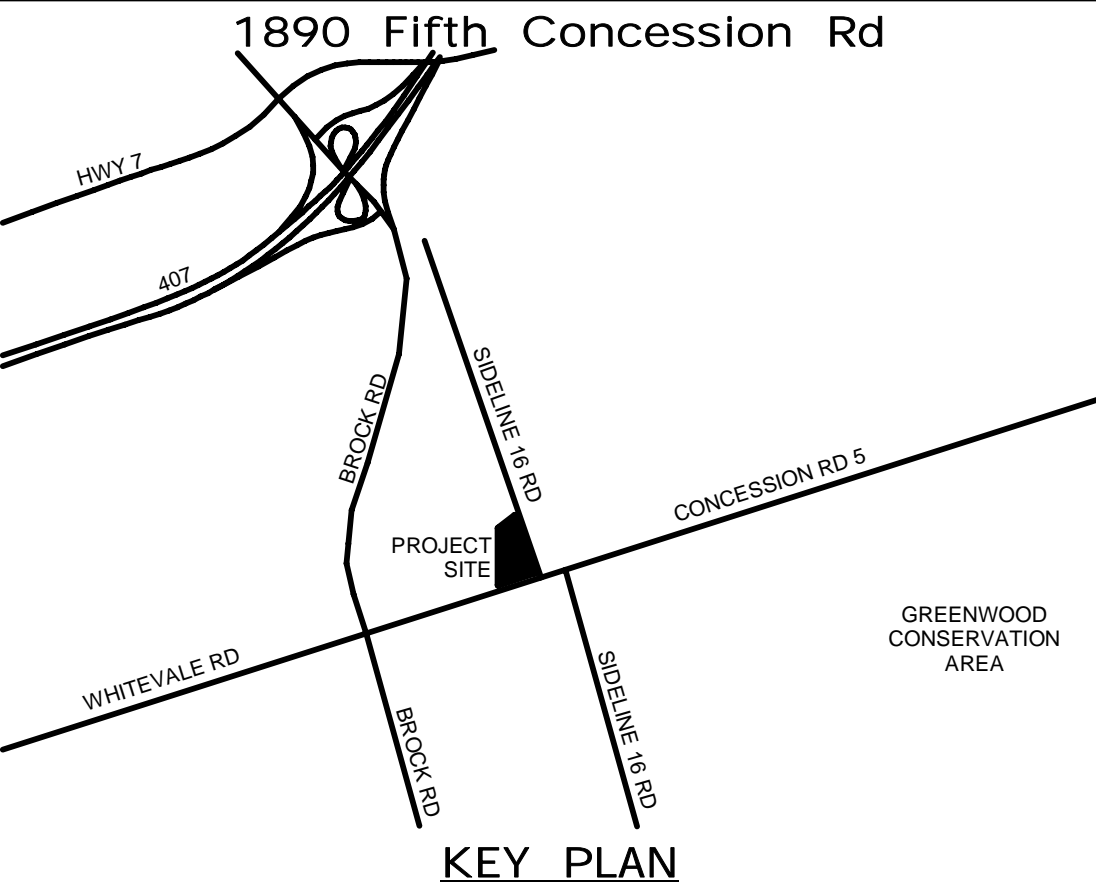


PLUMBING AND DRAINAGE NOTES

1. PROVIDE MINIMUM OF 750 PIPING FOR UNDERGROUND SANITARY.
2. PROVIDE APPROVED BACKFLOW PREVENTOR FOR ALL TRAP SEAL PRIMER SYSTEMS.
3. PROVIDE MINIMUM 1000 PIPING FOR UNDERGROUND STORMWATER DRAINAGE.
4. INSTALL ALL PIPING OVERHEAD, TIGHT TO UNDESIDE OF THE STRUCTURE WITH SUFFICIENT ROOM FOR INSULATION UNLESS INDICATED OTHERWISE. ROUTE PIPING WITHIN STRUCTURE STEEL STRATA OR THROUGH CONCRETE BEAMS WHERE PRACTICAL SUPPLY DUCT OF FAN COILS FC-3,4,8,9,10,11,13,19 SHALL BE ACOUSTICALLY LINED FOR MINIMUM LENGTH OF 3 METERS.
5. PROVIDE SHUT-OFF VALVE ON ALL MIN RISERS AND AT EACH CONNECTION TO THE EQUIPMENT FOR FLOW CONTROL IN TIME OF MAINTANANCE.
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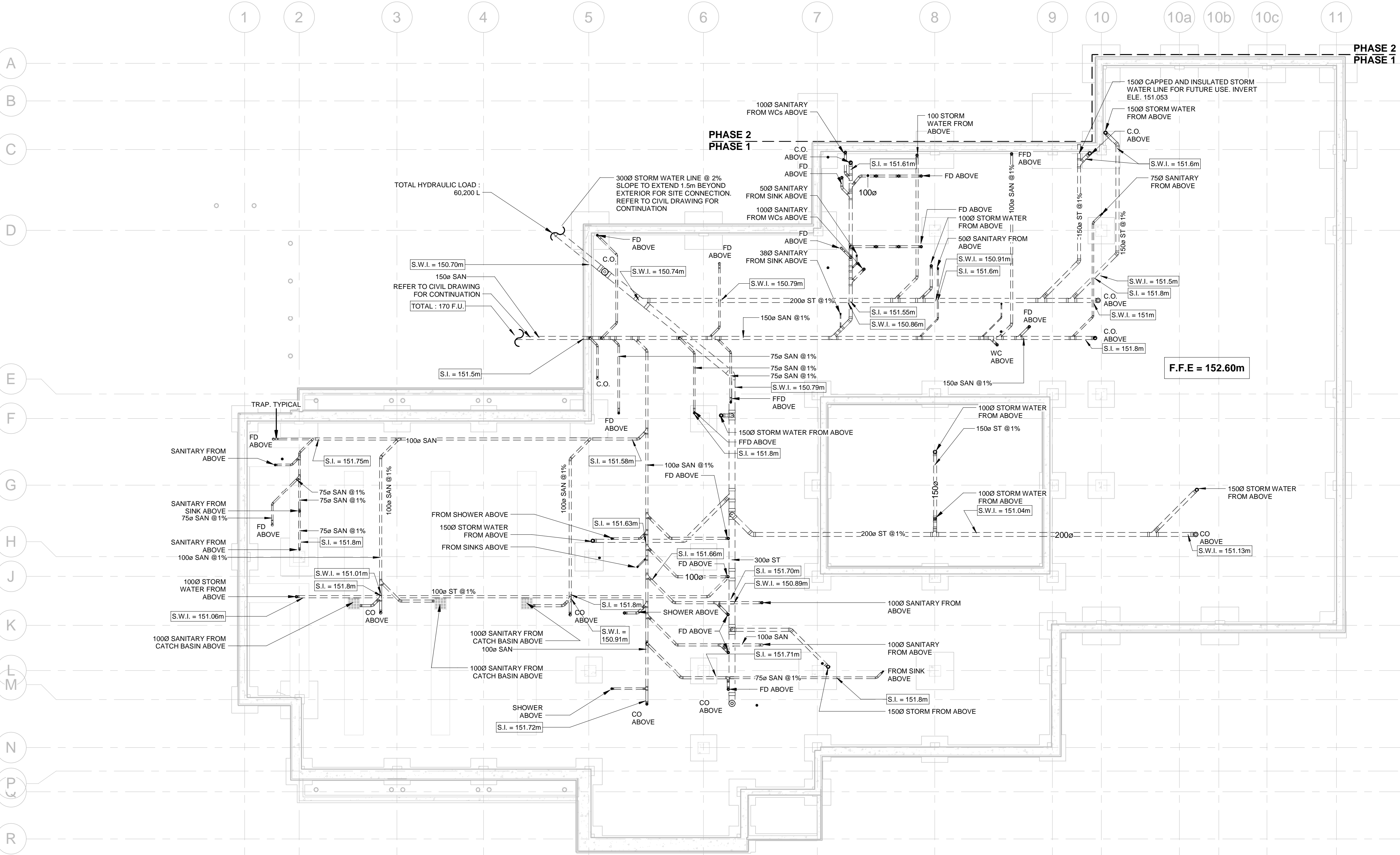
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NEW SEATON PARAMEDIC STATION
AND TRAINING FACILITY IN PICKERING
UNDERSLAB PLAN - DRAINAGE

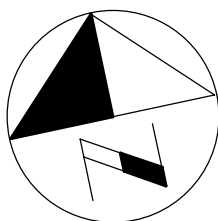
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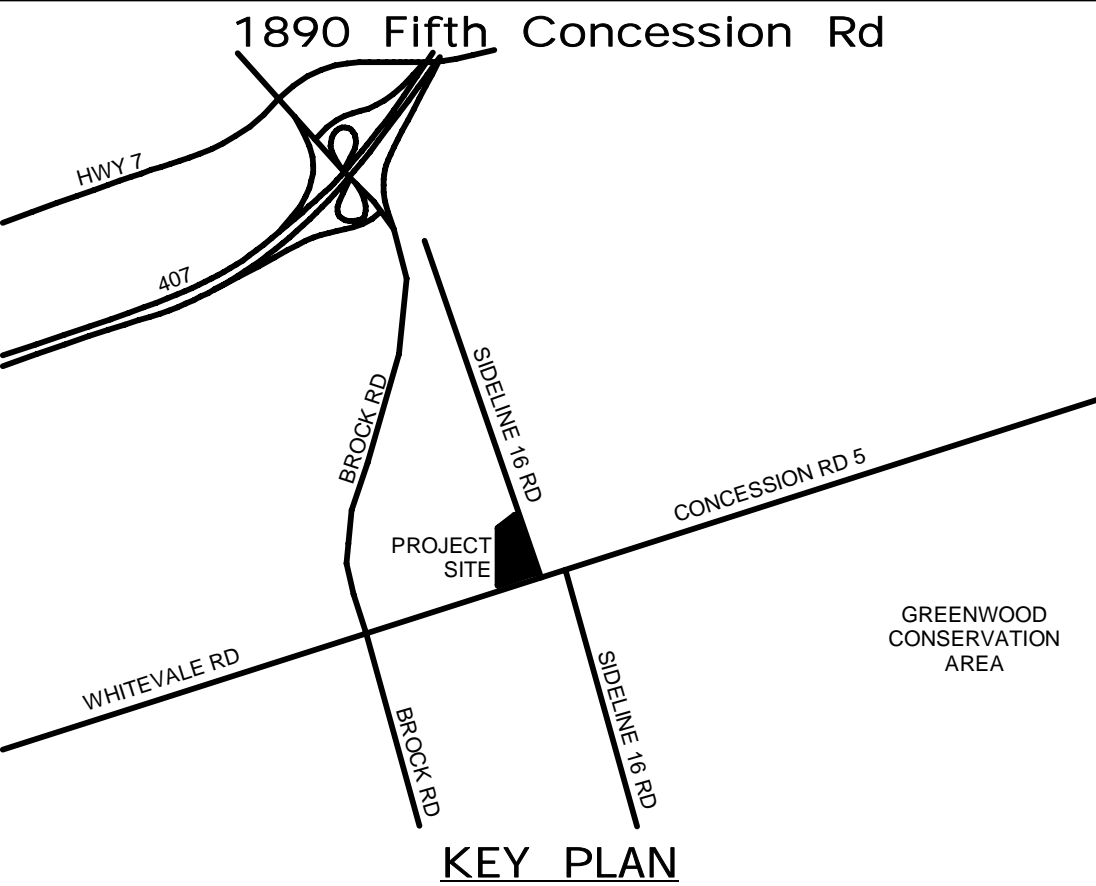
1 UNDERSLAB FLOOR PLAN - OVERALL DRAINAGE

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SEP 23, 2021
R. S. CARKNER
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PROVINCE OF ONTARIO

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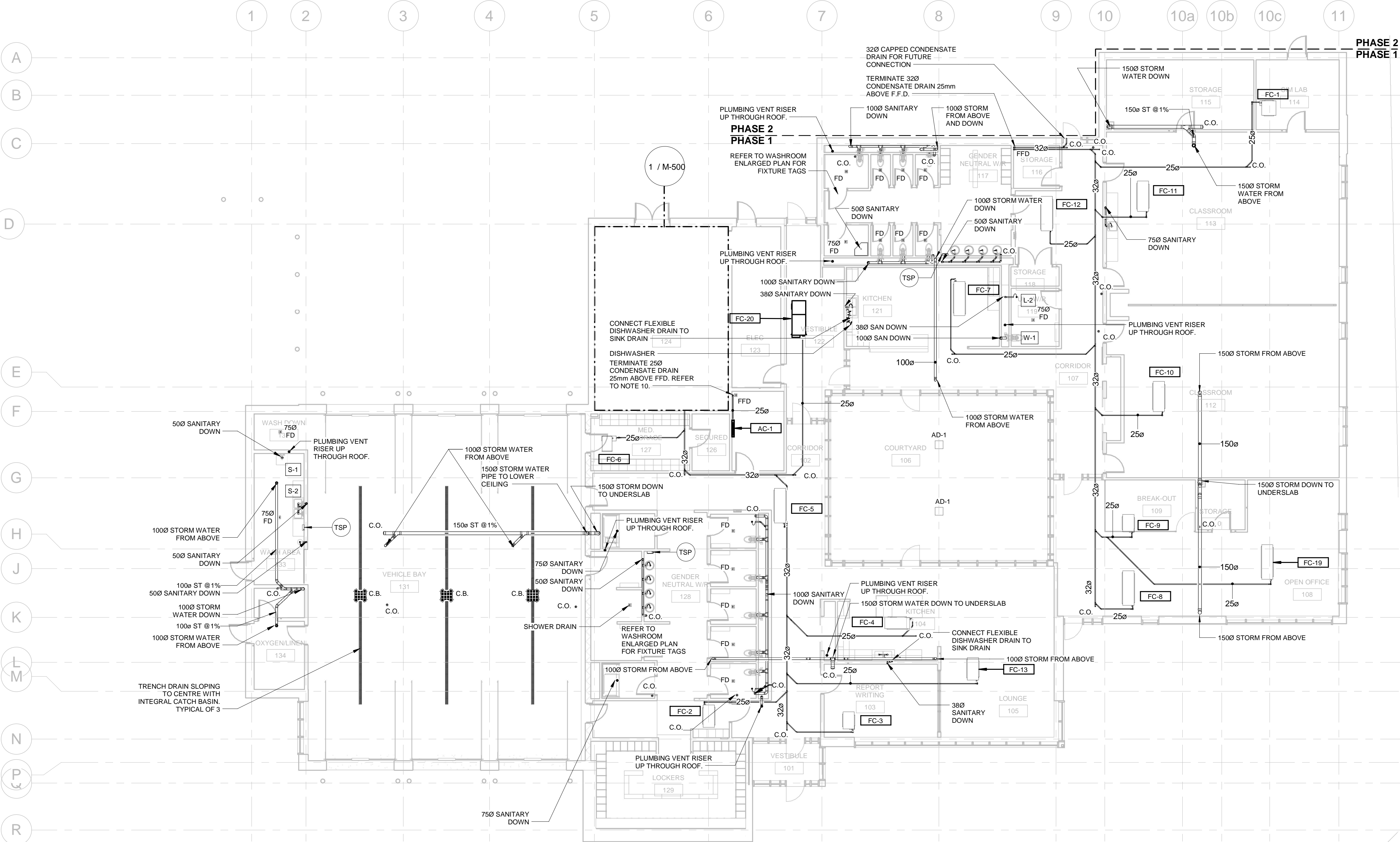
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NEW SEATON PARAMEDIC STATION AND TRAINING FACILITY IN PICKERING
FLOOR PLAN - DRAINAGE

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CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 101	SHEET NO.

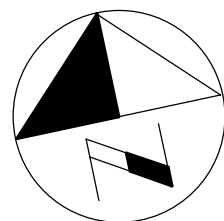


1 GROUND FLOOR PLAN - OVERALL DRAINAGE
M-101 1 : 125

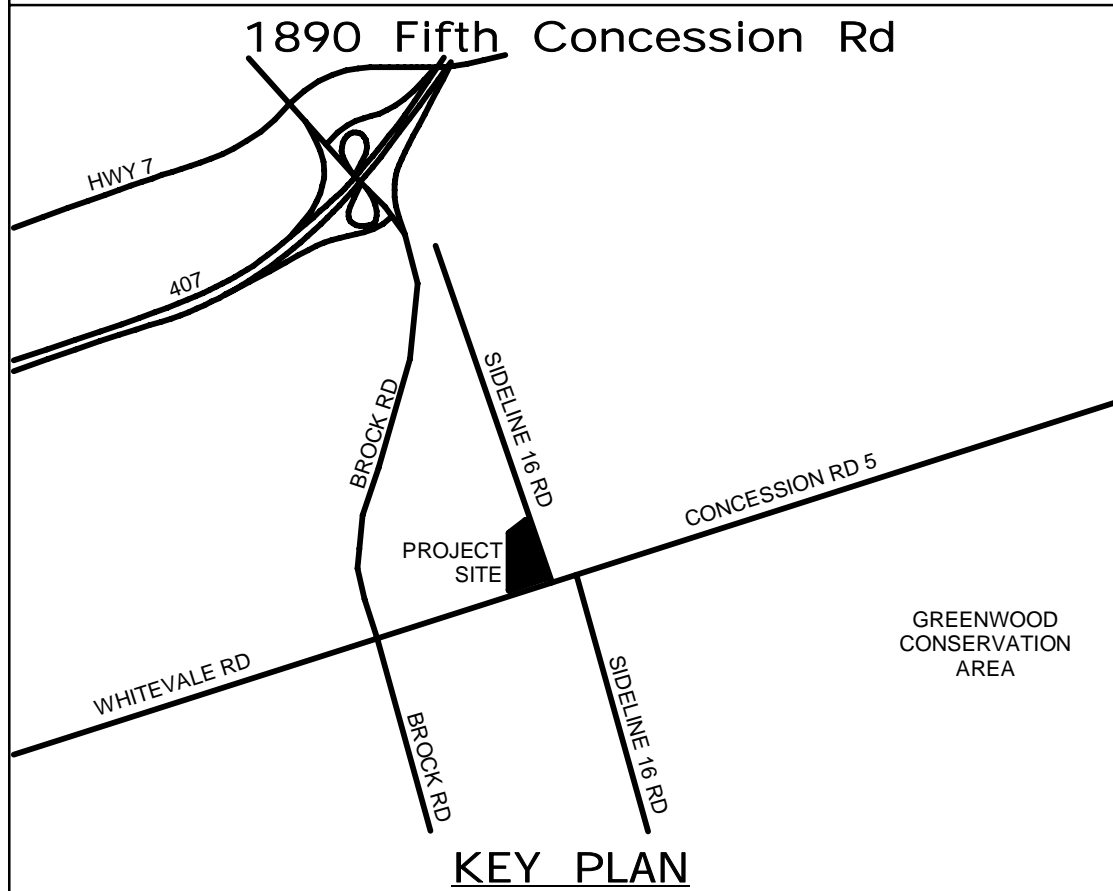
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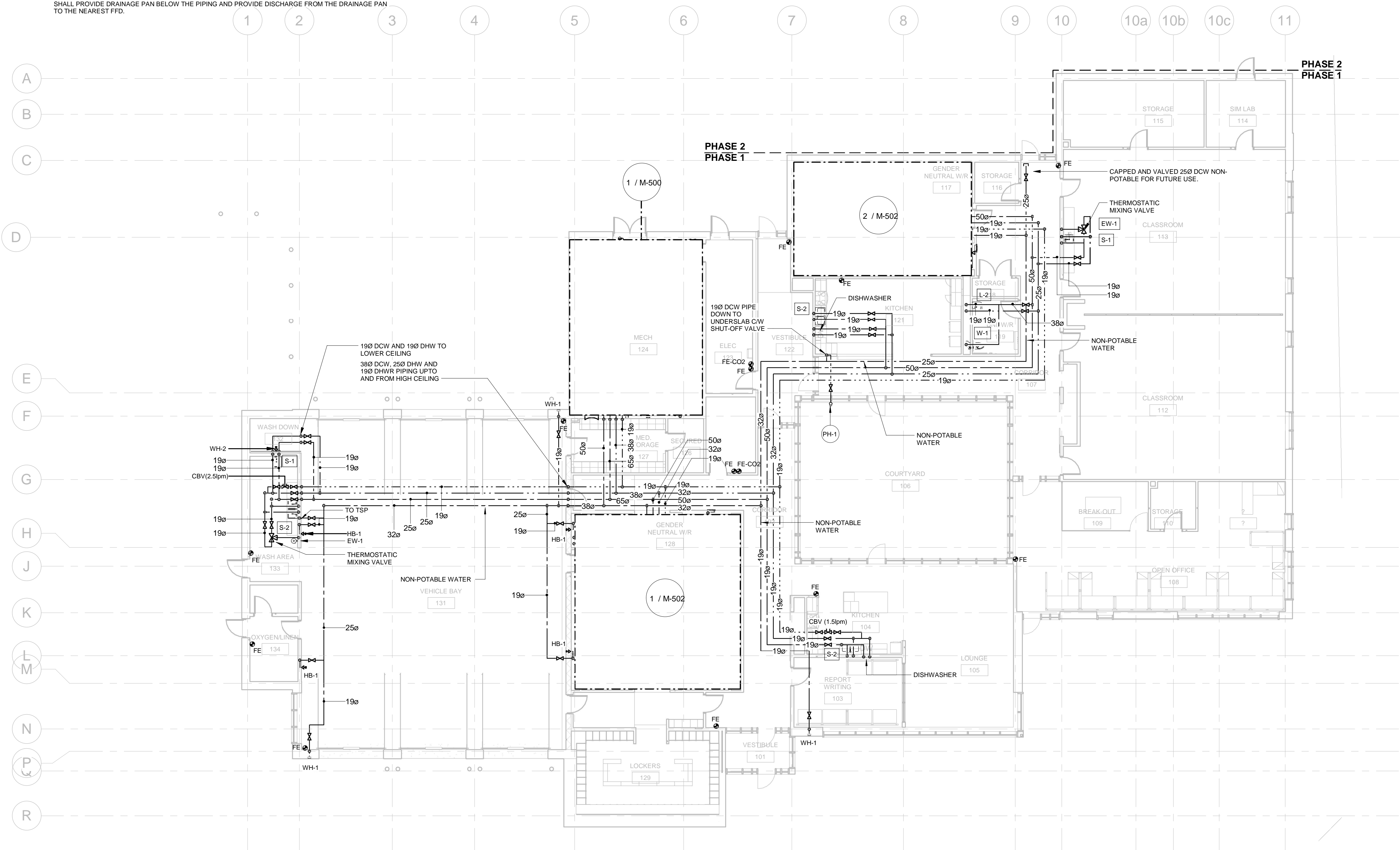
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DESIGN, CONSTRUCTION & ASSET MANAGEMENT

NEW SEATON PARAMEDIC STATION
AND TRAINING FACILITY IN PICKERING
FLOOR PLAN - PLUMBING & FIRE
PROTECTION

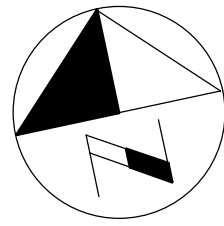
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CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 200	SHEET NO.



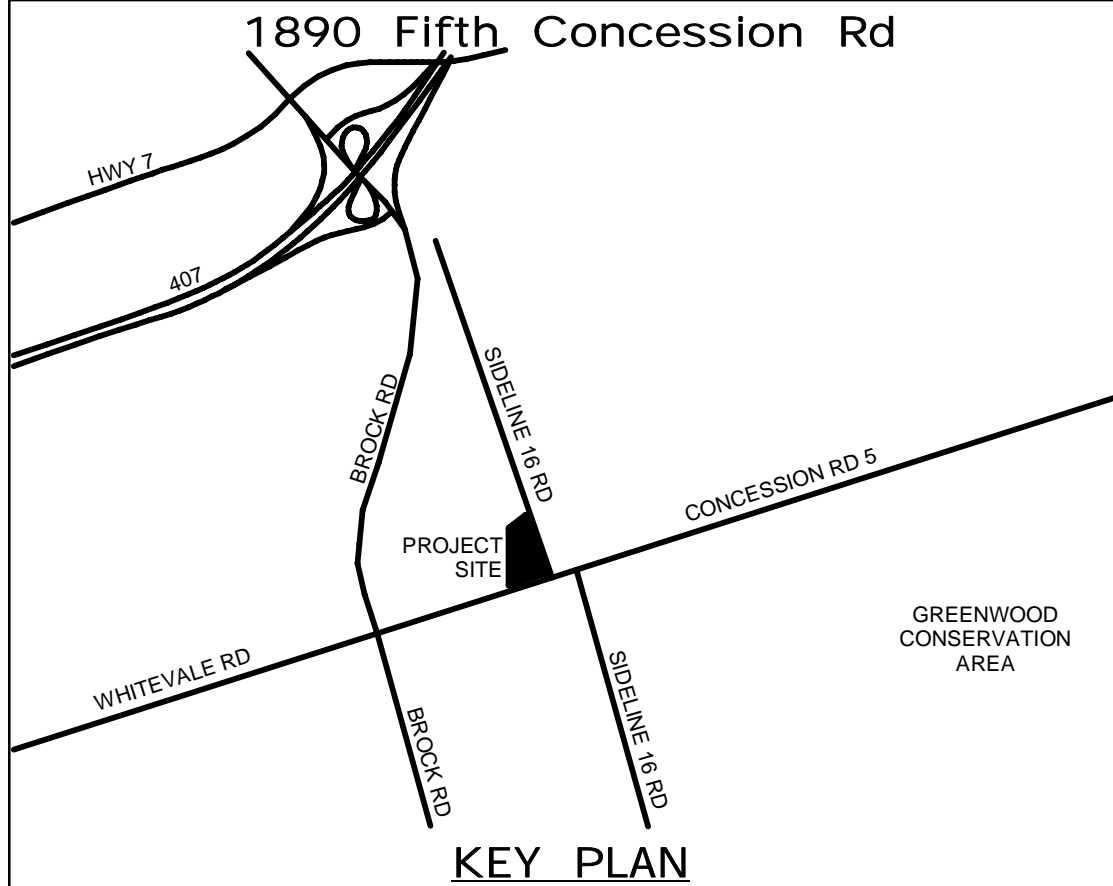
1 GROUND FLOOR PLAN - OVERALL PLUMBING AND FIRE PROTECTION

KEY NOTES

1. PROVIDE SILVER COLOURED GRAVITY BACKDRAFT FLAP FOR RANGE HOOD AND WASHROOM EXHAUST. (TYPICAL OF 3) INSTALL AT 3500 AFF
2. DUCT DOWN TO 300MM A.F.F. COMPLETE WITH BALANCING DAMPER. TERMINATE AT E3 GRILLE..
3. 3500 TRANSFER DUCT TO BE 300X300 UNLESS INDICATED OTHERWISE. PROVIDE ACOUSTICALLY LINED DUCT FOR ALL TRANSFER AIR DUCTS.
4. RETURN AIR PLENUMS OF FAN COIL TO BE ACOUSTICALLY LINED COMPLETE WITH MITERED SINGLE THICKNESS VANE ELBOW. FOR SIZE, REFER TO MANUFACTURER SPECIFICATION. (TYPICAL FOR ALL FAN COILS)
5. PROVIDE ACCESS DOORS FOR ALL FAN COILS, VAV TERMINAL BOXES AND BALANCING DAMPERS IN AREAS WITHOUT T-BAR CEILING.
6. INSTALL GAS DETECTORS OF VEHICLE BAY AT 1500mm A.F.F.
7. ROOM THERMOSTATS OF FOLLOWING FAN COIL UNITS SHALL HAVE INTEGRATED RELATIVE HUMIDITY SENSOR AND CO2 SENSOR. FC-3,4,8,9,13&19
8. ROOM THERMOSTATS OF FOLLOWING FAN COIL UNITS SHALL HAVE INTEGRATED RELATIVE HUMIDITY SENSOR, CO2 SENSOR AND OCCUPANCY SENSOR. FC-10&11
9. AIR BALANCING AND SEQUENCING OF MOTORIZED DAMPERS:
 - a. WHEN EMS IS THE ONLY OCCUPIED SPACE OF THE BUILDING (AS DETERMINED BY THE TIME-OF-DAY SCHEDULING) GENERAL RETURN AIR DAMPER (MD-4) SHALL BE CLOSED AND WASHROOM EXHAUST AIR DAMPER (MD-5) SHALL BE FULLY OPEN.
 - b. WHEN THE ENTIRE SPACE OF PHASE-1 BUILDING IS OCCUPIED (AS DETERMINED BY THE ZONE OCCUPANCY SENSORS AND TIME-OF-DAY SCHEDULING) DAMPERS (MD-3) AND (MD-5) SHALL BE FULLY OPEN AND DAMPER (MD-4) SHALL ONLY OPEN TO ALLOW A MAXIMUM AIRFLOW RATE OF 885 AT COMPLETION OF PHASE-1. BALANCE THE SPEED OF SUPPLY AND RETURN FAN TO DELIVER 1755 CFM (830 LPS) TO THE VAV BOXES OF PHASE-1.



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DRAWN BY: Author	DATE: 10/27/20
CHECKED BY: Checker	CONSULTANT PROJECT NO. 60611569
APPROVED BY: Approver	CLIENT FILE No.: 811/20

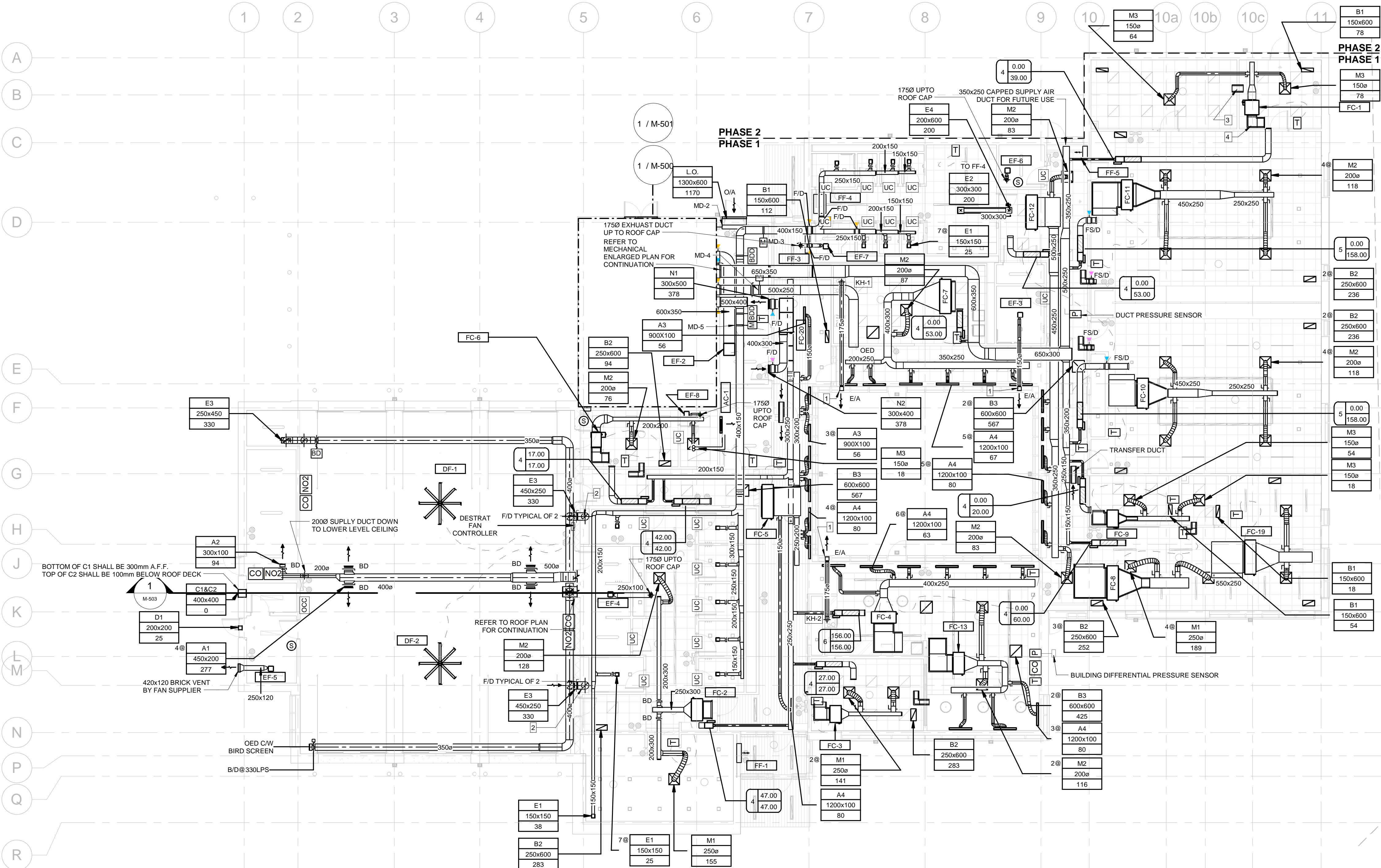
CONTRACT REVISIONS			
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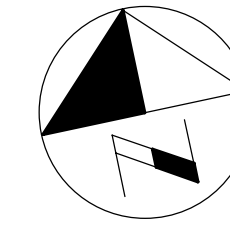
NEW SEATON PARAMEDIC STATION
AND TRAINING FACILITY IN PICKERING
FIRST FLOOR PLAN - HVAC

PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. P061- 18- 01
CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 300	SHEET NO.

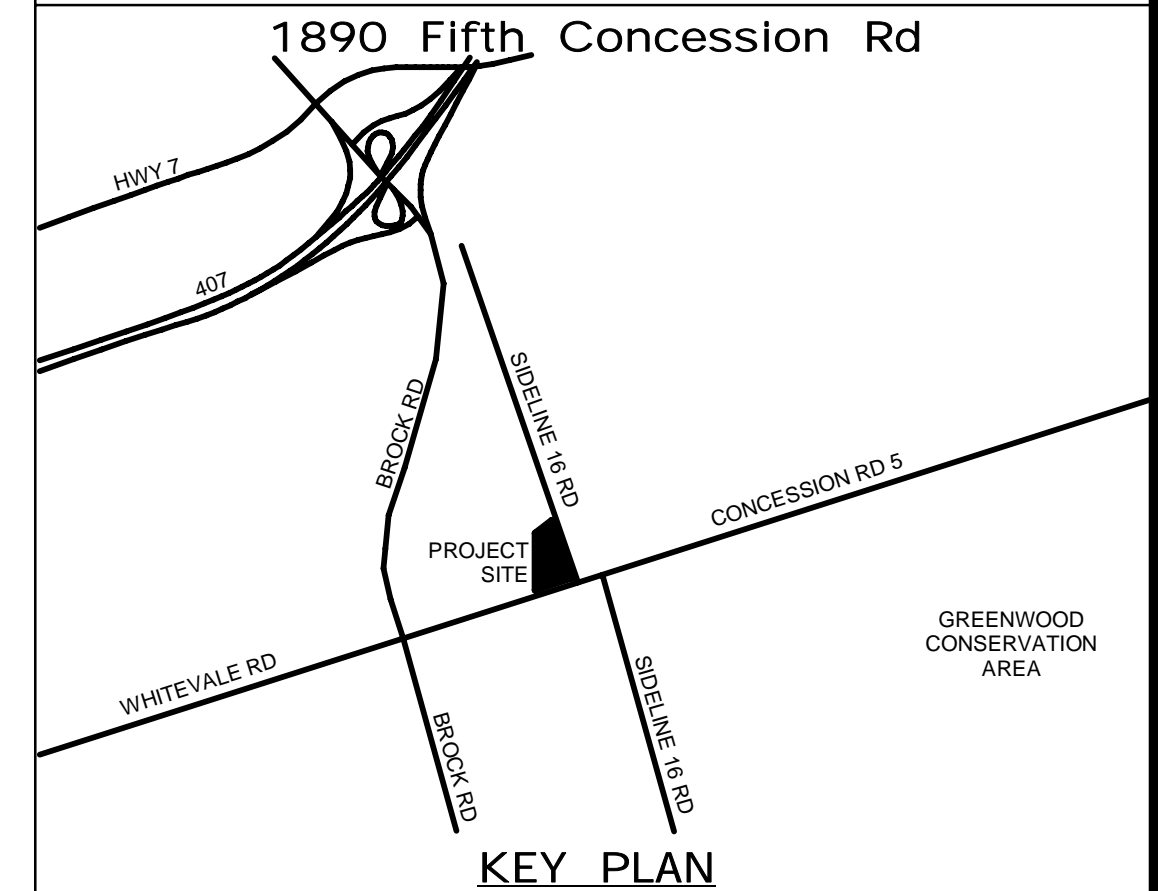


GENERAL NOTES

- 1- SHUT OFF VALVE SHALL BE CLOSED AT COMPLETION OF PHASE 2 (TYP. OF 2).
- 2- PIPING SHALL NOT PASS DIRECTLY ABOVE THE ELECTRICAL EQUIPMENT. CONTRACTOR SHALL PROVIDE DRAINAGE PAN BELOW ALL THE PIPING AND PROVIDE DISCHARGE FROM THE DRAINAGE PAN TO THE NEAREST FFD.
- 3- GENERAL CONTRACTOR SHALL PROVIDE ACCESS DOORS FOR OPERATING/MAINTENANCE OF VALVES IN NON-REMOVABLE CEILING TYPES (GYPSUM BOARD AND WOOD FEATURE CEILING).
- 4- INSTALL ALL PIPING OVERHEAD, TIGHT TO UNDERSIDE OF THE STRUCTURE WITH SUFFICIENT ROOM FOR INSULATION. ROUTE PIPING WITHIN STRUCTURE STEEL STRATA OR THROUGH CONCRETE BEAMS WHERE PRACTICAL.



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PROFESSIONAL ENGINEER
SEP 23, 2021
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180162353
PROVINCE OF ONTARIO

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DRAWN BY: Author	DATE: 10/28/20
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APPROVED BY: Approver	CLIENT FILE No.: 811/20

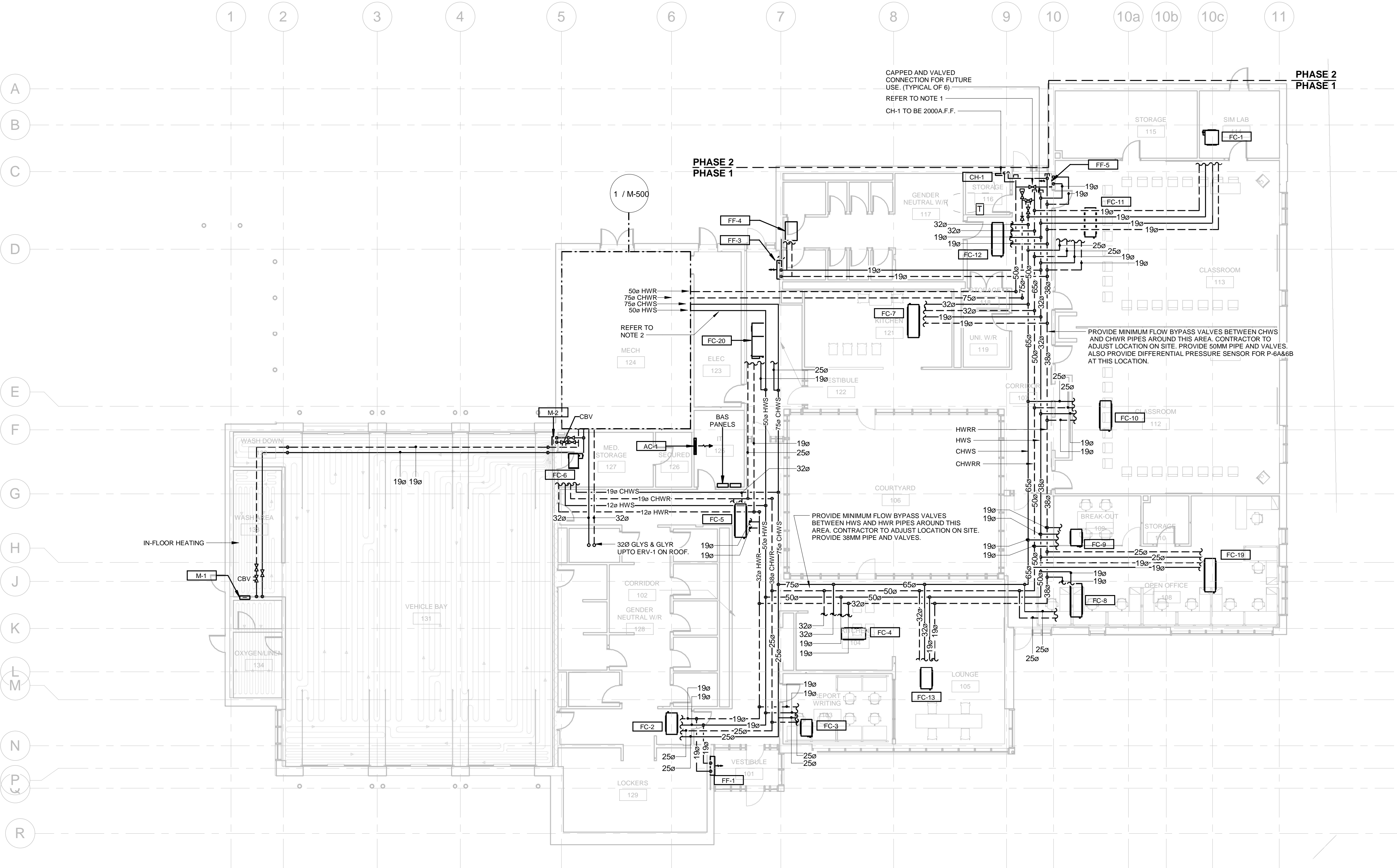
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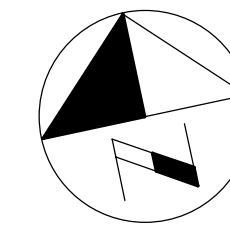
NEW SEATON PARAMEDIC STATION
AND TRAINING FACILITY IN PICKERING
FLOOR PLAN - HYDRONIC HEATING
& COOLING

PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. P061- 18- 01
CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 301	SHEET NO.

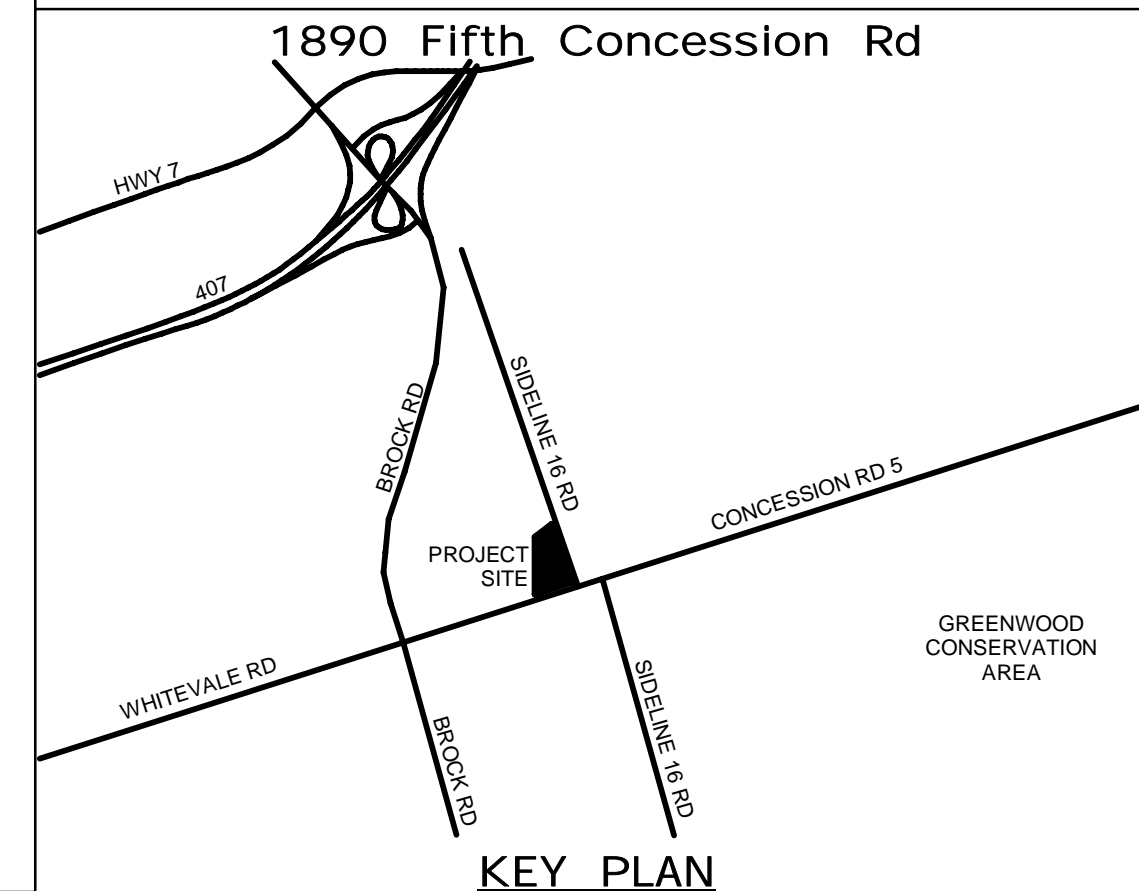


1 GROUND FLOOR PLAN - HEAT TRANSFER
M-301 M-301 1 : 125

B:\1300\JP-AMER (CAN) 60611569-Station RDP-S-M.rvt



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SEP 23, 2021


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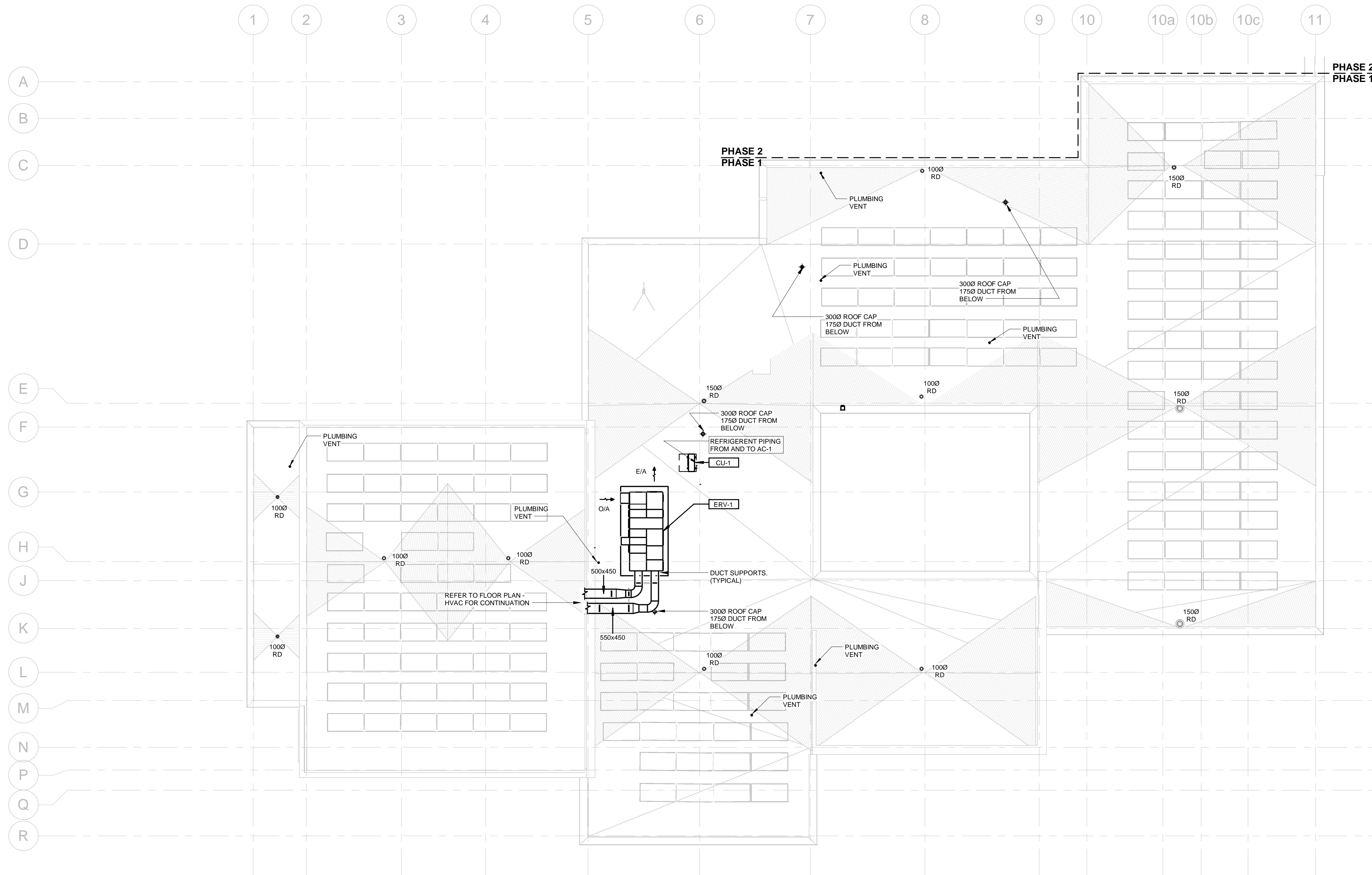
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NEW SEATON PARAMEDIC STATION
AND TRAINING FACILITY IN PICKERING
ROOF PLAN - MECHANICAL

PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. PO61- 18- 01
CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 400	SHEET NO.




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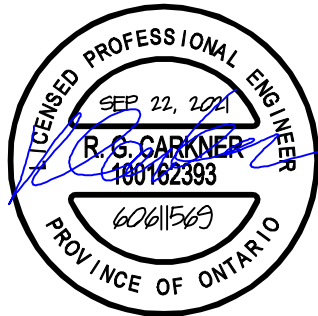
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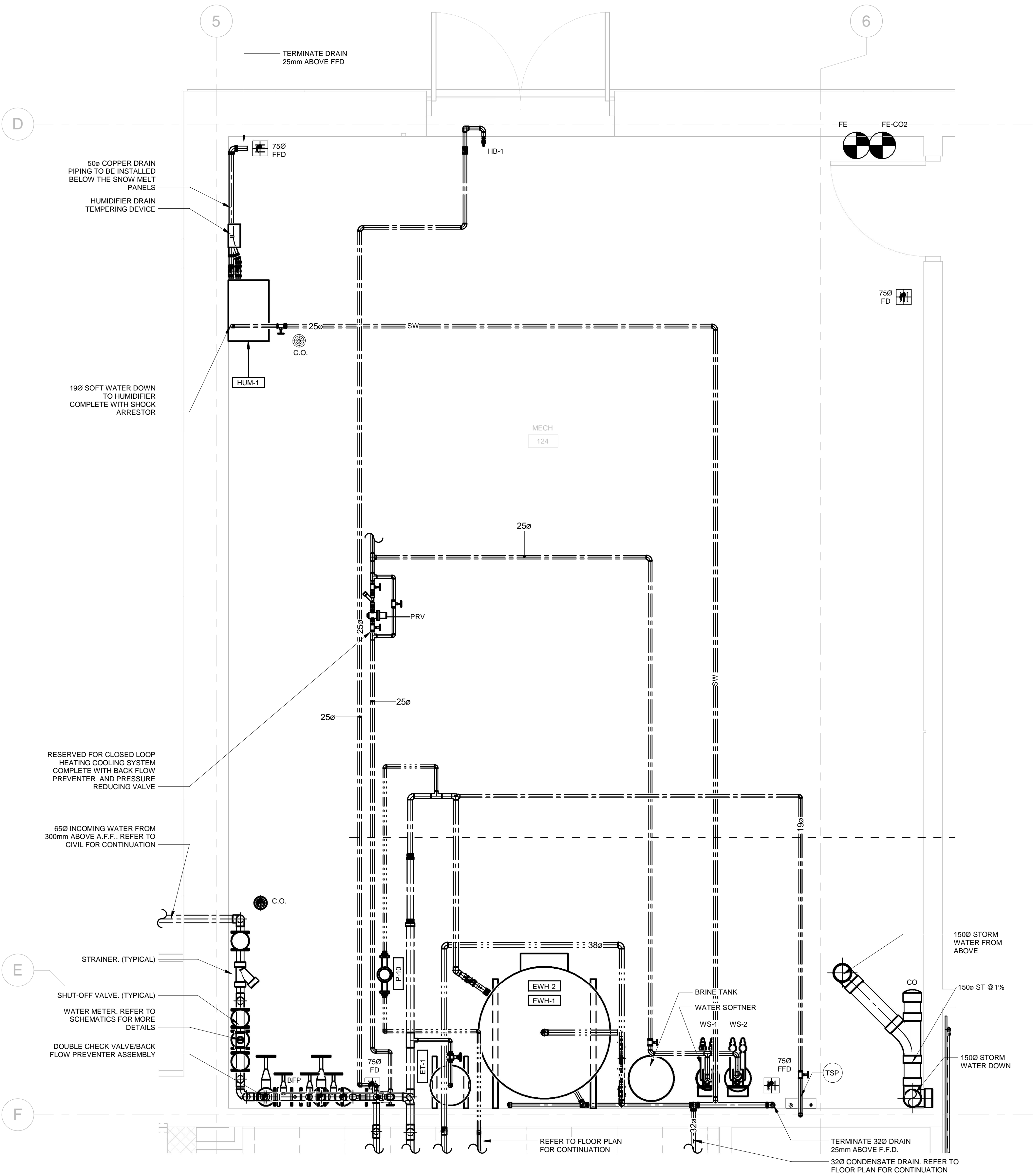
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DESIGN, CONSTRUCTION & ASSET MANAGEMENT

NEW SEATON PARAMEDIC STATION
AND TRAINING FACILITY IN PICKERING
MECHANICAL ROOM ENLARGED
PLAN- 1

PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. PO61- 18- 01
CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 500	SHEET NO.



1 MECHANICAL ROOM ENLARGED PLAN - PLUMBING, SANITARY AND STORM WATER

BIM 300/JBP-AMER (CAN) 60611569-SEATON RDP5-M.rvt

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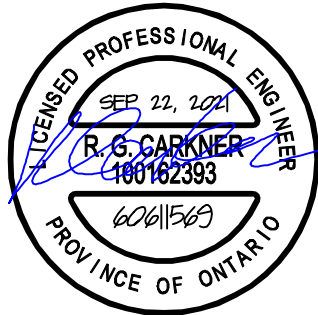
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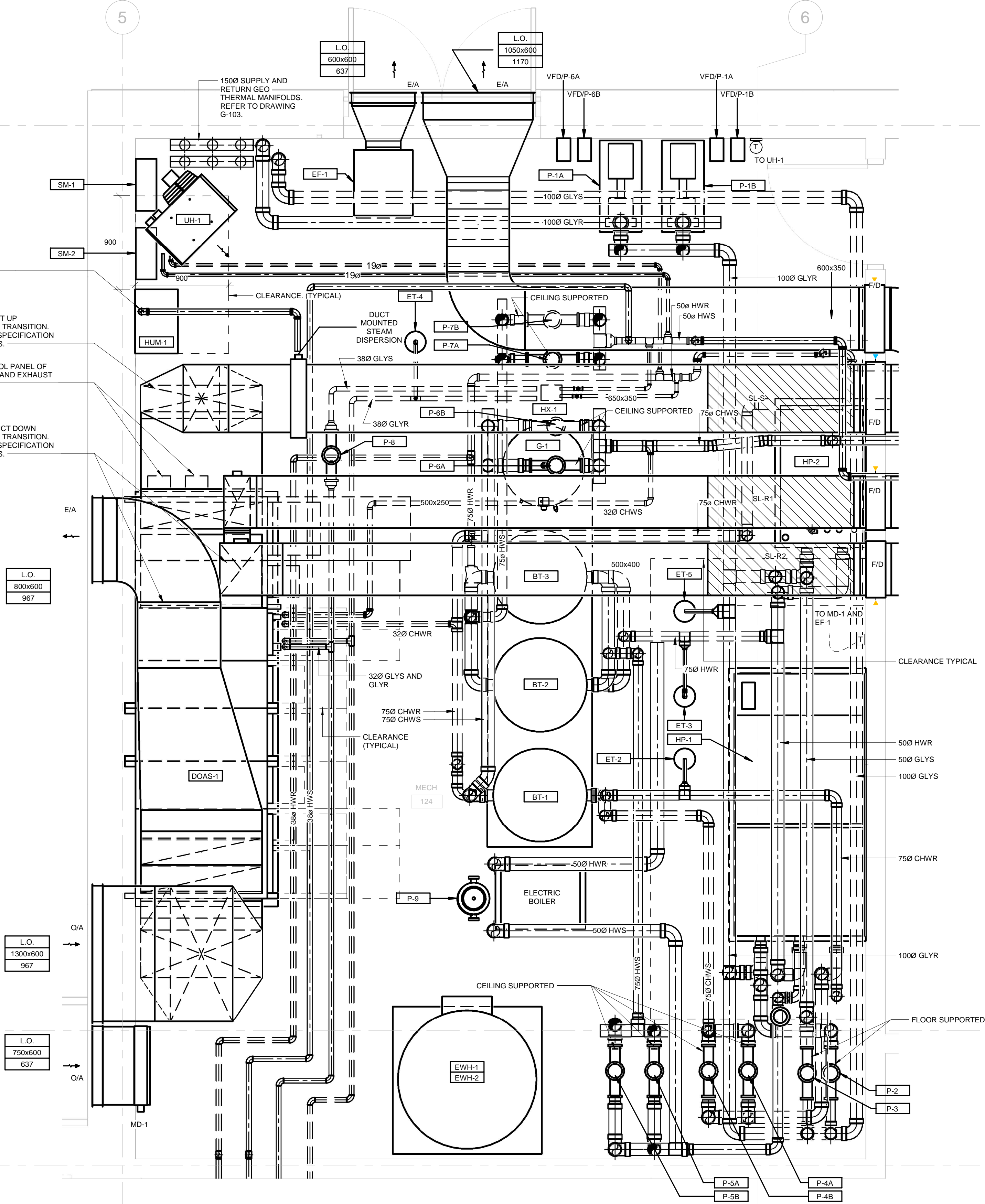
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NEW SEATON PARAMEDIC STATION
AND TRAINING FACILITY IN PICKERING
MECHANICAL ROOM ENLARGED
PLAN- 2

PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. PO61- 18- 01
CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 501	SHEET NO.



NOTE: INSTALLATION LOCATION OF CHEMICAL TREATMENT PACKAGES CT-1, CT-2, CT-3 AND CT-4 TO BE DETERMINED ON SITE.



PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. PO61- 18- 01
CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 502	SHEET NO.

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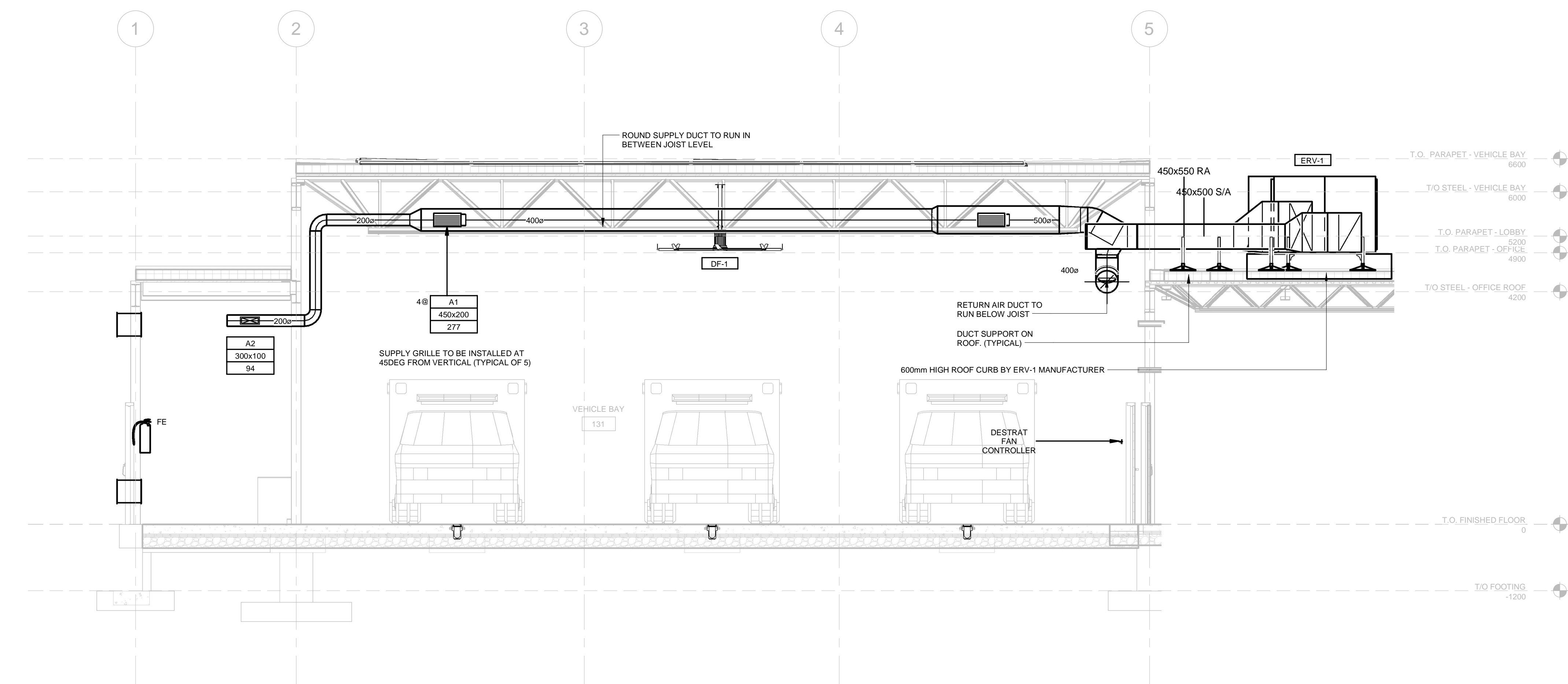
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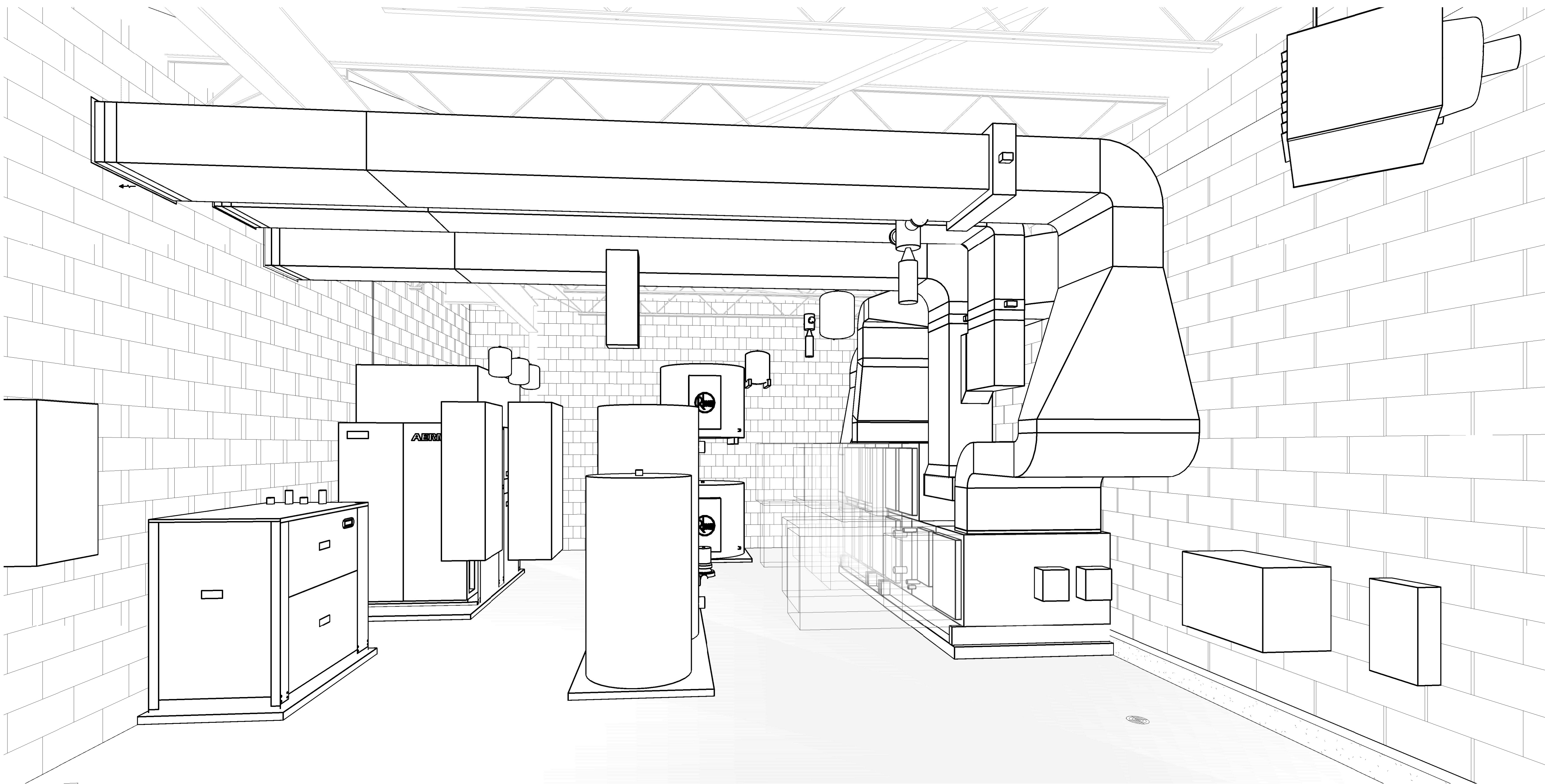
NEW SEATON PARAMEDIC STATION
AND TRAINING FACILITY IN PICKERING
MECHANICAL ENLARGED SECTION

PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. PO61- 18- 01
CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 503	SHEET NO.



1 VEHICLE BAY VENTILATION
M-300 M-503 1 : 50

BIM 300/JP-AMER (CAN) 60611569-Station RDP5-M.rvt



1 MECHANICAL ROOM ISOMETRIC
M-504

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APPROVED BY: Approver	CLIENT FILE No.: 811/20

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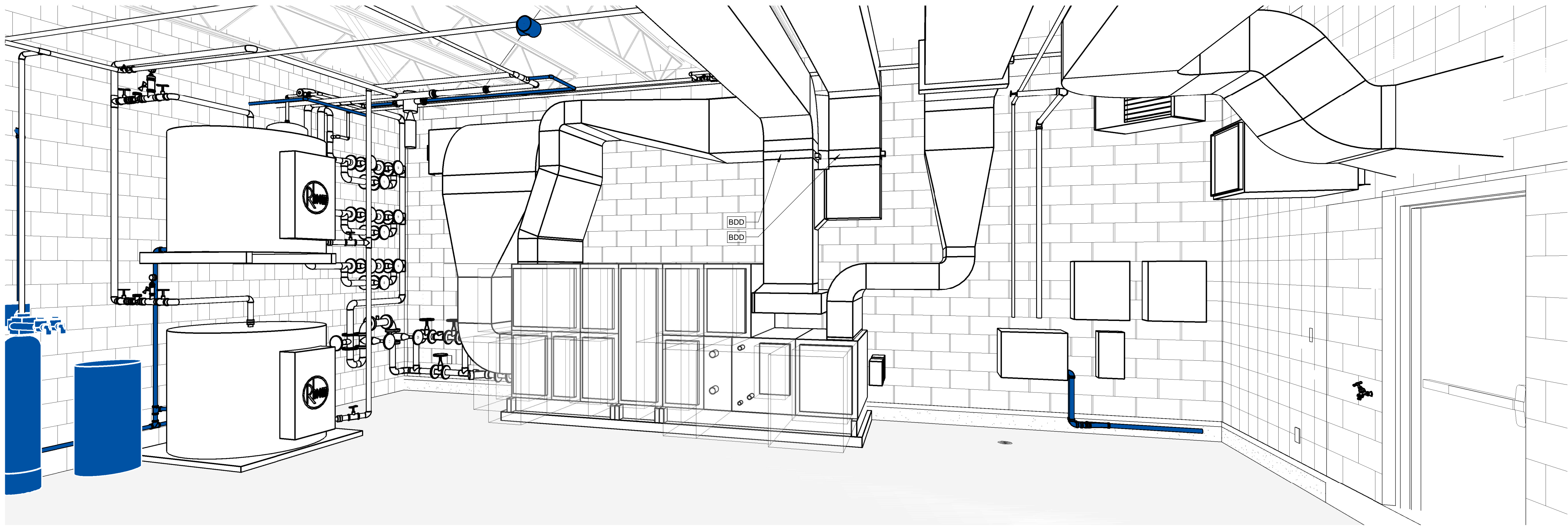
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DESIGN, CONSTRUCTION & ASSET MANAGEMENT

NEW SEATON PARAMEDIC STATION
AND TRAINING FACILITY IN PICKERING
MECHANICAL ISOMETRIC VIEWS

PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. PO61- 18- 01
CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 504	SHEET NO.



1 DOAS UNIT DUCTING
M-505

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REGISTERED PROFESSIONAL ENGINEER
SEP 23, 2021
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DESIGN, CONSTRUCTION & ASSET MANAGEMENT

NEW SEATON PARAMEDIC STATION
AND TRAINING FACILITY IN PICKERING
MECHANICAL ISOMETRIC VIEWS

PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. PO61- 18- 01
CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 505	SHEET NO.

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PROFESSIONAL ENGINEER
SEP 23, 2021
R. S. CARKNER
480162353
PROVINCE OF ONTARIO

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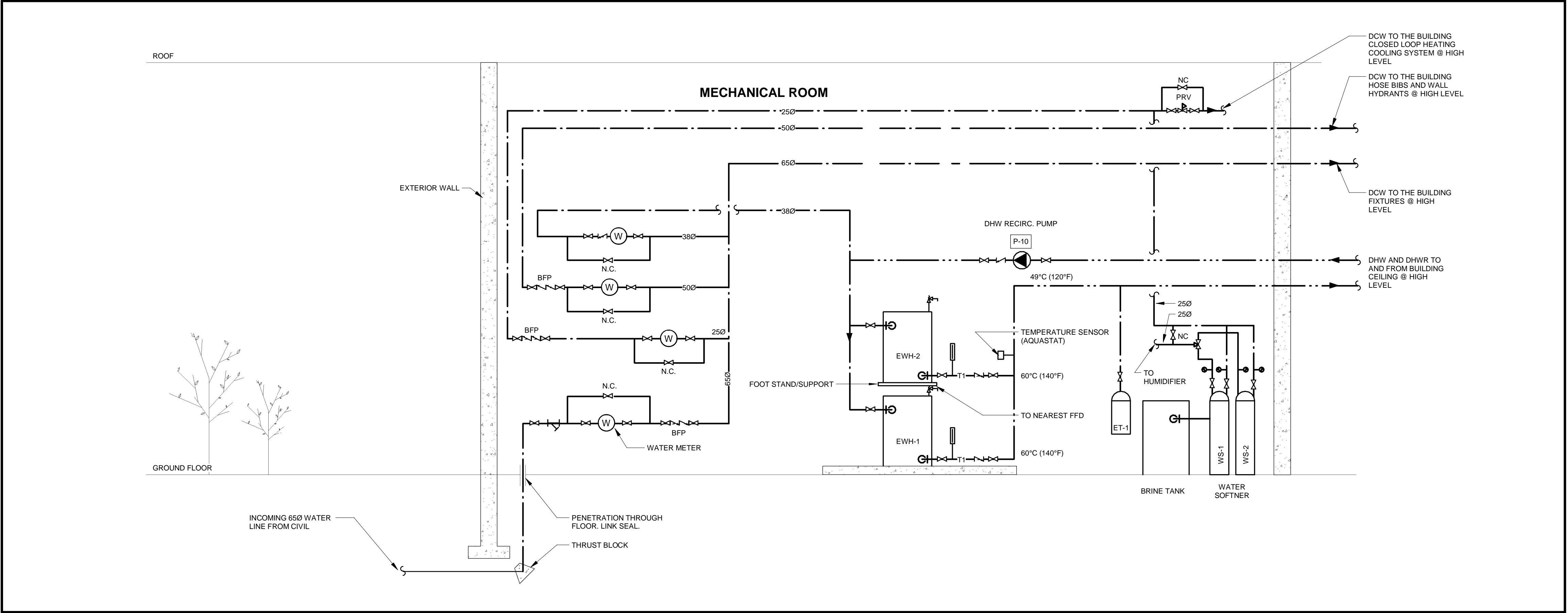
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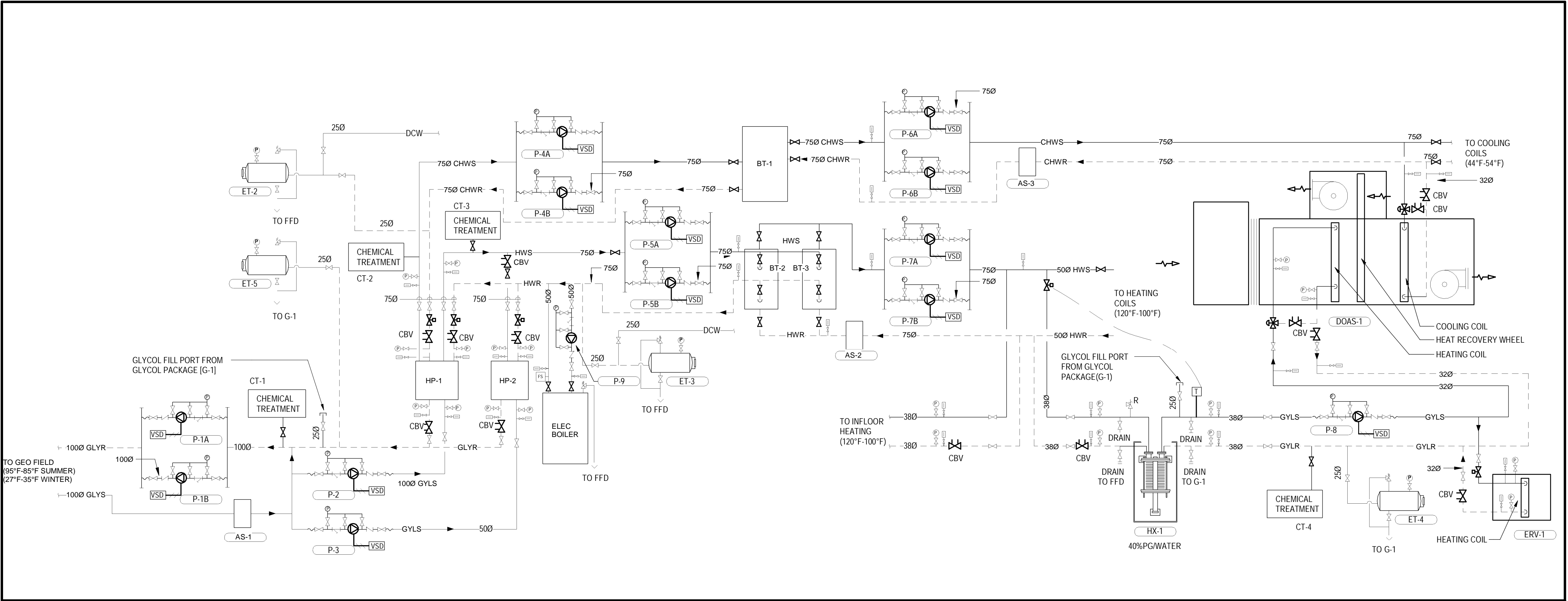
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NEW SEATON PARAMEDIC STATION AND TRAINING FACILITY IN PICKERING MECHANICAL SCHEMATICS I

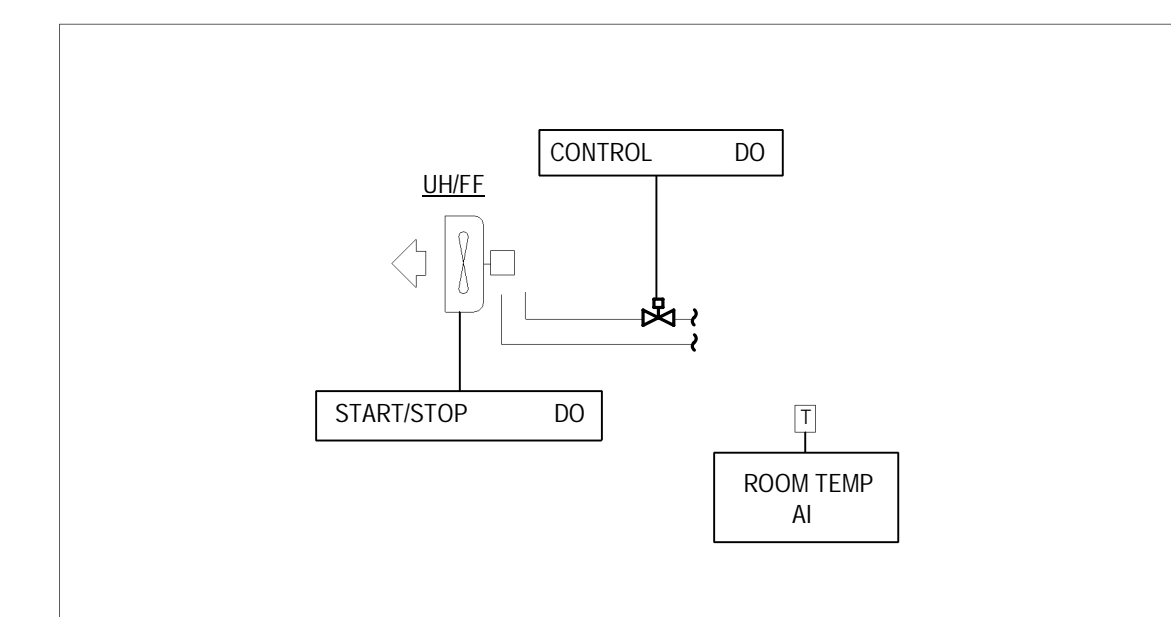
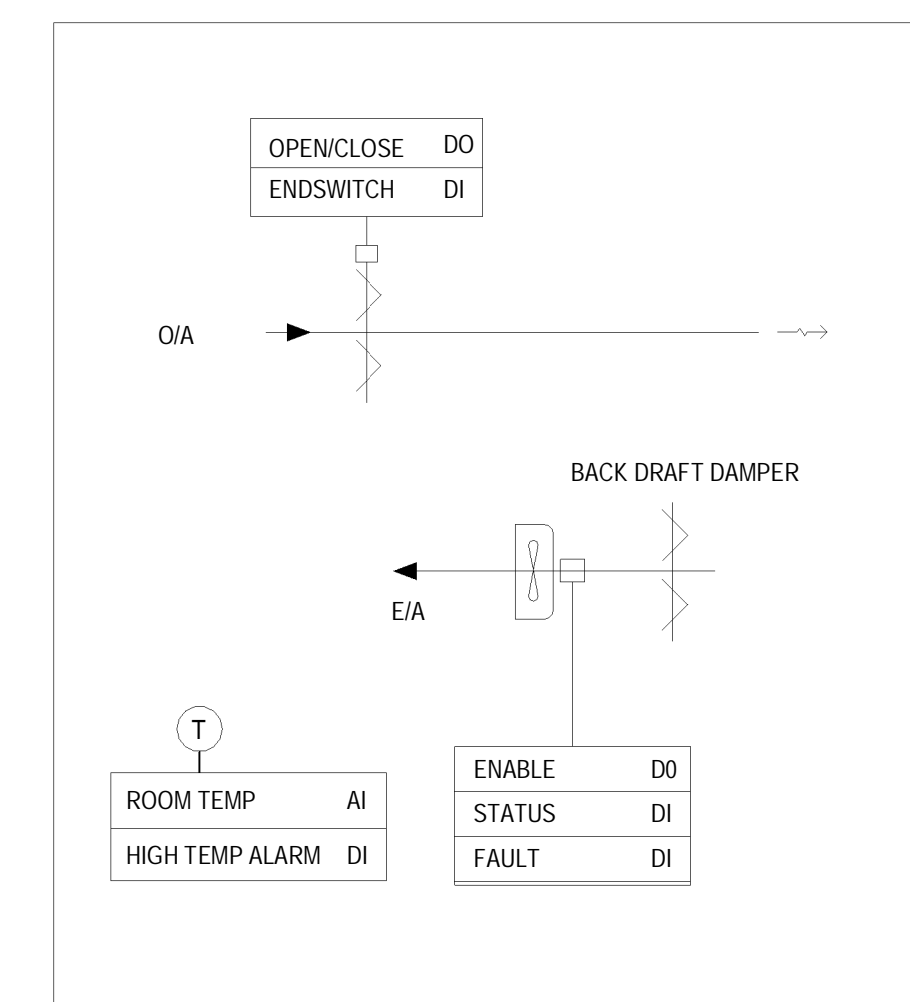
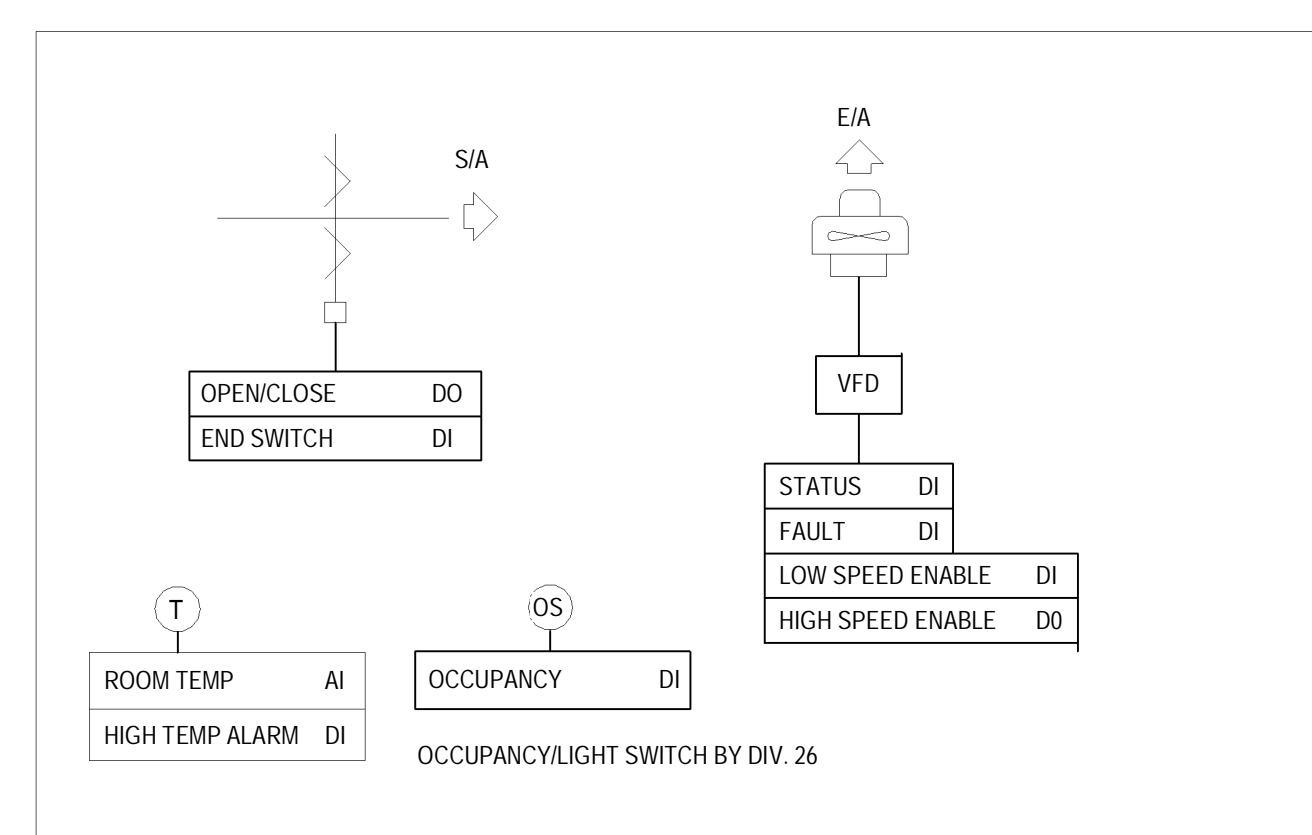
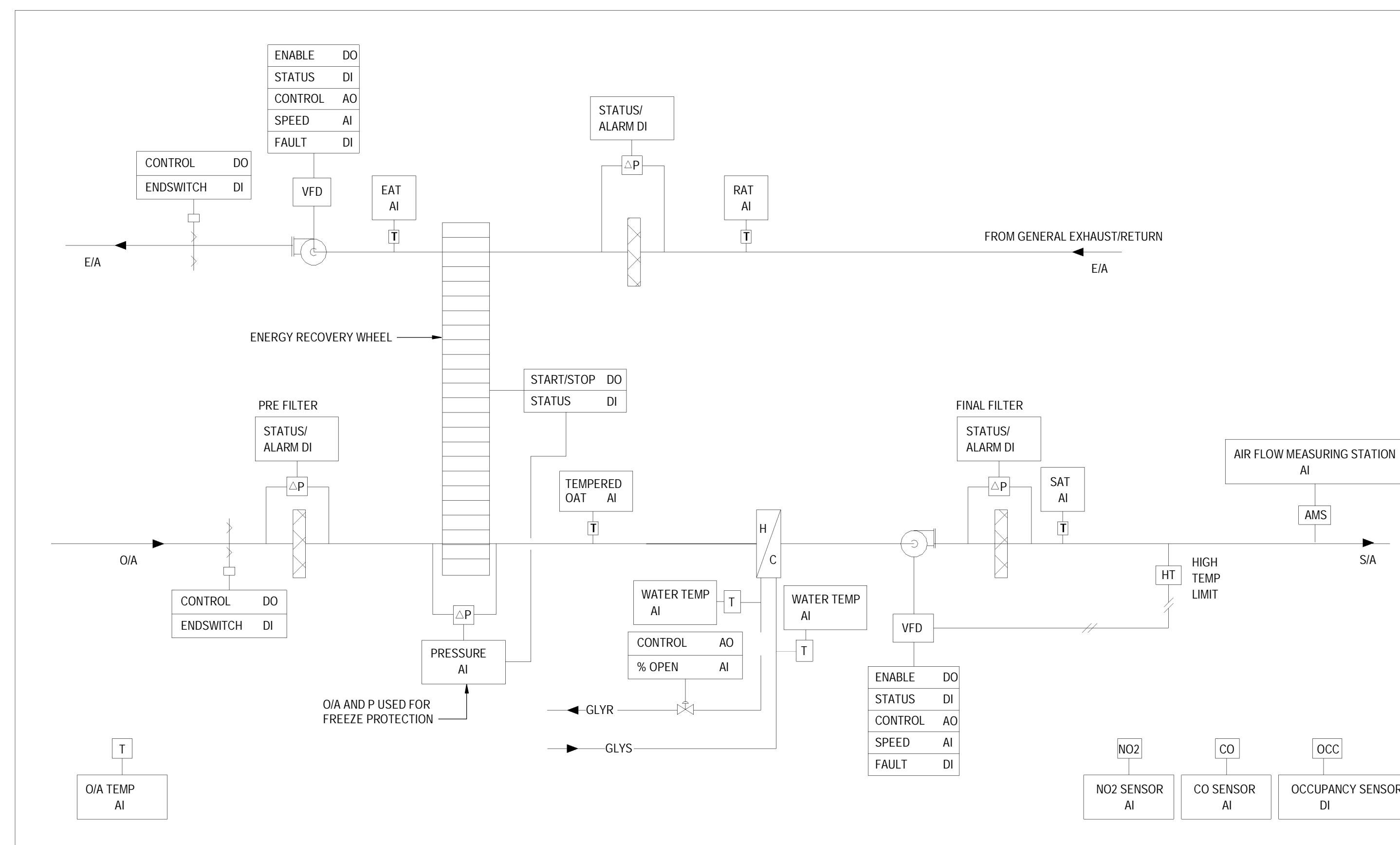
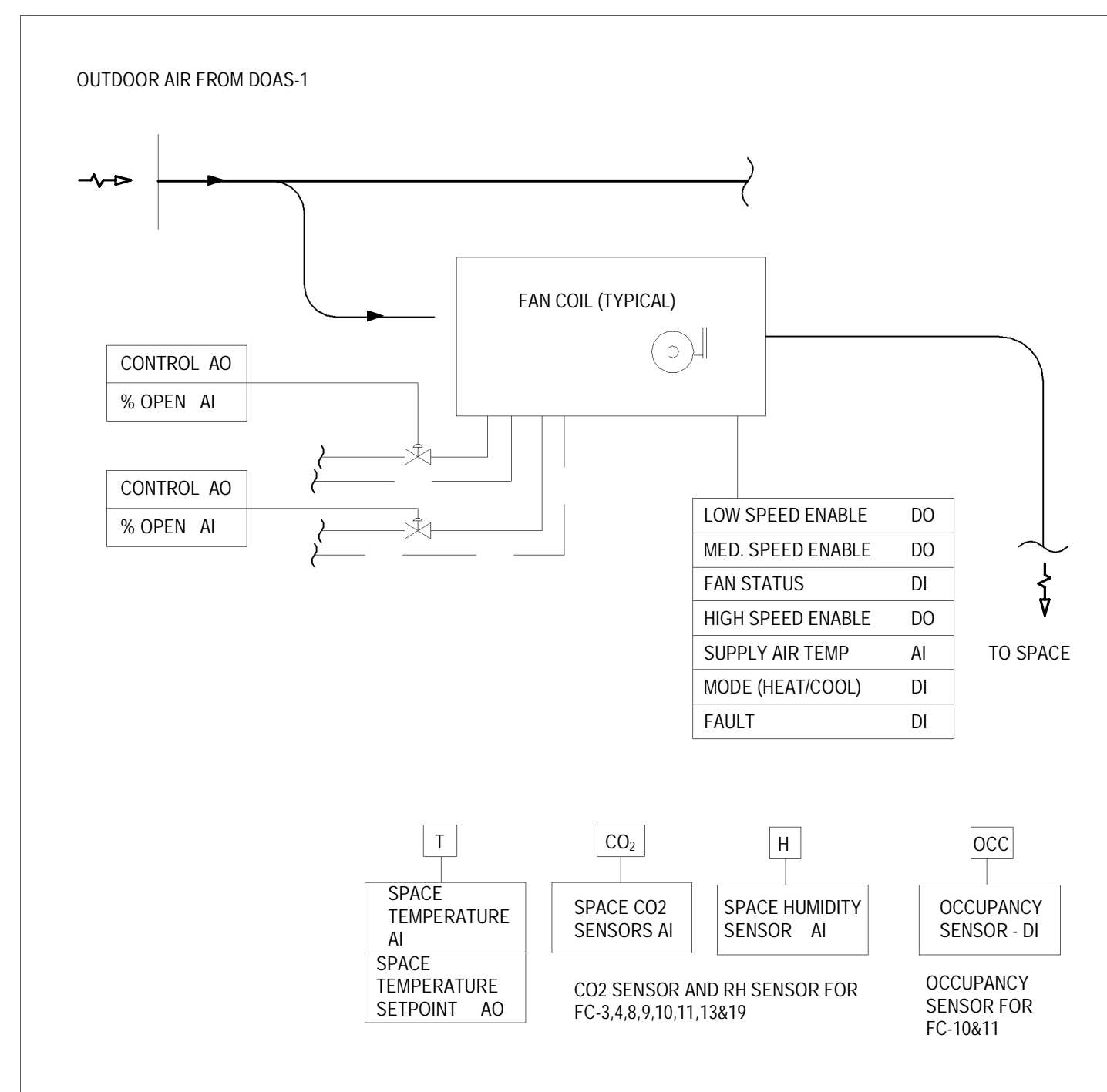
PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. PO61- 18- 01
CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 600	SHEET NO.



1 DOMESTIC WATER SCHEMATIC
Scale: NTS



2 HYDRONIC SCHEMATIC
Scale: N.T.S.



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NEW SEATON PARAMEDIC STATION
AND TRAINING FACILITY IN PICKERING
MECHANICAL SCHEMATICS III

PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. P061- 18- 01
CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 602	SHEET NO.

Seaton Paramedics

WATER SOFTENER SCHEDULE																	
TAG	LOCATION	MANUFACTURER	MODEL	Flow Rate						Brine Tank Size		Weight	Electrical			REMARKS	
				Minimum		Max Continuous		Backwash		DxH			Input	Output	Output		
				LPM	GPM	LPM	GPM	LPM	GPM	(mm x mm)	(in x in)	Kg					LBS
WS-1 & 2	MECHANICAL ROOM [124]	EXCALIBUR	EWS SD 130	3.4	0.9	18.9	5	10.2	2.7	450 x 840	18 x 33	82	180	120V/60	12 VAC	500 mA	-Refer to specifications section C/W Controls.

BUFFER TANKS									
TAG	LOCATION	MANUFACTURER	SYSTEM	MODEL	VOLUME	# OF PORTS	SHIP WT.		REMARKS
							Kg	LBS	
BT-1	MECH ROOM	AMTROL	CHILLED	HWBT300-4/4-125	300 GAL	4	342	753	
BT-2	MECH ROOM	AMTROL	HEATING	HWBT300-4/4-125	300 GAL	4	342	753	
BT-3	MECH ROOM	AMTROL	HEATING	HWBT300-4/4-125	300 GAL	4	342	753	

SPLIT AIR CONDITIONING SYSTEM SCHEDULE											
INDOOR UNIT											
UNIT No.	LOCATION / AREA SERVED	ARRANGEMENT	MANUFACTURER	MODEL	SEER	RATED COOLING CAPACITY KW (MBH)	REFRIGERANT	OPERATING WEIGHT Kg (Lbs)	POWER SUPPLY V / PH / Hz	MCA	REMARKS
AC-1	IT ROOM [125]	WALL MOUNTED	mitsubishi	PKA-A24KA7	21.4	7 (24)	R410a	21 (46)	FROM CU-1	1	PROVIDE POWER AND CONTROL INTERLOCKS WITH REMOTE CONDENSER, COMPLETE WITH PROGRAMMABLE WIRED REMOTE CONTROLLER.
OUTDOOR UNIT											
UNIT No.	LOCATION	ARRANGEMENT	MANUFACTURER	MODEL	SEER	RATED COOLING CAPACITY KW (MBH)	REFRIGERANT	OPERATING WEIGHT Kg (Lbs)	POWER SUPPLY V / PH / Hz	MCA / MOP	REMARKS
CU-1	EXTERIOR	OUTDOOR ROOF MOUNTED	MITSUBISHI	PUY-A24NH7	21.4	7 (24)	R410a	69 (153)	208 / 1 / 60	19 / 26	INTERLOCK WITH ASSOCIATED INDOOR UNIT. COMPLETE WITH VARIABLE SPEED INVERTER COMPRESSOR, WEATHERPROOF FACTORY DISCONNECT SWITCH, 600MM (24") HIGH STAND AND FRONT, REAR AND SIDE WIND BAFFLES FOR COOLING OPERATION TO -40°C (-40°F).

[illegible]

AIR HANDLING UNIT SCHEDULE (PART 2)																																							
TAG	RECOVERY WHEEL MANUFACTURER/ MODEL	TYPE	ENERGY RECOVERY WHEEL PERFORMANCE																		HEATING PERFORMANCE																		
			ELECTRICAL		WINTER CAPACITY		SUMMER CAPACITY		RETURN AIR TEMP. BEFORE HEAT EXCHANGER IN WINTER		EXHAUST AIR TEMP. AFTER HEAT EXCHANGER IN WINTER		OUTDOOR AIR TEMP. BEFORE HEAT EXCHANGER IN WINTER		RETURN AIR TEMP. BEFORE HEAT EXCHANGER IN SUMMER		EXHAUST AIR TEMP. AFTER HEAT EXCHANGER IN SUMMER		OUTDOOR AIR TEMP. BEFORE HEAT EXCHANGER IN SUMMER		EFFECTIVENESS		CAPACITY		AIR SIDE						FLUID SIDE						FLUID		
			HP	POWER FEED	KW	MBH	KW	MBH	C	F	C	F	C	F	C	F	C	F	C	F	SENSIBLE	TOTAL	KW	MBH	EAT		LAT		EWIT		LWIT		FLOW		PRESS. DROP				
																							%	%			C	F	C	F	C	F	C	F	LPS	GPM		M	FT
DOAS-1	AIRTOR SXA-1200-MW	ALUMINUM	0.13 VFD	2083/80	50.1	171.0	21.7	74.0	21.1	70	-13.2	8.2	-21.7	-7.0	23.9	75	32.2	90	32.2	90.0	77.2	77.8	27.2	93.0	0	32.0	22.9	73.2	47.8	118.0	36.7	98.0	0.6	10	0.58	1.90		40% PROP.	
ERV-1	AIRTOR SXA-1200-MW	ALUMINUM	0.13 VFD	2083/80	61.5	210.0	26.1	88.0	20.0	68	-11.1	12	-21.7	-7.0	26.7	80	32.8	91	32.2	90.0	76.4	75.8	32.5	111.0	-1.1	30.0	21.0	69.7	47.8	118.0	36.7	98.0	0.8	12.0	1.49	4.90	40% PROP.		

ELECTRIC BOILER SCHEDULE																
TAG	MANUFACTURER / MODEL	LOCATION	SERVICE	MAXIMUM CAPACITY		MINIMUM CAPACITY		ELEMENTS QTY:	FLUID TYPE	WATER FLOW RATE		POWER	FLA	OPERATING WEIGHT		REMARKS
				KW	MBH	KW	MBH			LPS	GPM			KG	LBS	
B-1	PRECISION BOILERS / PCW1-0948-800-160	MECHANICAL ROOM [124]	BUILDING HEATING BACKUP	94	321	24	80	4	WATER	2.0	32	600/3/60	90	355	783	COMPLETE WITH DISCONNECT SWITCH, TEMPERATURE LIMIT SWITCH WITH RESET, LOW WATER CUTOFF, HIGH/LOW PRESSURE SWITCH, FLOW SWITCH, TEMPERATURE SETPOINT, SAFETY RELIEF VALVE, TEMPERATURE AND PRESSURE GAUGE, DRAIN VALVE AND 4-STAGE CONTROL. COMMUNICATING WITH BAS.

EXPANSION TANK SCHEDULE											
TAG	MANUFACTURER	MODEL	SERVICE	FLUID TYPE	TANK VOLUME		ACCEPTANCE VOLUME		SHIPPING WEIGHT		REMARKS
					L	GAL	L	GAL	KG	LBS	
ET-1	BELL AND GOSSETT	PTA-20V	POTABLE HOT WATER	WATER	30.3	8.0	20.1	5.3	15.5	34.0	-
ET-2	BELL AND GOSSETT	HFT-15	CHILLED WATER LOOP	WATER	7.6	2.0	3.8	1.0	2.3	5.0	-
ET-3	BELL AND GOSSETT	D-60	HEATING WATER LOOP	WATER	122.2	33.6	42.8	11.3	46.8	103.0	-
ET-4	BELL AND GOSSETT	D-15	HEATING GLYCOL LOOP	40% P.G.	30.3	8.0	3.1	2.4	16.8	37.0	-
ET-5	BELL AND GOSSETT	D-40	GEOFLIED GLYCOL LOOP	25% P.G.	82.1	21.7	42.8	11.3	37.3	82.0	-

HEAT EXCHANGER SCHEDULE																													
TAG	MANUFACTURER	MODEL	TYPE	HEAT EXCHANGED		COLD SIDE										HOT SIDE										EFFECTIVE AREA	OPERATING WEIGHT		REMARKS
						EWT		LWT		FLOW		PRESS. DROP		FLUID TYPE	EWT		LWT		FLOW		PRESS. DROP		FLUID TYPE						
KW	BTU/H	C	F	C	F	LPS	GPM	KPA	PSI	FLUID TYPE	C	F	C		F	LPS	GPM	KPA	PSI	FLUID TYPE	SQFT	KG		LBS					
HX-1	XYLEM	BP422-40	BRAZED PLATE	58.2	198516	36.7	98	47.6	117.6	1.39	22.0	9.2	1.33	40%PG	37.8	100	48.9	120	1.26	20.0	7.3	1.06	WATER	40.39	35.4	77.9			

DOMESTIC WATER HEATER SCHEDULE															
TAG	LOCATION	MANUFACTURER	MODEL	TYPE	CAPACITY		RECOVERY		NO. OF ELEMENTS	WATTAGE PER ELEMENT	EFFICIENCY		OPER. WT.	ELEC.	REMARKS
					L	USG	LPH	GPH			PERCENT	Kg			
EWH-1 EWH-2	MECHANICAL ROOM [124]	RHEEM	E50 (A) -18-G	TANK-HIGH EFFICIENCY	189	50	83	313	6	3000	98.0	145	320	208/3/60	-Refer to specifications C/W Controls.

AIR SEPARATOR								REMARKS
TAG	LOCATION	MANUFACTURER	SYSTEM	MODEL	RATED FLOW	MAX PRESS. DROP	SHIP WT. KGS	
AS-1	MECH ROOM	AMTROL	GEO	4-AS	130 GPM	3 FTHD	32	70 INSTALL WITH REQUIRED MAINTENANCE CLEARANCE
AS-2	MECH ROOM	AMTROL	HEATING	3-AS	100 GPM	0.7 FTHD	27	
AS-2	MECH ROOM	AMTROL	CHILLED	3-AS	100 GPM	0.7 FTHD	27	

ALL MEASUREMENTS ARE TO BE VERIFIED BY THE CONTRACTOR ON SITE AND ANY DISCREPANCIES ARE TO BE REPORTED BEFORE PROCEEDING WITH THE WORK. THE REGION OF DURHAM ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE LOCATION OF EXISTING SERVICES AS INDICATED ON THIS DRAWING. DO NOT SCALE DRAWINGS.

1890 Fifth Concession Rd

[illegible]

NO.	DATE.	NAME	REVISIONS
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DESIGN BY: Designer	SCALE: 1 : 2
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DRAWN BY: Author	DATE: 12/24/20
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CHECKED BY: Checker	CONSULTANT PROJECT NO. 60611569
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APPROVED BY: Approver CLIENT FILE No.: 811/20



THE REGIONAL MUNICIPALITY
OF DURHAM
WORKS DEPARTMENT
DESIGN, CONSTRUCTION & ASSET MANAGEMENT

NEW SEATON PARAMEDIC STATION AND TRAINING FACILITY IN PICKERING MECHANICAL SCHEDULES

PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. P061- 18- 01
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CONTRACT NO.	DRAWING NO.	SHEET NO.
T- 1160- 2021	M- 700	

MOTORIZED DAMPER SCHEDULE													
TAG	MANUFACTURER / MODEL	LOCATION	FUNCTION	DIMENSIONS (WxH)		MINIMUM AIR FLOW		MAXIMUM AIR FLOW		MAXIMUM VELOCITY		ACCESSORIES	
				MM	INS	LPS	CFM	LPS	CFM	MPS	FPM		
MD-1	NAILOR 2010	MECHANICAL ROOM	INTAKE AIR OF EF-1	750 x 600	30 x 24	0	0	637	1,350	1.4	270	LOW LEAKAGE ALUMINUM CONTROL DAMPER WITH PARALLEL BLADES, INSULATED FRAME AND BLADES AND STAINLESS STEEL 304 LINKAGE. COMPLETE WITH 24VAC ON/OFF ACTUATOR, END SWITCH AND SPRING RETURN.	
MD-2	NAILOR 2010	ELECTRICAL ROOM	INTAKE AIR OF EF-2	1000 x 600	40 x 24	0	0	944	2,000	1.5	300	LOW LEAKAGE ALUMINUM CONTROL DAMPER WITH PARALLEL BLADES, INSULATED FRAME AND BLADES AND STAINLESS STEEL 304 LINKAGE. COMPLETE WITH 24VAC ON/OFF ACTUATOR, END SWITCH AND SPRING RETURN.	
MD-3	NAILOR 1020	ELECTRICAL ROOM	EXHAUST AIR OF WASHROOMS	400 x 150	16 x 6	0	0	175	370	2.8	555	LOW LEAKAGE GALVANIZED STEEL CONTROL DAMPER WITH OPPOSED BLADES. COMPLETE WITH 24VAC MODULATING ACTUATOR AND SPRING RETURN.	
MD-4	NAILOR 1020	ELECTRICAL ROOM	GENERAL RETURN OF [DOAS-1]	500 x 250	20 x 10	0	0	580	1,230	4.5	885	LOW LEAKAGE GALVANIZED STEEL CONTROL DAMPER WITH OPPOSED BLADES. COMPLETE WITH 24VAC MODULATING ACTUATOR AND SPRING RETURN.	
MD-5	NAILOR 1020	ELECTRICAL ROOM	EXHAUST AIR OF WASHROOMS	400 x 150	16 x 6	212	450	212	450	3.4	675	LOW LEAKAGE GALVANIZED STEEL CONTROL DAMPER WITH OPPOSED BLADES. COMPLETE WITH 24VAC MODULATING ACTUATOR AND SPRING RETURN.	
FS/D	NAILOR 1222-2-12x08-V-BEL-120 I-24-250-ERL-DSDNF-EXT-CL-FL-12-DTS	CLASSROOMS	[DOAS-1] SUPPLY AIR TO CLASSROOMS	300 x 200	12 x 8	0	0	156	330	2.5	490	ULC LISTED ULTRA LOW LEAKAGE GALVANIZED STEEL COMBINATION FIRE/SMOKE DAMPER WITH AIRFOIL BLADES AND FACTORY SLEEVE. LABELLED FOR 1.5 HR. COMPLETE WITH BELIMO 120VAC ACTUATOR, ERL (ELECTRIC RESETTABLE LINK) HEAT RESPONSIVE DEVICE AND SPRING RETURN FAIR CLOSE. COMPLETE WITH 120VAC FACTORY MOUNTED CUD SMOKE DETECTOR WITH PHOTOELECTRIC SENSOR, FOR NO FLOW CONDITION. WIRING TO FAC BY DIV. 26.	
FS/D	NAILOR 1221-1-12x12-V-BEL-120 I-24-250-ERL-DSDNF-EXT-CL-FL-12-DTS	CLASSROOMS	RETURN AIR FROM CLASSROOMS TO CORRIDOR	300 x 300	12 x 12	0	0	156	330	1.7	330	ULC LISTED ULTRA LOW LEAKAGE GALVANIZED STEEL COMBINATION FIRE/SMOKE DAMPER WITH AIRFOIL BLADES AND FACTORY SLEEVE. LABELLED FOR 1.5 HR. COMPLETE WITH BELIMO 120VAC ACTUATOR, ERL (ELECTRIC RESETTABLE LINK) HEAT RESPONSIVE DEVICE AND SPRING RETURN FAIR CLOSE. COMPLETE WITH 120VAC FACTORY MOUNTED CUD SMOKE DETECTOR WITH PHOTOELECTRIC SENSOR, FOR NO FLOW CONDITION. WIRING TO FAC BY DIV. 26.	

TAG	FIXTURE NAME	SANITARY WASTE		SANITARY VENT		DWWS		DHWS		TEMPERED		REMARKS
		MM	INS	MM	INS	MM	INS	MM	INS	MM	INS	
W-1	BARRIER FREE WALL HUNG FLUSH VALVE WATER CLOSET	75	3	38	1.5	25	1	-	-	-	-	
W-2	GENERAL USE WALL HUNG FLUSH VALVE WATER CLOSET	75	3	38	1.5	25	1	-	-	-	-	
U-1	BARRIER FREE WALL HUNG FLUSH VALVE URINAL	50	2	38	1.5	19	0.75	-	-	-	-	
L-1	BARRIER FREE COUNTERTOP LAVATORY	32	1.25	32	1.25	13	0.5	13	0.5	13	0.5	TEMPERED WATER FROM THERMOSTATIC MIXING VALVE
L-2	BARRIER FREE WALL HUNG LAVATORY	32	1.25	32	1.25	13	0.5	13	0.5	13	0.5	TEMPERED WATER FROM THERMOSTATIC MIXING VALVE
S-1	SINGLE COMPARTMENT STAINLESS STEEL SINK	38	1.5	38	1.5	13	0.5	13	0.5	-	-	
S-2	DOUBLE COMPARTMENT STAINLESS STEEL SINK	2@ 38	2@ 1.5	38	1.5	13	0.5	13	0.5	-	-	
S-3	JANITOR'S SERVICE SINK	75	3	38	1.5	13	0.5	13	0.5	-	-	
WBF-1	BARRIER FREE DRINKING FOUNTAIN	32	1.25	32	1.25	13	0.5					
E-1	EMERGENCY EYE/FACE WASH	38	1.5	38	1.5	19	0.75	19	0.75	19	0.75	TEMPERED WATER FROM THERMOSTATIC MIXING VALVE
FD	FLOOR DRAIN	75	3	38	1.5	9	0.38	-	-	-	-	NON-POTABLE SUPPLY FROM TSP
FFD	FUNNEL FLOOR DRAIN	75	3	38	1.5	9	0.38	-	-	-	-	NON-POTABLE SUPPLY FROM TSP
TD	TRENCH DRAIN	75	3	38	1.5	9	0.38	-	-	-	-	NON-POTABLE SUPPLY FROM TSP
TSP	TRAP SEAL PRIMER	-	-	-	-	19 9"	0.75 0.38"	-	-	-	-	* PER FD+FFD
WH-1	EXTERIOR NON-FREEZE WALL HYDRANT	-	-	-	-	19	0.75	-	-	-	-	
WH-2	INTERIOR DOUBLE TEMPERATURE WALL HYDRANT	-	-	-	-	19	0.75	19	0.75	-	-	
HB-1	HOSE-BIBB	-	-	-	-	19	0.75	-	-	-	-	
PH-1	POST HYDRANT	-	-	-	-	19	0.75	-	-	-	-	

DIFFUSER, REGISTER & GRILLE SCHEDULE										
TAG	KRUEGER MODEL NO.	APPLICATION	SIZE LENGTH x WIDTH		NECK SIZE		AIR FLOW MINIMUM / MAXIMUM		MAXIMUM NC RANGE	REMARKS
			MM	INS	MM	INS	LPS	CFM		
A1	DMD-18-08-XX-01-44 [X = VARIES]	DRUM LOUVRE	450	18	450	18	203	430	-	DUCT MOUNTED DRUM LOUVRE WITH ADJUSTABLE HEAVY GAUGE ALUMINUM VANES, HEAVY GAUGE ALUMINUM DRUM AND WHITE FINISH. COMPLETE WITH DAMPER EXTRACTOR.
A2	DMD-12-04-XX-01-44 [X = VARIES]	DRUM LOUVRE	300	12	300	12	78	165	-	DUCT MOUNTED DRUM LOUVRE WITH ADJUSTABLE HEAVY GAUGE ALUMINUM VANES, HEAVY GAUGE ALUMINUM DRUM AND WHITE FINISH. COMPLETE WITH DAMPER EXTRACTOR.
A3	1900-36-2-50-C-E-00-44 & 1900BOOT-36-2-50-B-C-E-00-G-01	LINEAR SLOT DIFFUSER	900	36	200	8	28	60	-	ALUMINUM LINEAR SLOT SUPPLY DIFFUSER WITH 2 SLOTS AND 25MM SLOT WIDTH. CONCEALED SURFACE MOUNT, BOTH END CAPS AND A WHITE FINISH. COMPLETE WITH GALVANIZED STEEL PLENUM BOOT AND PERFORMANCE BAFFLE.
A4	1900-48-2-50-C-E-00-44 & 1900BOOT-48-2-50-10-C-E-00-G-01	LINEAR SLOT DIFFUSER	1200	48	250	10	38	80	-	ALUMINUM LINEAR SLOT SUPPLY DIFFUSER WITH 2 SLOTS AND 25MM SLOT WIDTH. CONCEALED SURFACE MOUNT, BOTH END CAPS AND A WHITE FINISH. COMPLETE WITH GALVANIZED STEEL PLENUM BOOT AND PERFORMANCE BAFFLE.
B1	EGS-24x06-F23-NONE-00-00-00-44	RETURN AIR GRILLE	600	24	GRILLE SIZE		24	50	-	ALUMINUM CORE EGG-GRATE RETURN GRILLE WITH 12MMx12MMx12MM (1/2"x1/2"x1/2") CORE STYLE, LAY-IN T-BAR ALUMINUM FRAME, NO SCREW HOLES AND WHITE FINISH.
B2	EGS-24x10-F23-NONE-00-00-00-44	RETURN AIR GRILLE	600	24	GRILLE SIZE		189	400	-	ALUMINUM CORE EGG-GRATE RETURN GRILLE WITH 12MMx12MMx12MM (1/2"x1/2"x1/2") CORE STYLE, LAY-IN T-BAR ALUMINUM FRAME, NO SCREW HOLES AND WHITE FINISH.
B3	EGS-24x24-F23-NONE-00-00-00-44	RETURN AIR GRILLE	600	24	GRILLE SIZE		425	900	-	ALUMINUM CORE EGG-GRATE RETURN GRILLE WITH 12MMx12MMx12MM (1/2"x1/2"x1/2") CORE STYLE, LAY-IN T-BAR ALUMINUM FRAME, NO SCREW HOLES AND WHITE FINISH.
D1	5600A-08-08-00-10	DOOR GRILLE	200	8	GRILLE SIZE		-	-	-	ALUMINUM DOOR GRILLE WITH 12MM (1/2") BLADE SPACING, CW ALUMINUM AUXILIARY FRAME, NO SCREW HOLES AND ALUMINUM FINISH.
E1	EGCS-08-06-F22-NONE-00-00-00-44	EXHAUST AIR GRILLE	150	6	GRILLE SIZE		53	113	27	ALUMINUM CORE EGG-GRATE EXHAUST GRILLE WITH 32MM (1 1/4" FLANGE), 12MMx12MMx12MM (1/2"x1/2"x1/2") CORE STYLE, SURFACE MOUNT, NO SCREW HOLES AND WHITE FINISH. SITE VERIFY THE FLANGE REQUIREMENT BEFORE ORDERING.
E2	EGCS-12x12-F22-NONE-00-00-00-44	RETURN AIR GRILLE	300	12	GRILLE SIZE		142	300	-	ALUMINUM CORE EGG-GRATE EXHAUST GRILLE WITH 32MM (1 1/4" FLANGE), 12MMx12MMx12MM (1/2"x1/2"x1/2") CORE STYLE, SURFACE MOUNT, NO SCREW HOLES AND WHITE FINISH. SITE VERIFY THE FLANGE REQUIREMENT BEFORE ORDERING.
E3	9S80-H-304-F22-NONE-01-00-00-44	EXHAUST AIR GRILLE	250 W 450 H	10 W 18 H	GRILLE SIZE		156 472	330 1,000	27	SINGLE DEFLECTION STAINLESS STEEL 304 EXHAUST GRILLE WITH 19MM (3/4") BLADE SPACING, 45 DEG HORIZONTAL BLADES, SURFACE MOUNT, COUNTERSUNK STAINLESS STEEL SCREWS AND WHITE FINISH.
E4	EGCS-24x6-F23-24x24-00-00-00-44	RETURN AIR GRILLE	600	24	GRILLE SIZE		142	300	-	ALUMINUM CORE EGG-GRATE EXHAUST GRILLE WITH 32MM (1 1/4" FLANGE), 12MMx12MMx12MM (1/2"x1/2"x1/2") CORE STYLE, LAY-IN T-BAR FRAME, 600MM x 600 MM PANEL, NO SCREW HOLES AND WHITE FINISH. SITE VERIFY THE FLANGE REQUIREMENT BEFORE ORDERING.
M1	51450-04-10-F23-24x24-00-00-44	4 WAY SUPPLY AIR DIFFUSER	600	24	250 ROUND	10 ROUND	52	110	-	ALUMINUM SURFACE FACE DROP CONE DIFFUSER WITH 3 CONES AND INTEGRAL EARTHQUAKE TABS. LAY-IN T-BAR FRAME, 600MM x 600 MM PANEL, NECK MOUNTED ROUND DAMPER ADJUSTABLE FROM FACE OF THE DIFFUSER, 250MM (10") ROUND INLET AND WHITE FINISH.
M2	51450-04-08-F23-24x24-00-00-44	4 WAY SUPPLY AIR DIFFUSER	600	24	200 ROUND	8 ROUND	33	70	-	ALUMINUM SURFACE FACE DROP CONE DIFFUSER WITH 3 CONES AND INTEGRAL EARTHQUAKE TABS. LAY-IN T-BAR FRAME, 600MM x 600 MM PANEL, NECK MOUNTED ROUND DAMPER ADJUSTABLE FROM FACE OF THE DIFFUSER, 200MM (8") ROUND INLET AND WHITE FINISH.
M3	51450-04-06-F23-24x24-00-00-44	4 WAY SUPPLY AIR DIFFUSER	600	24	150 ROUND	6 ROUND	14	30	-	ALUMINUM SURFACE FACE DROP CONE DIFFUSER WITH 3 CONES AND INTEGRAL EARTHQUAKE TABS. LAY-IN T-BAR FRAME, 600MM x 600 MM PANEL, NECK MOUNTED ROUND DAMPER ADJUSTABLE FROM FACE OF THE DIFFUSER, 150MM (6") ROUND INLET AND WHITE FINISH.
N1	S80-H-16x12-F22-NONE-01-00-00-44	RETURN AIR GRILLE	400 W 300 H	16 W 12 H	GRILLE SIZE		283 434	600 920	13 23	STEEL SINGLE DEFLECTION RETURN GRILLE WITH 19MM (3/4") BLADE SPACING, 0 DEG HORIZONTAL BLADES, SURFACE MOUNT, COUNTERSUNK SCREWS AND WHITE FINISH.
N2	880-V-20x12-F22-NONE-01-00-00-44	SUPPLY AIR GRILLE	500 W 300 H	20 W 12 H	GRILLE SIZE		236 510	500 1,080	27	STEEL DOUBLE DEFLECTION SUPPLY GRILLE WITH 19MM (3/4") BLADE SPACING, SURFACE MOUNT, COUNTERSUNK SCREWS AND WHITE FINISH.

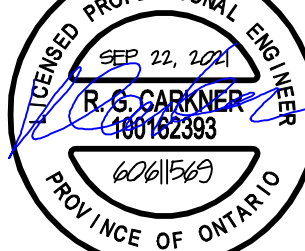
ELECTRIC SNOW MELT SYSTEM SCHEDULE											
CONTROL PANEL TAG	LOCATION	AREA SERVED	RAYCHEM PRODUCT NO.	EMBEDDED MATERIAL	CIRCUIT QUANTITY	HEAT LOAD		ELECTRICAL		POWER	REMARKS
						KW	MBH	FEED	DISTRIBUTION	KW	
SM-1	MECHANICAL ROOM [124]	[131] VEHICLE BAY APRONS	SMPG3-208-3-2/3P(40)-1-100	ASPHALT	6 (3 + 3)	33.0	112629	208/3/60	208/3/60	33.0	THREE PHASE POWER DISTRIBUTION PANEL FOR THREE PHASE HEATING CABLES, COMPLETE WITH MAIN CIRCUIT BREAKER, INTERNAL TRANSFORMER, HDPE JACKETED COPPER SHEATHED HEATING CABLES, AERIAL SNOW SENSOR AND FOUR (4) PAVEMENT MOUNTED TEMPERATURE SENSORS.
SM-2	MECHANICAL ROOM [124]	PEDESTRIAN ENTRANCES [101], [122] [123], [124], [134] & [107]	SMPG1-208-3-4/2P(50)-1-200	CONCRETE	5 (2 + 1 + 1 + 1)	27.4	93516	208/3/60	208/1/60	27.4	THREE PHASE POWER DISTRIBUTION PANEL FOR SINGLE PHASE HEATING CABLES, COMPLETE WITH MAIN CIRCUIT BREAKER, INTERNAL TRANSFORMER, HDPE JACKETED COPPER SHEATHED HEATING CABLES, AERIAL SNOW SENSOR AND FOUR (4) PAVEMENT MOUNTED TEMPERATURE SENSORS.

ALL MEASUREMENTS ARE TO BE VERIFIED BY THE CONTRACTOR ON SITE AND ANY DISCREPANCIES ARE TO BE REPORTED BEFORE PROCEEDING WITH THE WORK. THE REGION OF DURHAM ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE LOCATION OF EXISTING SERVICES AS INDICATED ON THIS DRAWING. DO NOT SCALE DRAWINGS.

1890 Fifth Concession Rd


CONSULTANT REVISIONS				
NO.	DATE.	NAME	REVISIONS	

PRIME CONSULTANT	
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<p>PRIME CONSULTANT</p> <h1 style="text-align: center;">AECOM</h1> <p>AECOM Canada Ltd. 50 Sportsworld Crossing Road, Suite 290 Kitchener, Ontario, N2P 0A4 519 650 5313 tel 519 650 3424 fax www.aecom.com</p>	
<p>SUB CONSULTANT</p>	

DESIGN BY: Designer	SCALE:
DRAWN BY: Author	DATE: 04/01/21
CHECKED BY: Checker	CONSULTANT PROJECT NO. 60611569
APPROVED BY: Approver	CLIENT FILE No.: 811/20

CONTRACT REVISIONS				
	0	09/22/21		ISSUED FOR TENDER
	NO	DATE	NAME	REVISIONS

 THE REGIONAL MUNICIPALITY

OF DURHAM
WORKS DEPARTMENT
DESIGN, CONSTRUCTION & ASSET MANAGEMENT

NEW SEATON PARAMEDIC STATION AND TRAINING FACILITY IN PICKERING MECHANICAL SCHEDULES

PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. P061- 18- 01
CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 701	SHEET NO.

FAN SCHEDULE																						
TAG	LOCATION	FUNCTION	FAN TYPE	MANUFACTURER	MODEL	MAXIMUM CAPACITY		MINIMUM CAPACITY		STATIC PRESSURE		OPERATING WEIGHT		FAN RPM	NOMINAL MOTOR POWER		POWER	SOUND DATA SONES	CONTROLLED BY	REMARKS		
						LPS	CFM	LPS	CFM	Pa	IN WC	KGS	LBS		W	MCA OR BHP						
EF-1	MECHANICAL ROOM [124]	GENERAL EXHAUST	CENTRIFUGAL CABINET FAN BELT DRIVE	PENNBARRY	ZEPHYR ZC12	639	1,350	213	450	75	0.3			500	250	0.2 BHP	120/160		THERMOSTAT & OCCUPANCY SENSOR BY DIV. 25	COMPLETE WITH 2-SPEED 2-WINDING TOTALLY ENCLOSED MOTOR, GRAVITY BACKDRAFT DAMPER, VIBRATION ISOLATION HANGER, FLEXIBLE DUCT CONNECTION, INLET GUARD, EPOXY COATING, INSULATION, DISCONNECT SWITCH AND THERMAL OVERLOAD PROTECTION.		
EF-2	ELECTRICAL ROOM [123]	GENERAL EXHAUST	CENTRIFUGAL CABINET FAN BELT DRIVE	PENNBARRY	ZEPHYR ZC15	1,183	2,500	1,183	2,500	87	0.35			1050	370	0.38 BHP	120/160		THERMOSTAT BY DIV. 25	COMPLETE WITH TOTALLY ENCLOSED MOTOR, GRAVITY BACKDRAFT DAMPER, VIBRATION ISOLATION HANGER, FLEXIBLE DUCT CONNECTION, INLET GUARD, EPOXY COATINGS, INSULATION, DISCONNECT SWITCH AND THERMAL OVERLOAD PROTECTION.		
EF-3	UNIVERSAL WASHROOM [119]	SANITARY EXHAUST	CENTRIFUGAL CEILING FAN DIRECT DRIVE	PENNBARRY	ZEPHYR Z1	24	50	24	50	31	0.125	3.6	8.0	1700	55	-	120/160	3.4	INTERLOCKED WITH LIGHTING BY DIV. 26	COMPLETE WITH UNIT MOUNTED SPEED CONTROLLER, VIBRATION ISOLATION HANGER AND FLEXIBLE DUCT CONNECTION.		
EF-4	DECONTAMINATION SHOWER [130]	SANITARY EXHAUST	CENTRIFUGAL CEILING FAN DIRECT DRIVE	PENNBARRY	ZEPHYR Z5H	70	150	70	150	31	0.125	6.4	14.0	1550	80	-	120/160	3.3	INTERLOCKED WITH LIGHTING BY DIV. 26	COMPLETE WITH GRAVITY BACKDRAFT DAMPER, UNIT MOUNTED SPEED CONTROLLER, VIBRATION ISOLATION HANGER, FLEXIBLE DUCT CONNECTION AND WCC06 CURB-MOUNTED ROOF CAP.		
EF-5	LINEN ROOM [134]	GENERAL EXHAUST	CENTRIFUGAL CEILING FAN DIRECT DRIVE	PENNBARRY	ZEPHYR Z1	24	50	24	50	31	0.125	3.6	8.0	1700	55	-	120/160	3.4	INTERLOCKED WITH LIGHTING BY DIV. 26	COMPLETE WITH GRAVITY BACKDRAFT DAMPER, UNIT MOUNTED SPEED CONTROLLER, VIBRATION ISOLATION HANGER, FLEXIBLE DUCT CONNECTION, B68 BRICK VENT AND METAL FACE GRILLE.		
EF-6	STORAGE ROOM [116]	GENERAL EXHAUST	CENTRIFUGAL CEILING FAN DIRECT DRIVE	PENNBARRY	ZEPHYR Z1	24	50	24	50	31	0.125	3.6	8.0	1700	55	-	120/160	3.4	INTERLOCKED WITH LIGHTING BY DIV. 26	COMPLETE WITH GRAVITY BACKDRAFT DAMPER, UNIT MOUNTED SPEED CONTROLLER, VIBRATION ISOLATION HANGER, FLEXIBLE DUCT CONNECTION AND WCC06 CURB-MOUNTED ROOF CAP.		
EF-7	JANITOR ROOM [120]	SANITARY EXHAUST	CENTRIFUGAL CEILING FAN DIRECT DRIVE	PENNBARRY	ZEPHYR Z1	24	50	24	50	31	0.125	3.6	8.0	1700	55	-	120/160	3.4	INTERLOCKED WITH LIGHTING BY DIV. 26	COMPLETE WITH GRAVITY BACKDRAFT DAMPER, UNIT MOUNTED SPEED CONTROLLER, VIBRATION ISOLATION HANGER, FLEXIBLE DUCT CONNECTION AND WCC06 CURB-MOUNTED ROOF CAP.		
DF-1 & DF-2	VEHICLE BAY [131]	DE-STRATIFICATION	AXIAL DIRECT DRIVE	BIGASS FANS	POWERFOIL D PFD1-0822	-	-	-	-	-	-	96.2	212.0	200 MAX.	-	10 MCA	208/3/60	<55dB	AUTOMATIC WALL MOUNTED VARIABLE SPEED BAFCON TOUCH CONTROLLER	2.4 M (8 FT) DIAMETER, COMPLETE WITH AIRFOIL RESTRAINT AND SAFETY CABLE, MOUNTING KIT AND FIRE ALARM RELAY, TIE-IN TO BAS FOR CONTROL AND MONITORING. FINISH COLOUR SELECTED AT SHOP DRAWING REVIEW		

FAN COIL SCHEDULE																																			
TAG	SPACE SERVED	DAIKIN MODEL	ELECTRICAL		SUPPLY FAN						CHILLED WATER COOLING COIL																								
			VOLTAGE	MCA							EAT				LAT				FACE AREA M²	FACE AREA ft²	FPI	ROWS	TOTAL CAPACITY KW	TOTAL CAPACITY BTU/H	SENSIBLE CAPACITY KW	SENSIBLE CAPACITY BTU/H	ENTERING WATER TEMP. °C	ENTERING WATER TEMP. °F	LEAVING WATER TEMP. °C	LEAVING WATER TEMP. °F	FLOW RATE LPS	FLOW RATE GPM	FLUID TYPE	WATER PRESS. DROP kPa	WATER PRESS. DROP ft H₂O
					EDB °C	EDB °F	EWB °C	EWB °F	LDB °C	LDB °F	LWB °C	LWB °F																							
FC-1	114 SIM LAB & 115 STORAGE	FCHH203	115/1/60	2.2	142	300	37.4	0.15	1/8	3-SPEED ECM	24.4	76.0	18.7	65.7	12.2	54.0	12.2	53.9	0.10	1.1	12	4	2.81	9595	1.89	6445	6.7	44.0	12.2	54.0	0.12	1.9	Water	4.39	1.47
FC-2	128 WASHROOMS & 129 LOCKER ROOM	FCHH206	115/1/60	4.7	283	600	37.4	0.15	1/4	3-SPEED ECM	24.5	76.1	18.2	64.8	11.9	53.5	11.8	53.2	0.20	2.1	12	4	5.53	18872	3.94	13452	6.7	44.0	12.2	54.0	0.24	3.8	Water	20.71	6.93
FC-3	103 REPORT WRITING	FCHH206	115/1/60	2.9	283	600	37.4	0.15	1/4	3-SPEED ECM	24.4	75.9	17.6	63.6	11.9	53.0	11.2	52.2	0.20	2.1	12	4	4.54	15502	3.50	11953	6.7	44.0	12.2	53.9	0.20	3.1	Water	14.65	4.90
FC-4	104 KITCHEN	FCHH210	115/1/60	5.8	472	1000	37.4	0.15	(2) 1/4	3-SPEED ECM	24.4	76.0	17.8	64.1	14.8	58.6	13.7	56.6	0.29	3.1	12	2	5.84	19948	4.79	16352	6.7	44.0	12.2	53.9	0.25	4.0	Water	14.86	4.97
FC-5	102 CORRIDOR & 122 VESTIBULE	FCHH212	115/1/60	8.5	567	1200	37.4	0.15	(2) 1/4	3-SPEED ECM	24.5	76.1	17.8	64.1	11.9	53.4	11.3	52.4	0.35	3.8	12	4	11.16	38103	8.06	27524	6.7	44.0	12.2	53.9	0.49	7.7	Water	27.23	9.11
FC-6	126 SECURE STORAGE & 127 MEDICAL STORAGE	FCHH202	115/1/60	2.2	94	200	37.4	0.15	1/8	3-SPEED ECM	24.4	76.0	18.3	65.0	13.0	55.4	12.7	54.8	0.07	0.7	12	3	1.54	5252	1.12	3818	6.7	44.0	12.2	54.0	0.07	1.1	Water	1.14	0.38
FC-7	121 KITCHEN	FCHH212	115/1/60	8.5	567	1200	49.8	0.20	(2) 1/4	3-SPEED ECM	24.6	76.2	17.9	64.2	12.5	54.5	11.6	52.8	0.35	3.8	12	3	10.53	35923	7.43	25346	6.7	44.0	12.2	54.0	0.45	7.2	Water	35.66	11.93
FC-8 & FC-19	108 OPEN OFFICE	FCHH208	115/1/60	5.3	378	800	37.4	0.15	1/4	3-SPEED ECM	24.6	76.3	17.8	64.0	11.9	53.4	11.6	52.8	0.23	2.5	12	4	6.72	22924	5.12	17465	6.7	44.0	12.2	54.0	0.29	4.6	Water	32.10	10.74
FC-9	109 BREAK-OUT & 110 STORAGE	FCHH203	115/1/60	2.2	142	300	37.4	0.15	1/8	3-SPEED ECM	24.3	75.8	18.4	65.2	13.3	56.0	13.2	55.8	0.10	1.1	12	4	2.12	7236	1.65	5643	6.7	44.0	12.2	54.0	0.09	1.5	Water	3.44	1.15
FC-10	112 CLASSROOM	FCHH210	115/1/60	5.8	472	1000	37.4	0.15	(2) 1/4	3-SPEED ECM	24.4	75.9	19.2	66.5	12.9	55.2	12.7	54.9	0.29	3.1	12	3	8.94	30514	5.66	19308	6.7	44.0	12.2	54.0	0.38	6.1	Water	23.02	7.70
FC-11	113 CLASSROOM	FCHH210	115/1/60	5.8	472	1000	37.4	0.15	(2) 1/4	3-SPEED ECM	24.4	75.9	19.2	66.5	12.9	55.2	12.7	54.9	0.29	3.1	12	3	8.94	30514	5.66	19308	6.7	44.0	12.2	54.0	0.38	6.1	Water	23.02	7.70
FC-12	107 CORRIDOR	FCHH212	115/1/60	8.5	567	1200	49.8	0.20	(2) 1/4	3-SPEED ECM	24.6	76.2	17.9	64.2	12.5	54.5	11.6	52.8	0.35	3.8	12	3	10.53	35923	7.43	25346	6.7	44.0	12.2	54.0	0.45	7.2	Water	35.66	11.93
FC-13	105 LOUNGE	FCHH210	115/1/60	5.8	472	1000	37.4	0.15	(2) 1/4	3-SPEED ECM	24.4	75.9	17.8	64.1	14.7	58.5	13.6	56.5	0.29	3.1	12	2	5.72	19534	4.71	16061	6.7	44.0	12.2	54.0	0.25	3.9	Water	14.29	4.78
FC-20	123 ELECTRICAL ROOM	BCHD0081	115/1/60	8.0	378	800	37.4	0.15	1/2	3-SPEED DIRECT CONTACT BRUSHLESS	30.6	87.0	17.8	64.1	12.7	54.8	11.2	52.2	0.15	1.6	12	6	8.24	28131	8.24	28131	6.7	44.0	12.2	54.0	0.35	5.6	Water	23.61	7.90

FAN COIL SCHEDULE (PART 2)																		
TAG	SPACE SERVED	HOT WATER HEATING COIL																
		EDB °C	EDB °F	LDB °C	LDB °F	FPI	ROWS	TOTAL CAPACITY KW	TOTAL CAPACITY BTU/H	ENTERING WATER TEMP. °C	ENTERING WATER TEMP. °F	LEAVING WATER TEMP. °C	LEAVING WATER TEMP. °F	FLOW RATE LPS	FLOW RATE GPM	FLUID TYPE	WATER PRESS. DROP kPa	WATER PRESS. DROP ft H ₂ O
FC-1	114 SIM LAB & 115 STORAGE	21.4	70.5	34.4	93.9	12	2	2.01	6862	48.9	120.0	37.7	99.9	0.04	0.7	Water	1.85	0.62
FC-2	128 WASHROOMS & 129 LOCKER ROOM	21.7	71.0	35.6	96.0	12	2	4.35	14857	48.9	120.0	37.8	100.1	0.09	1.5	Water	10.49	3.51
FC-3	103 REPORT WRITING	21.9	71.5	28.6	83.5	12	1	1.84	6272	48.9	120.0	37.8	100.1	0.04	0.6	Water	4.24	1.42
FC-4	104 KITCHEN	21.6	70.8	35.5	95.9	12	2	6.94	23696	48.9	120.0	37.8	100.1	0.15	2.4	Water	5.17	1.73
FC-5	102 CORRIDOR & 122 VESTIBULE	21.8	71.2	36.2	97.2	12	2	9.22	31471	48.9	120.0	37.8	100.1	0.20	3.2	Water	9.86	3.30
FC-6	126 SECURE STORAGE & 127 MEDICAL STORAGE	21.7	71.0	35.6	96.1	12	1	0.78	2655	48.9	120.0	37.8	100.0	0.02	0.3	Water	5.08	1.70
FC-7	121 KITCHEN	21.8	71.2	35.4	95.7	12	2	8.38	28590	48.9	120.0	37.8	100.1	0.18	2.9	Water	8.13	2.72
FC-8 & FC-19	108 OPEN OFFICE	21.8	71.2	34.2	93.5	12	2	4.97	16977	48.9	120.0	37.8	100.1	0.11	1.7	Water	14.44	4.83
FC-9	109 BREAK-OUT & 110 STORAGE	21.9	71.4	36.1	97.0	12	1	0.26	900	48.9	120.0	37.8	100.1	0.01	0.1	Water	0.15	0.05
FC-10	112 CLASSROOM	21.7	71.0	36.2	97.1	12	2	7.12	24292	48.9	120.0	37.8	100.1	0.16	2.5	Water	5.47	1.83
FC-11	113 CLASSROOM	21.7	71.0	36.2	97.1	12	2	7.12	24292	48.9	120.0	37.8	100.1	0.16	2.5	Water	5.47	1.83
FC-12	107 CORRIDOR	21.8	71.2	35.4	95.7	12	2	8.38	28590	48.9	120.0	37.8	100.1	0.18	2.9	Water	8.13	2.72
FC-13	105 LOUNGE	21.7	71.1	28.9	84.1	12	1	3.52	12024	48.9	120.0	37.8	100.1	0.08	1.2	Water	17.49	5.85
FC-20	123 ELECTRICAL ROOM	18.3	65.0	26.9	80.5	12	1	1.44	4900	48.9	120.0	37.8	100.1	0.03	0.5	Water	12.25	4.10

ALL MEASUREMENTS ARE TO BE VERIFIED BY THE CONTRACTOR ON SITE AND ANY DISCREPANCIES ARE TO BE REPORTED BEFORE PROCEEDING WITH THE WORK. THE REGION OF DURHAM ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE LOCATION OF EXISTING SERVICES AS INDICATED ON THIS DRAWING. DO NOT SCALE DRAWINGS.

1890 Fifth Concession Rd

CONSULTANT REVISIONS			

HUMIDIFIER SCHEDULE										
TAG	MANUFACTURER / MODEL	MAX. STEAM FLOW RATE		POWER SUPPLY			OPERATING WEIGHT		REMARKS	
		KG/HR	LB/HR	V / PH / Hz	KW	FLA	KG	LBS		
HUM-1	DRISTEEM / VAPORMIST VM-14	19.1	42.0	600 / 3 / 60	14	13.5	63	139	MODULATING SOLID STATE RELAY CONTROLLED, WITH BACNET COMMUNICATION AND DISCONNECT SWITCH. COMPLETE WITH DRISTEEM "DRANE-KOOLER"; REMOTE HIGH HUMIDITY SWITCH AND AIR PROVING SWITCH IN SUPPLY AIR DUCT. CONNECTED TO "DRISTEEM RAPIDSORB" STEAM DISPERSION TUBES WITH STAINLESS STEEL HEADER AND TUBE INSIDE ASSOCIATED SUPPLY AIR DUCT.	

HYDRONIC HEAT TRANSFER UNITS SCHEDULE																															
TAG	TYPE	LOCATION	CONFIGURATION	MANUFACTURER / MODEL	MAX. AIR FLOW		EAT		LAT		FLUID	EWT		LWT		FLOW RATE		WATER PRESSURE DROP		MAX. HEATING CAPACITY		MOTOR SIZE	MAX. FAN SPEED	POWER SUPPLY	AMP.	OPERATING WEIGHT			DIMENSIONS		REMARKS
					LPS	CFM	°C	°F	°C	°F		°C	°F	LPS	GPM	KPa	FT.W.G.	KW	MBH	HP	RPM	A	KG		LBS	MM	IN				
UH-1	UNIT HEATER	MECH. ROOM [124]	HORIZONTAL	SIGMA 056H	429	910	18.0	64.4	28.0	82.4	WATER	48.9	120.0	37.8	100.0	0.11	1.8	0.36	0.12	5.3	18	0.125	1150	115 / 1 / 60	2	21.8	48.0	W 685 D 457 H 420	W 27 D 18 H 16.5	COMPLETE WITH WALL BRACKET, HORIZONTAL LOUVRES, OSHA FAN GUARD, OVERLOAD PROTECTION, DISCONNECT SWITCH AND REMOTE THERMOSTAT WITH INSULATED SUB-BASE	
FF-1	FORCE FLOW HEATER	VESTIBULE [101]	RECESSED FRONT IN / FRONT OUT	SIGMA SFF-03	142	300	18.0	64.4	40.2	104.4	WATER	48.9	120.0	37.8	100.0	0.08	1.3	1.13	0.38	3.8	13	0.100	1075	115 / 1 / 60	1.9	56.8	125.0	W 1028 D 240 H 660	W 40.5 D 9.5 H 26	COMPLETE WITH LOUVRES, ACCESS DOOR, OVERLOAD PROTECTION, DISCONNECT SWITCH, UNIT MOUNTED THERMOSTAT AND SPEED CONTROLLER. COLOUR TO BE SELECTED AT SHOP DRAWING REVIEW.	
FF-3	FORCE FLOW HEATER	VESTIBULE [122]	SEMI-RECESSED FRONT IN / FRONT OUT	SIGMA SFF-02	94	200	21.1	70.0	39.1	102.4	WATER	48.9	120.0	37.8	100.0	0.04	0.7	0.81	0.27	2.1	7	0.100	1075	115 / 1 / 60	1.9	34.1	75.0	W 660 D 240 H 660	W 26 D 9.5 H 26	COMPLETE WITH LOUVRES, ACCESS DOOR, OVERLOAD PROTECTION, DISCONNECT SWITCH, UNIT MOUNTED THERMOSTAT AND SPEED CONTROLLER. COLOUR TO BE SELECTED AT SHOP DRAWING REVIEW.	
FF-4	FORCE FLOW HEATER	GENDER NEUTRAL W/R [117]	RECESSED CEILING MOUNTED	SIGMA SFF-02	94	200	21.1	70.0	41.7	107.0	WATER	48.9	120.0	37.8	100.0	0.05	0.8	0.90	0.30	2.3	8	0.100	1075	115 / 1 / 60	1.9	34.1	75.0	W 660 D 240 H 660	W 26 D 9.5 H 26	COMPLETE WITH LOUVRES, ACCESS DOOR, OVERLOAD PROTECTION, DISCONNECT SWITCH, REMOTE THERMOSTAT AND SPEED CONTROLLER. COLOUR TO BE SELECTED AT SHOP DRAWING REVIEW.	
FF-5	FORCE FLOW HEATER	CORRIDOR [107]	SEMI-RECESSED FRONT IN / FRONT OUT	SIGMA SFF-02	94	200	21.1	70.0	33.9	93.1	WATER	48.9	120.0	37.8	100.0	0.03	0.5	0.60	0.20	1.5	5	0.100	1075	115 / 1 / 60	1.9	34.1	75.0	W 660 D 240 H 660	W 26 D 9.5 H 26	COMPLETE WITH LOUVRES, ACCESS DOOR, OVERLOAD PROTECTION, DISCONNECT SWITCH, UNIT MOUNTED THERMOSTAT AND SPEED CONTROLLER. COLOUR TO BE SELECTED AT SHOP DRAWING REVIEW.	
CH-1	CONVECTOR HEATER	STORAGE [116]	WALL TYPE	SIGMA CWF	-	-	-	-	-	-	WATER	48.9	120.0	37.8	100.0	0.01	0.2			0.5	1.7	-	-	-	-			W 500 D 115 H 350	W 20 D 4.5 H 14	FLAT TOP, COMPLETE WITH 16 GA. FRONT COVER AND REMOTE THERMOSTAT. COLOUR TO BE SELECTED AT SHOP DRAWING REVIEW.	

IN-FLOOR RADIANT CIRCUITS SCHEDULE														
MANIFOLD	AREA SERVED	REHAU ARTICLE NO.	CIRCUIT QUANTITY	HEAT LOAD		PIPE SIZE		PIPE SPACING		WATER FLOW		HEAD LOSS		REMARKS
				KW	MBH	MM	INS.	MM	INS.	LPS	GPM	KPA	FT	
M-1	133 WASH AREA AND 134 OXYGEN & LINEN	PRO-BALANCE 381102-001 & 345400-512	3	6.44	22.0	16	0.625	150	6	0.14	2.20	15.82	5.30	25MM (1") STAINLESS STEEL MANIFOLD AND WHITE FLUSH MOUNT MANIFOLD CABINET. PROVIDE PROGRAMMABLE RADIANT THERMOSTAT WITH SEPARATE CONTROL VALVES AND FLOOR SENSORS FOR WASH BAY AND OXYGEN/LINEN ROOM (ART. NO. 39802S) AND 4 MANIFOLD ACTUATOR CONTROLLER (ART. NO. 298276-001)
M-2	131 VEHICLE BAY	PRO-BALANCE 381110-001 & 316856-512	10	30.16	103.0	16	0.625	150 AND 250	6 AND 12	0.65	10.30	41.49	13.90	25MM (1") STAINLESS STEEL MANIFOLD AND STAINLESS STEEL SURFACE MOUNT MANIFOLD CABINET. PROVIDE TWO PROGRAMMABLE RADIANT THERMOSTATS WITH SEPARATE CONTROL VALVES AND FLOOR SENSORS (ART. NO. 39802S) AND 4 MANIFOLD ACTUATOR CONTROLLER (ART. NO. 298276-001)

LOUVRE SCHEDULE											
TAG	LOCATION	MANUFACTURER / MODEL	APPLICATION	FREE AREA SQM	SIZE		VELOCITY		AIR FLOW		ACCESSORIES / COLOUR
					MM	INS	MPS	FPM	LPS	CFM	
C1 & C2	OXYGEN ROOM	VENTEX / 2625	NATURAL VENTILATION	0.05	400 W	16 W	---	---	---	---	150MM (6") DEEP STORMPROOF LOUVRE, COMPLETE WITH INSECT SCREEN AND EXTENDED SLEEVE. LOUVRE COLOUR SHALL BE SELECTED AT SHOP DRAWING REVIEW. CONTRACTOR TO PROVIDE LINTEL FOR INSTALLATION.
					400 H	16 H					

PUMP SCHEDULE																			
TAG	LOCATION	SERVICE	FLUID TYPE	MANUFACTURER	MODEL	FLOW (MAX)		FLOW (OPERATING)		HEAD		MOTOR DATA				CONTROLS	POWER V/Ph/Hz	REMARKS	
						LPM	GPM	LPM	GPM	M	FT	RPM	BHP	HP	WATTS				
P-1A&B	MECH ROOM	GEO FIELD PRIMARY PUMPS	25% P.G.	XYLEM	E-1531 2BD	492.1	130	469.4	124	15.2	50	1531	2.47	5		VFD (LOOSE)	575/3/60	DUTY/STANDBY, VARIABLE SPEED OPERATION, INTEGRATED TECHNOLOGIC SENSORLESS CONTROL (ITSC)	
P-2	MECH ROOM	HP-1 SECONDARY PUMP	25% P.G.	XYLEM	E-80 3x3x7C	492.1	130	469.4	124	6.1	20	1548	0.9	1.5		VFD (PUMP MOUNTED)	575/3/60	VARIABLE SPEED OPERATION	
P-3	MECH ROOM	HP-2 SECONDARY PUMP	25% P.G.	XYLEM	E-80 2x2x.5C	170.3	45	147.6	39	4.3	14	976	0.35	0.75		VFD (PUMP MOUNTED)	575/3/60	VARIABLE SPEED OPERATION	
P-4A&B	MECH ROOM	CHILLED WATER PRIMARY PUMPS	WATER	XYLEM	E-80SC 3x3x7C	397.5	105	371.0	98	3.7	12	991	0.4	0.75		VFD (PUMP MOUNTED)	575/3/60	DUTY/STANDBY, CONSTANT SPEED OPERATION	
P-5A&B	MECH ROOM	HEATING WATER PRIMARY PUMPS	WATER	XYLEM	E-80 3x3x7C	605.7	160	473.2	125	4.6	15	1140	0.82	1		VFD (PUMP MOUNTED)	575/3/60	DUTY/STANDBY, VARIABLE SPEED OPERATION, INTEGRATED TECHNOLOGIC SENSORLESS CONTROL (ITSC)	
P-6A&B	MECH ROOM	CHILLED WATER SECONDARY PUMPS	WATER	XYLEM	E-90 2AB	397.5	105	371.0	98	9.1	30	1696	1.13	1.5		VFD (LOOSE)	575/3/60	DUTY/STANDBY, VARIABLE SPEED OPERATION	
P-7A&B	MECH ROOM	HEATING WATER SECONDARY PUMPS	WATER	XYLEM	E-80 2x2x.5C	302.8	80	276.3	73	9.1	30	1098	1.02	1.5		VFD (PUMP MOUNTED)	575/3/60	DUTY/STANDBY, VARIABLE SPEED OPERATION, INTEGRATED TECHNOLOGIC SENSORLESS CONTROL (ITSC)	
P-8	MECH ROOM	HEATING GLYCOL SECONDARY PUMP	40% P.G.	XYLEM	E-80 1.5x1.5x9.5B	94.6	25	83.3	22	6.1	20	1070	0.263	0.5		VFD (PUMP MOUNTED)	575/3/60	VARIABLE SPEED OPERATION, INTEGRATED TECHNOLOGIC SENSORLESS CONTROL (ITSC)	
P-9	MECH ROOM	ELECTRIC BOILER INJECTION PUMP	WATER	XYLEM	ECOCIRC XL 15-75	132.5	35	121.1	32	3.0	10	2315		0.16		STARTER	120/1/60	ECM MOTOR	
P-10	MECH ROOM	DOMESTIC HOT WATER RECIRCULATION PUMP	DOMESTIC WATER	XYLEM	ECOCIRC 19-16	15.1	4	15.1	4	2.4	8	1929			60	STARTER	120/1/60	ECM MOTOR C/W AQUASTAT, TIMER AND BAS INTERLOCK	

RANGE HOOD SCHEDULE															
TAG	LOCATION	FUNCTION	MANUFACTURER	MODEL	BLOWER TYPE	CAPACITY		STATIC PRESSURE		MOTOR POWER			SOUND DATA SONES	CONTROLLED BY	REMARKS
						LPS	CFM	Pa	IN WC	RPM	AMP.	V/PH/Hz			
KH-1	KITCHEN [121]	RESIDENTIAL RANGE HOOD	REVERSOMATIC	DELUXE 2000-200 600MM (24")	CENTRIFUGAL DIRECT DRIVE	80	170	37	0.15	1,500	1.4	115/160	6.0	MANUAL CONTROL	COMPLETE WITH INTEGRAL SPEED CONTROLLER, 60W LIGHT AND WHITE FINISH.
KH-2	KITCHEN [104]	RESIDENTIAL RANGE HOOD	REVERSOMATIC	DELUXE 2000-200 600MM (24")	CENTRIFUGAL DIRECT DRIVE	80	170	37	0.15	1,500	1.4	115/160	6.0	MANUAL CONTROL	COMPLETE WITH INTEGRAL SPEED CONTROLLER, 60W LIGHT AND WHITE FINISH.

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DESIGN BY: Designer	SCALE:
DRAWN BY: Author	DATE: 06/10/21
CHECKED BY: Checker	CONSULTANT PROJECT NO. 60611569
APPROVED BY: Approver	CLIENT FILE No.: 811/20

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THE REGIONAL MUNICIPALITY
OF DURHAM
WORKS DEPARTMENT
DESIGN, CONSTRUCTION & ASSET MANAGEMENT

NEW SEATON PARAMEDIC STATION AND TRAINING FACILITY IN PICKERING MECHANICAL SCHEDULES

PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. P061- 18- 01
CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 703	SHEET NO.

SILENCER SCHEDULE																			
TAG	VIBRO-ACOUSTICS MODEL NUMBER	SYSTEM	TYPE (NOTE 1)	DIMENSIONS			AIRFLOW L/S	VELOCITY (NOTE 2) M/S	IDEAL DP (NOTE 3) Pa	MAX.DP W/SYS EFF (NOTE 4) Pa	MINIMUM DYNAMIC INSERTION LOSS								Notes
				DUCT WIDTH MM.	DUCT HEIGHT MM.	LENGTH MM.					dB (NOTE 5)								
											OCTAVE BAND CENTER FREQUENCY, HZ								
											63	125	250	500	1000	2000	4000	8000	
SL-S	RD-LV-AY26997	SUPPLY	RD	650	350	900	967	+4	42	59	5	8	15	20	23	19	14	12	6, 7, 8
SL-R1	RD-ULV-AY26997	RETURN	RD	500	250	900	392	-3	27	33	9	18	21	17	22	16	13	12	6, 7, 8
SL-R2	RD-ULV-AY26997	RETURN	RD	500	400	900	599	-3	25	30	9	18	21	17	22	16	13	12	6, 7, 8
Notes: 1. TYPE: R - RECTANGULAR D - DISSIPATIVE 2. VELOCITY SHOWN IS + (FORWARD FLOW) OR - (REVERSE FLOW) AS DEFINED BY ASTM E477-13. 3. IDEAL PRESSURE DROP AS DETERMINED PER ASTM E477-13 IN A NVLAP-ACCREDITED ACOUSTICAL LABORATORY. 4. PRESSURE DROP PER ASTM E477-13 PLUS SYSTEM EFFECTS FOR NEARBY DUCT ELEMENTS. 5. MINIMUM DYNAMIC INSERTION LOSS DETERMINED PER ASTM E477-13 IN A NVLAP-ACCREDITED ACOUSTICAL LABORATORY. 6. NON-BASIS OF DESIGN SILENCER MANUFACTURER SHALL PROVIDE, FOR APPROVAL, PROFESSIONAL ENGINEER STAMPED ACOUSTICAL CALCULATIONS FOR ALL SYSTEMS WITH SILENCERS TO DEMONSTRATE THAT THE RESULTANT DUCTBORNE FAN SOUND LEVELS, INCLUDING AIRBORNE AND BREAKOUT NOISE, MEET THE REQUIRED CRITERIA. 7. NON-BASIS OF DESIGN SILENCER MANUFACTURER SHALL PROVIDE, FOR APPROVAL, PROFESSIONAL ENGINEER STAMPED PRESSURE DROP CALCULATIONS FOR ALL SYSTEMS WITH SILENCERS TO DEMONSTRATE THAT THE RESULTANT INSTALLED PRESSURE DROP WITH SYSTEM EFFECTS DOES NOT EXCEED SCHEDULED VALUES. 8. FOR NON-BASIS OF DESIGN PRODUCT SUPPLIED, CONTRACTOR IS FINANCIALLY RESPONSIBLE TO ENSURE NOISE CONTROL SOLUTION IS DELIVERED TO ACHIEVE SPECIFIED NC LEVEL IN SPACES.																			

VARIABLE AIR VOLUME (VAV) TERMINAL BOX SCHEDULE																			
TAG	MANUFACTURER & MODEL	TERMINAL TYPE	NOMINAL INLET DIAMETER		NOMINAL OUTLET SIZE				TERMINAL AIRFLOW RANGE				MINIMUM P's		ATTENUATOR LENGTH		NC SOUND DATA MAXIMUM		REMARKS
					WIDTH		HEIGHT		MINIMUM		MAXIMUM								
			MM	INS	MM	INS	MM	INS	LPS	CFM	LPS	CFM	PA	INS.W.C.	MM	INS	DISC.	RAD.	
04	KRUEGER LMHS-1-1-1-XX-04-D	SINGLE INLET, PRESSURE INDEPENDENT (SUPPLY)	100	4	300	12	200	8	19	40	109	230	25	0.10	900	36	32	24	COMPLETE WITH 25 MM (1 IN) INSULATION AND LINEAR AVERAGING SENSOR, DIGITAL CONTROLS SUPPLIED BY THIS DISCIPLINE AND INSTALLED BY THE TERMINAL MANUFACTURER.
05	KRUEGER LMHS-1-1-1-XX-05-D		125	5	300	12	200	8	29	62	170	360			900	36	31	21	
06	KRUEGER LMHS-1-1-1-XX-06-D		150	6	300	12	200	8	42	89	243	515			900	36	27	25	

HEAT PUMP SCHEDULE																														
TAG	LOCATION	MANUFACTURER / MODEL	TYPE	OPERATING WEIGHT		CIRCUIT DATA				CAPACITY		EER	COOLING PERFORMANCE																	
						COMPRESSOR TYPE	COMPRESSOR QTY.	CIRCUIT QTY.	REFRIGERANT				GEOTHERMAL SOURCE SIDE							SYSTEM SIDE										
				KG	LBS								C	F	LPS	GPM	M	FT	FLUID	C	F	C	F	LPS	GPM	M	FT	FLUID		
HP-1	MECHANICAL ROOM [124]	AERMEC / NXP0650Y	6 PIPE	1450	3196	SCROLL	4	2	R410A	144.1	41	15.6	29.5	85	35.0	95	7.8	124.0	4.75	15.60	25% PROP.	12.2	54.0	6.7	44.0	6.2	98.3	2.0	6.6	WATER
HP-2		AERMEC / WRL400Y	4 PIPE	411	907	SCROLL	2	1	R410A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

HEAT PUMP SCHEDULE (PART 2)																								
TAG	HEATING PERFORMANCE																		SOUND POWER	ELECTRICAL				
	CAPACITY		COP	GEOTHERMAL SOURCE SIDE								WATER SIDE								POWER SUPPLY	MCA / MOCP			
				EWT		FLOW		PRESS. DROP		FLUID	EWT		FLOW		PRESS. DROP		FLUID							
				C	F	C	F	LPS	GPM		M	FT	C	F	C	F		LPS				GPM	M	FT
HP-1	119.8	409.0	3	1.7	35	-2.8	27	4.6	73.2	1.86	6.10	25% PROP.	43.4	110.0	48.9	120.0	5.2	82.6	1.4	4.7	WATER	79	575/3/60	58 / 70
HP-2	62.1	212.0	3.23	1.7	35	-2.8	27	2.4	38.4	2.93	9.60	25% PROP.	43.4	110.0	48.9	120.0	2.7	42.8	2.8	9.1	WATER	82	575/3/60	35 / 40

GLYCOL MAKEUP UNIT SCHEDULE														
TAG	LOCATION	MANUFACTURER	MODEL	PUMP FLOW RATE		PRESSURE RANGE		RESERVOIR SIZE		MOTOR POWER		SHIPPING WEIGHT		REMARKS
				LPS	GPM	kPa	PSI	LIT.	GAL.	HP	V/PH/Hz	KG	LBS	
G-1	MECHANICAL ROOM	BELL & GOSSETT	GMU-30	0.63	10	21 - 207	3 - 30	208	55	1/2	115/1/60	73	160	

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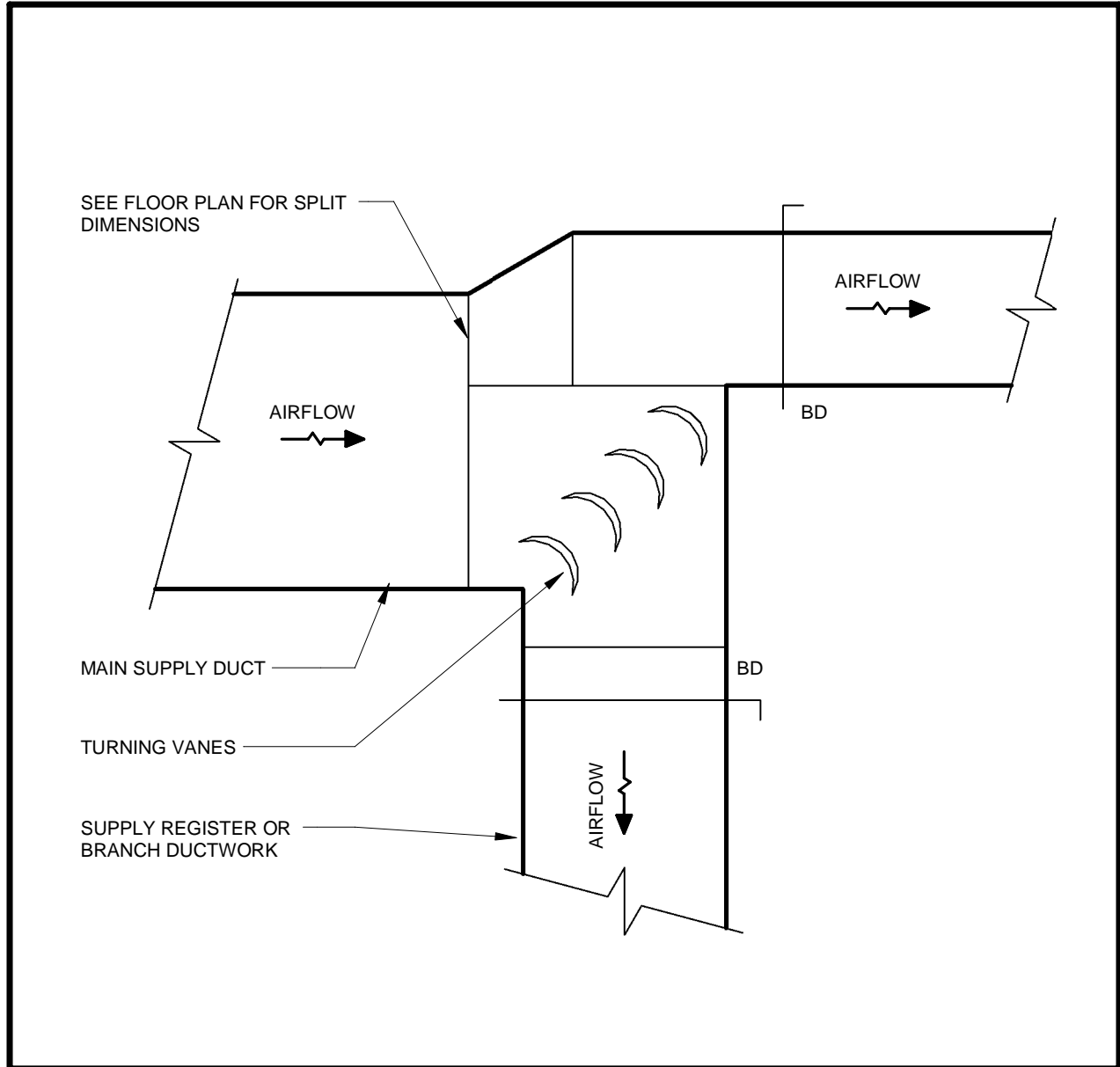
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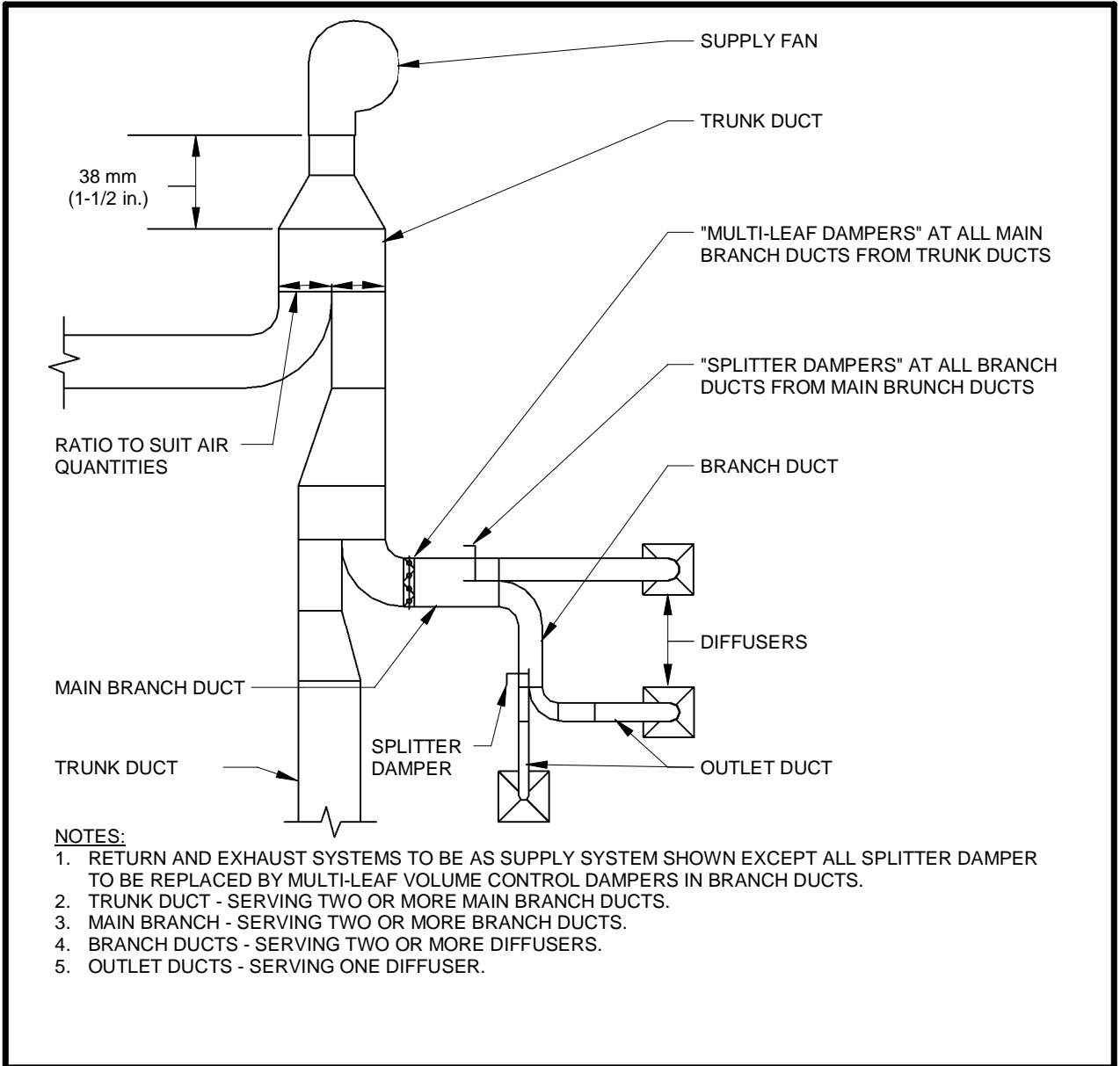
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CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 704	SHEET NO.

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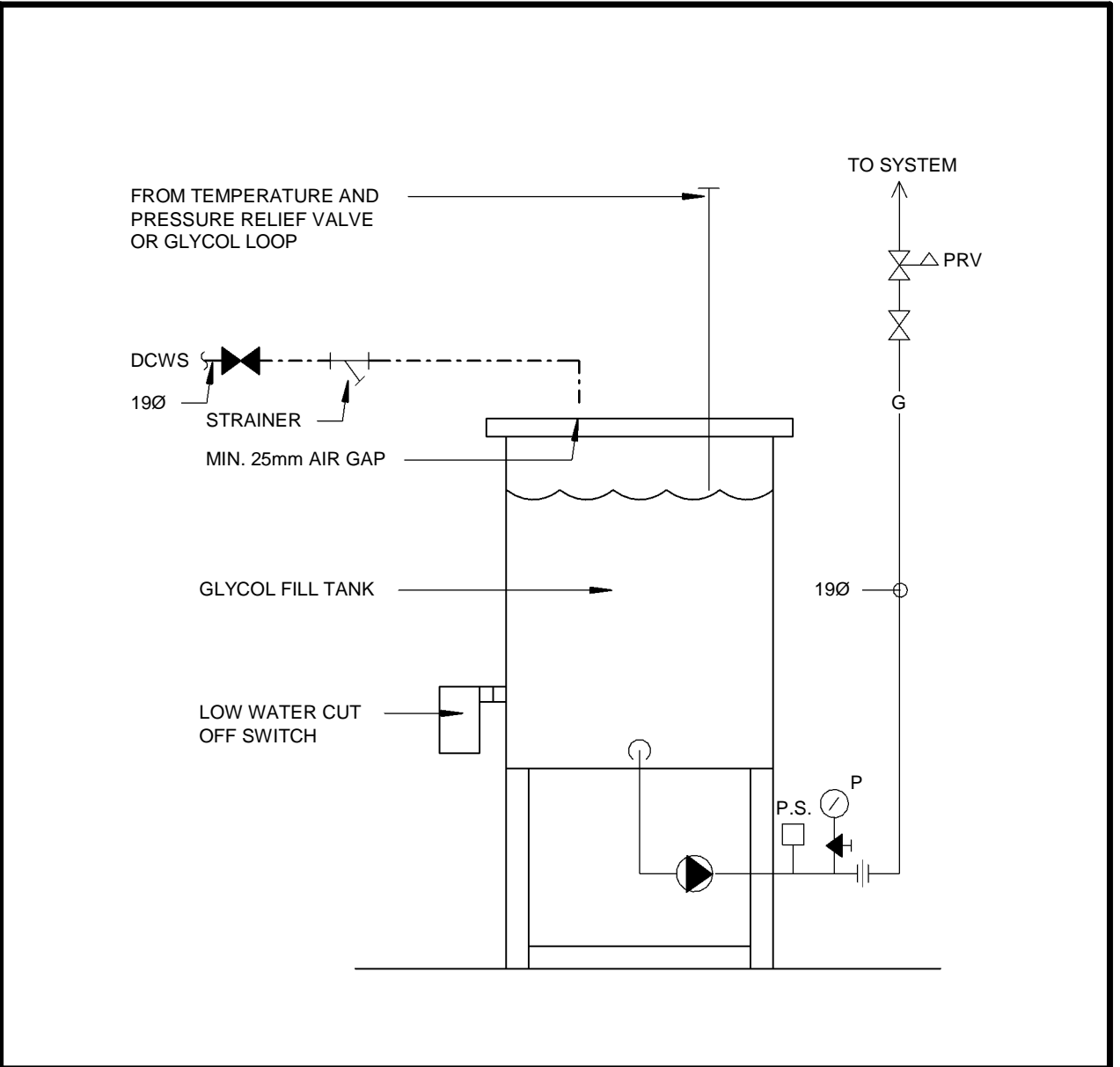
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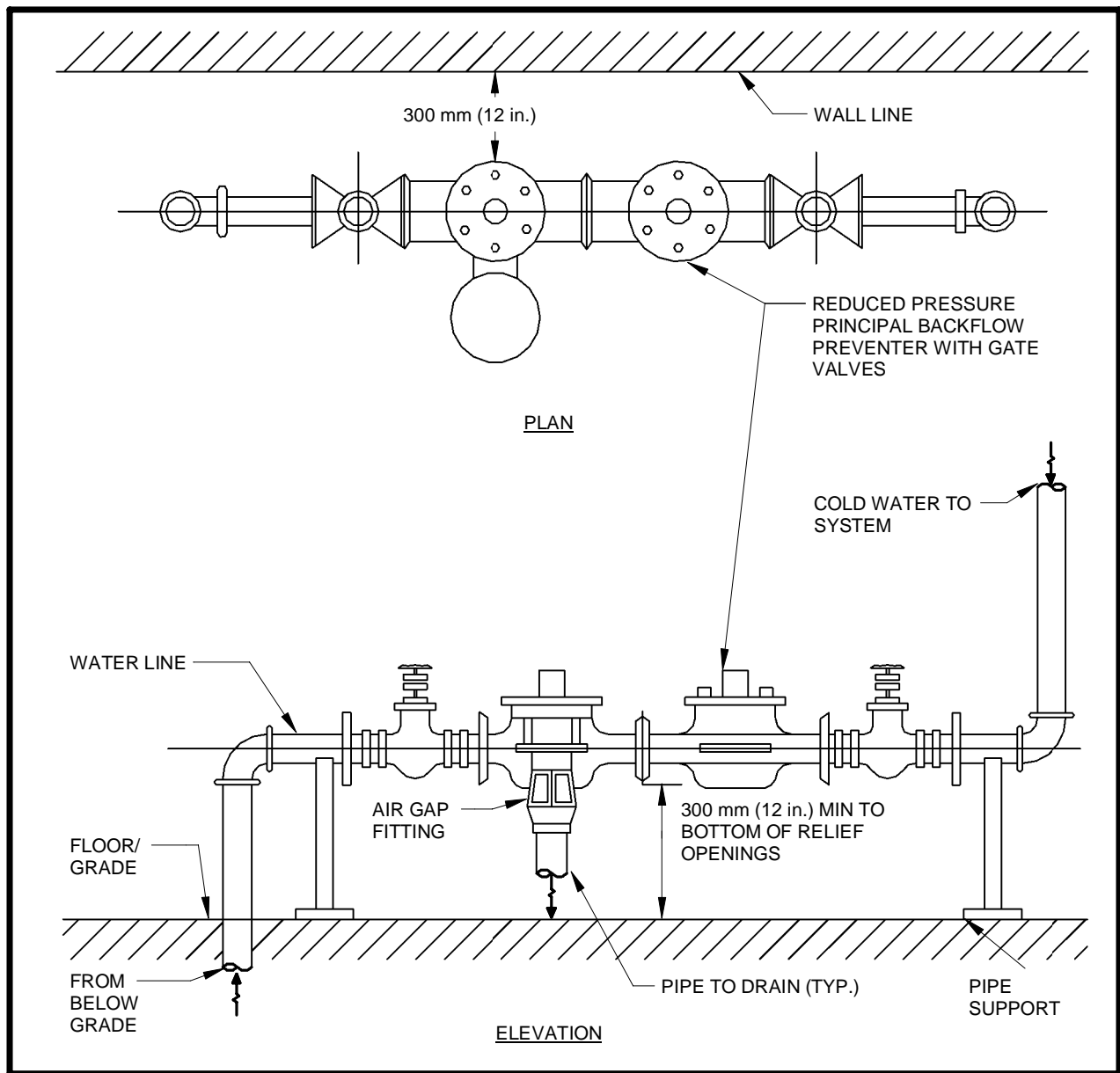
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Scale: NTS



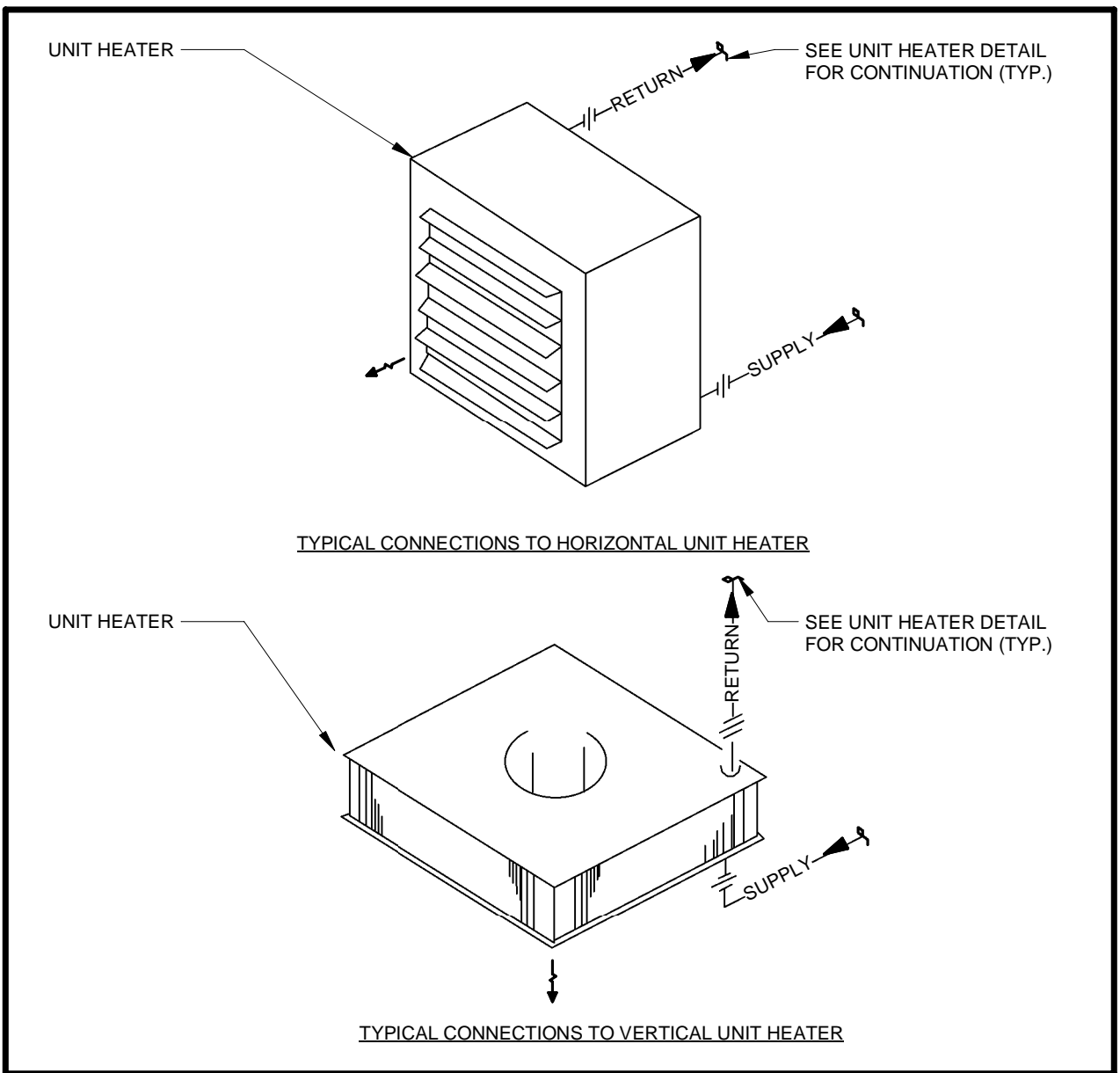
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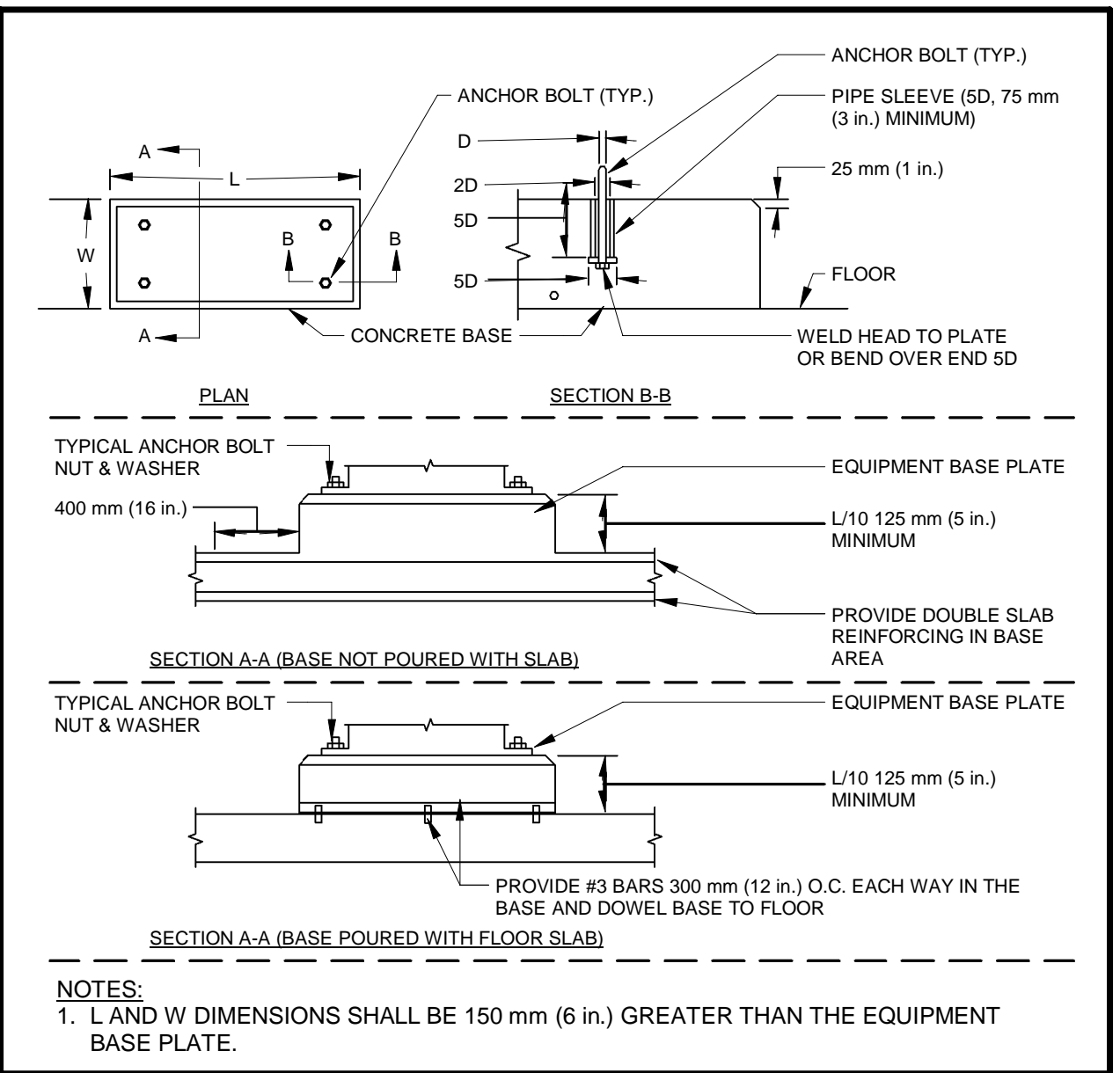
5 | SCHEMATIC - PACKAGED GLYCOL MAKEUP UNIT
Scale: NTS



2 | BACKFLOW PREVENTER PIPING DETAIL
Scale: NTS



4 | UNIT HEATER ORIENTATION
Scale: NTS



6 | CONCRETE EQUIPMENT BASES
Scale: NTS

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DRAWN BY: Author	DATE: 10/27/20
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APPROVED BY: Approver	CLIENT FILE No.: 811/20

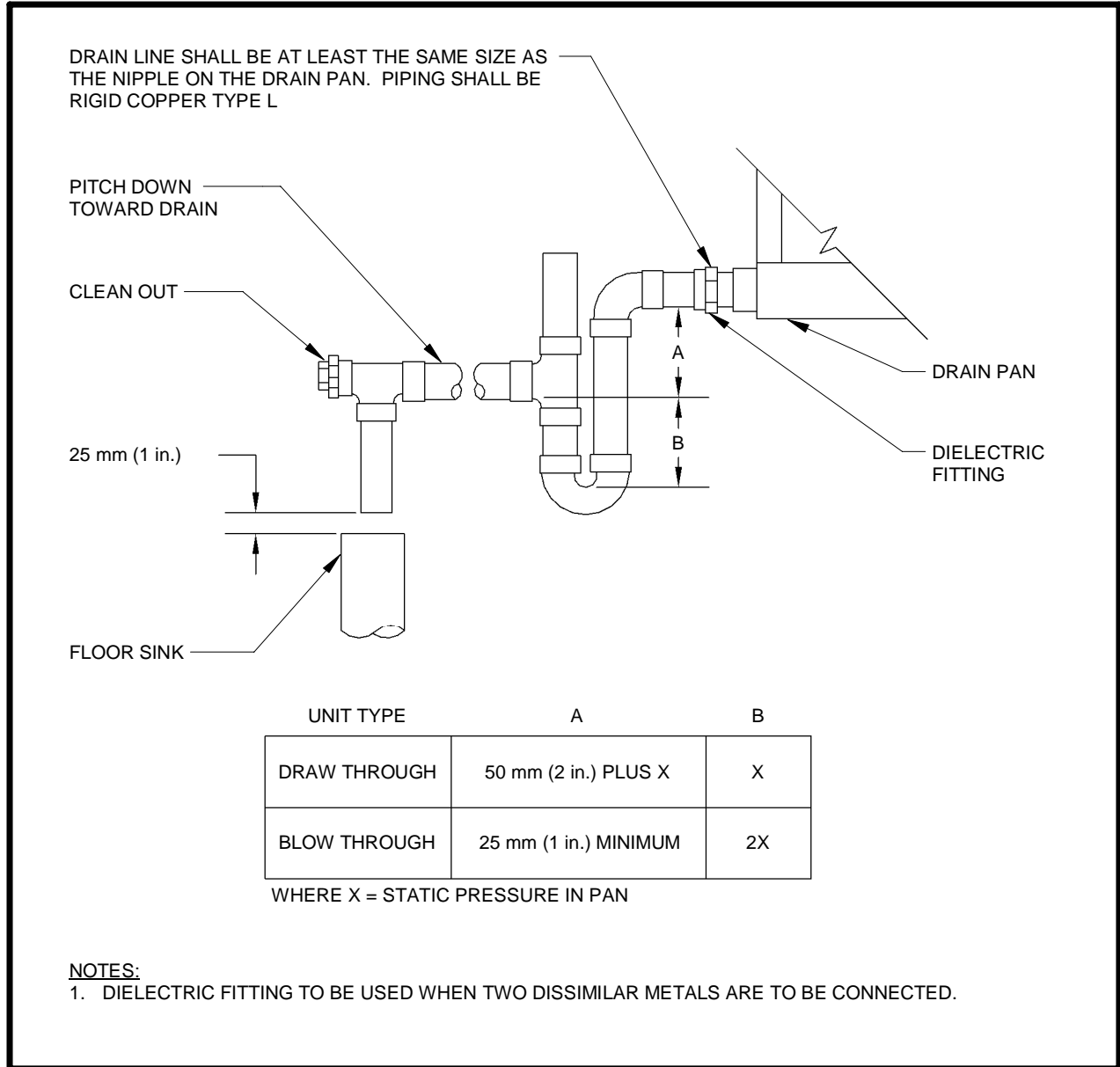
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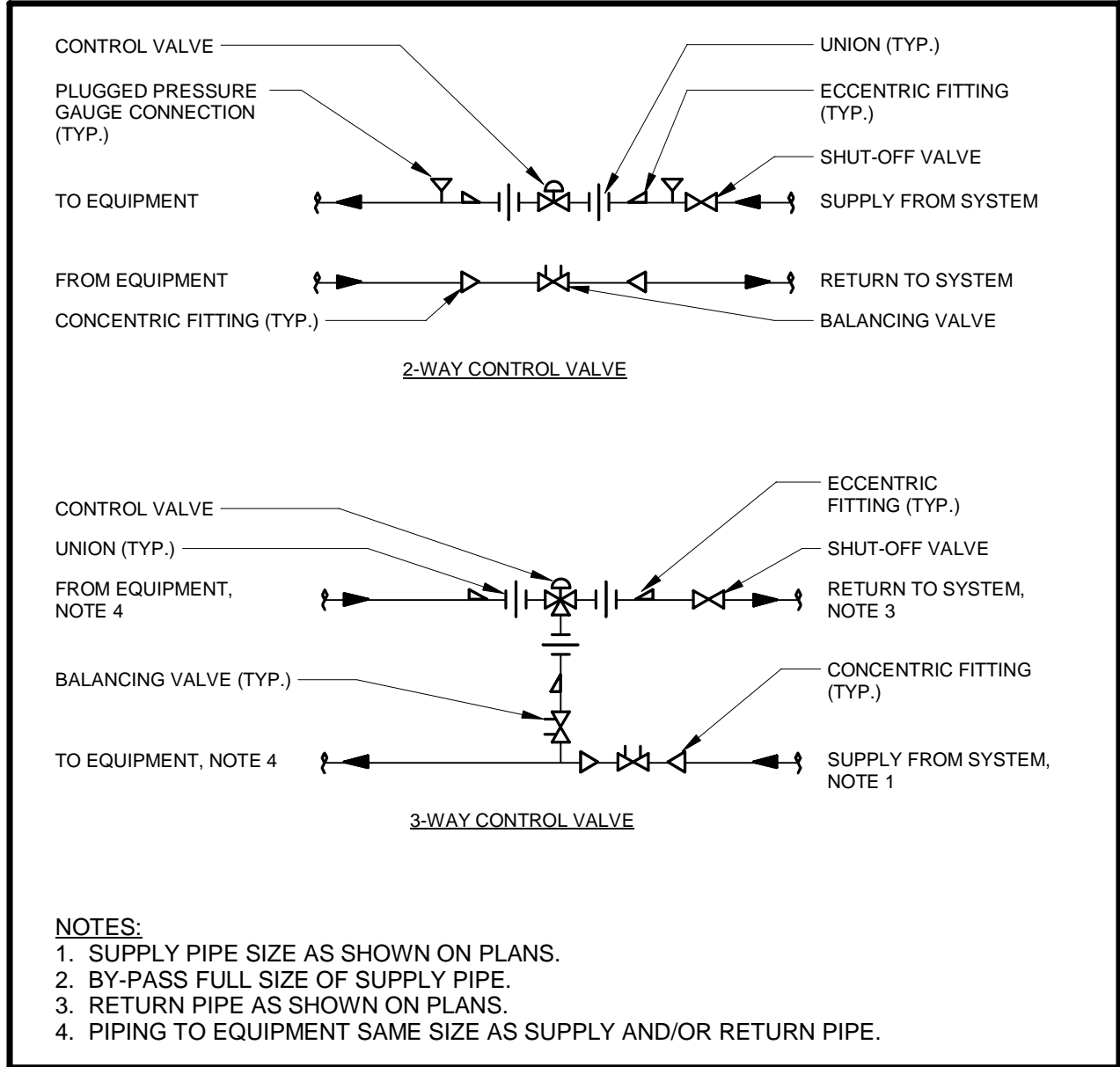
NEW SEATON PARAMEDIC STATION
AND TRAINING FACILITY IN PICKERING
MECHANICAL STANDARD DETAILS

PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. PO61- 18- 01
CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 800	SHEET NO.

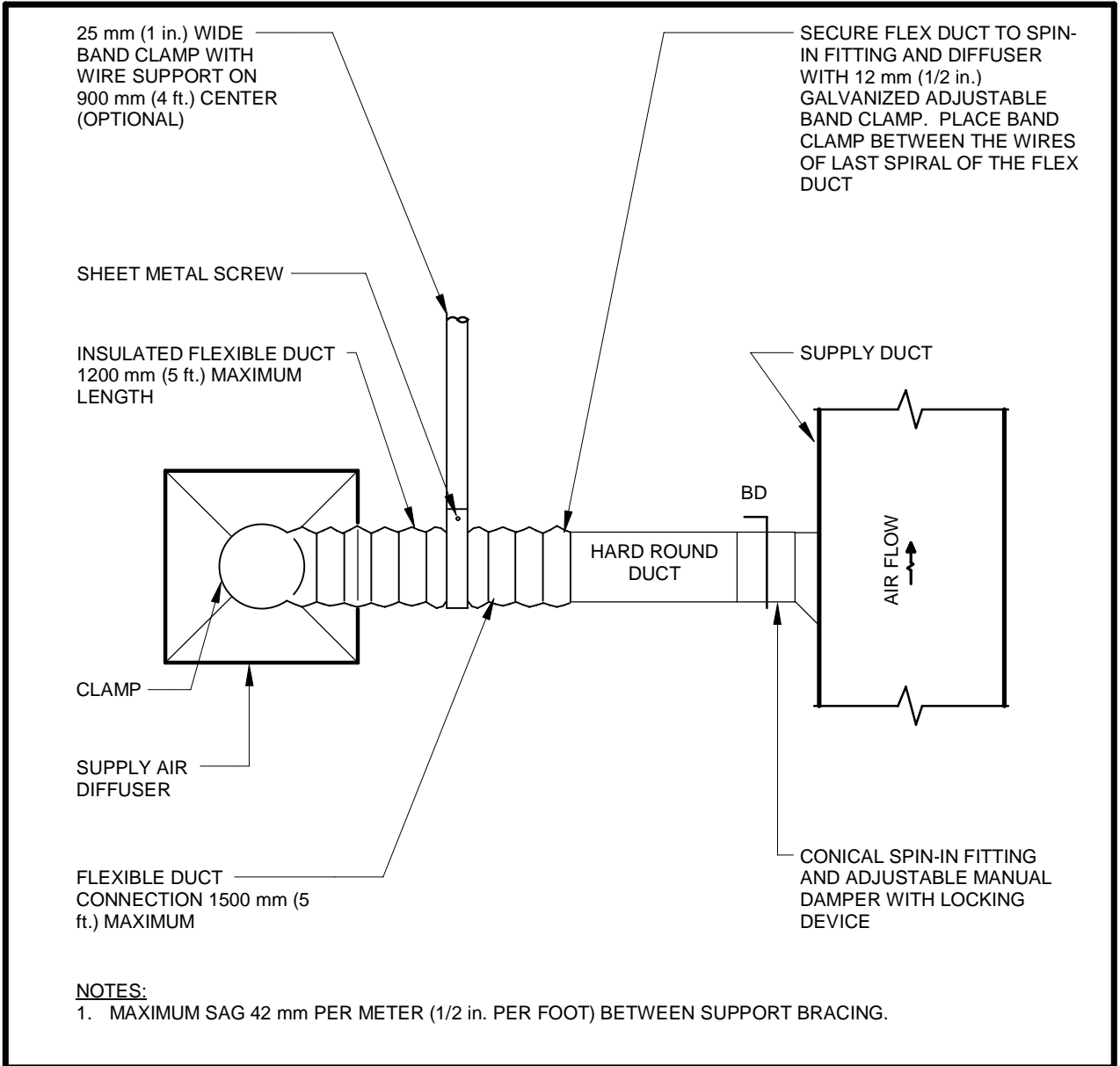
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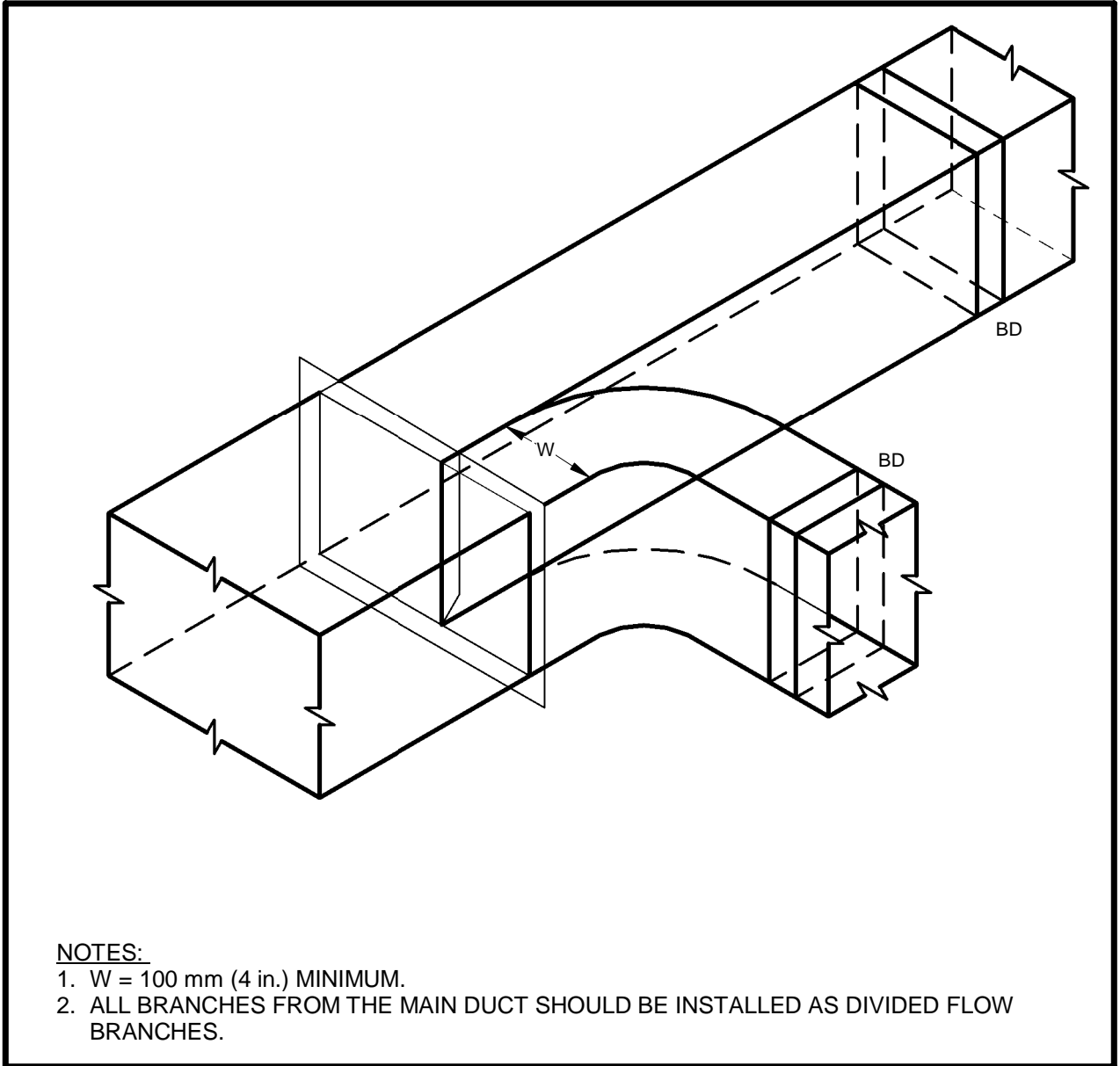
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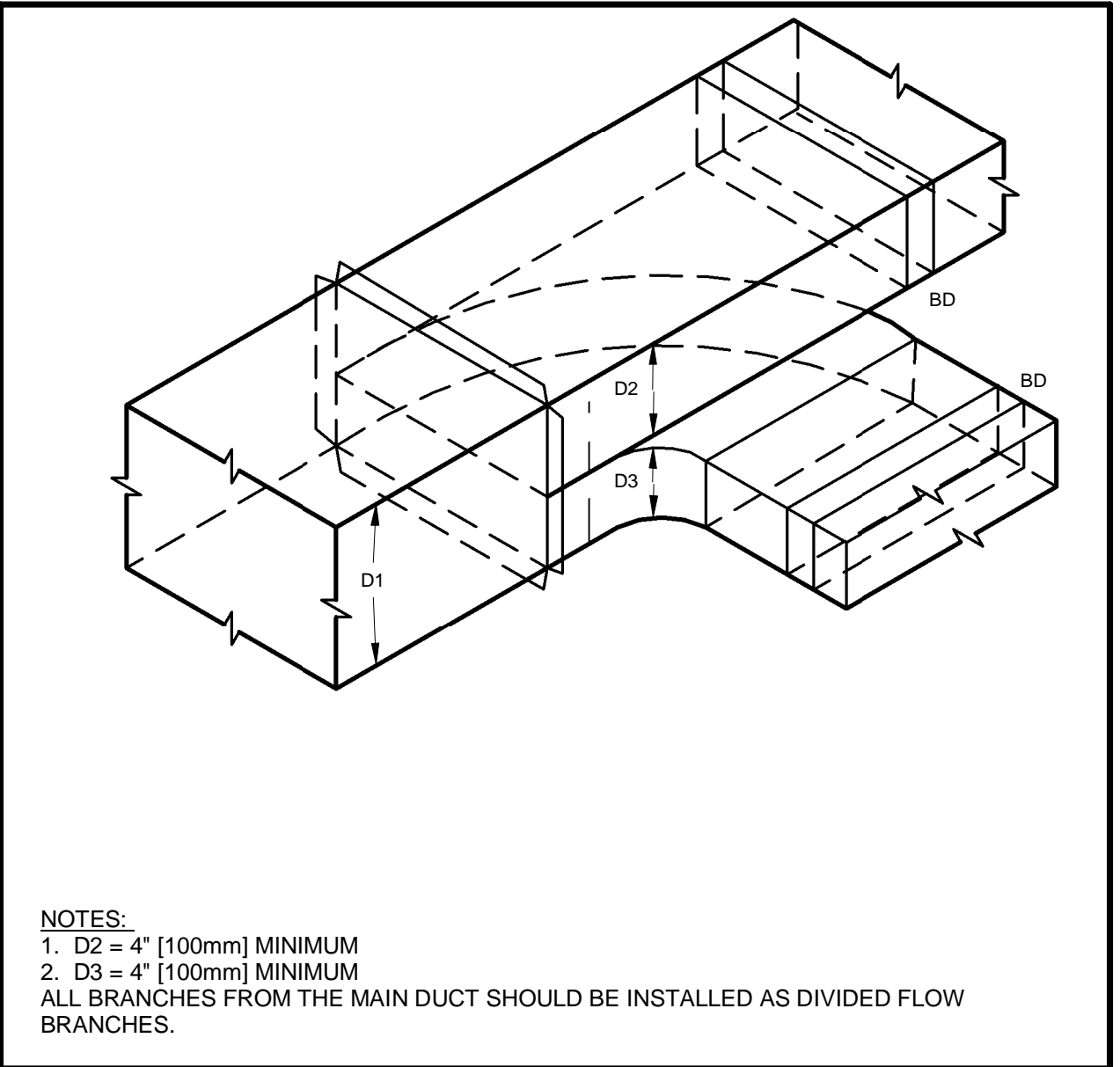
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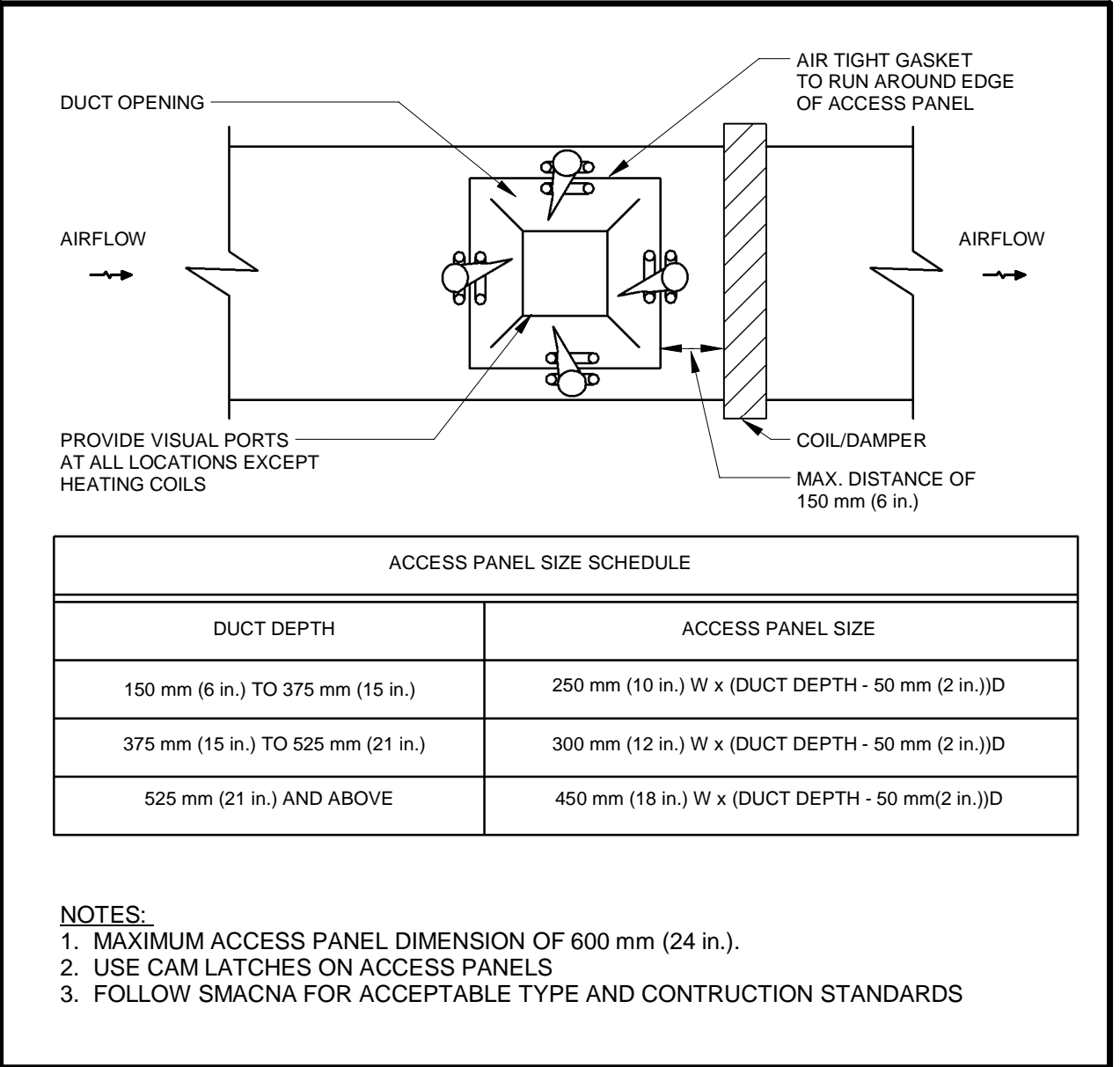
3 DIFFUSER CONNECTION DETAIL Scale: NTS



4 DIVIDED FLOW BRANCH TYPE 1 Scale: NTS



5 DIVIDED FLOW BRANCH TYPE 2 Scale: NTS



6 DUCT ACCESS PANEL SIZING Scale: NTS

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PROFESSIONAL ENGINEER
SEP 23, 2021
R. S. CARMON
480162353
PROVINCE OF ONTARIO

DESIGN BY: Designer	SCALE: As Indicated
DRAWN BY: Author	DATE: 10/28/20
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DURHAM REGION

THE REGIONAL MUNICIPALITY OF DURHAM

WORKS DEPARTMENT

DESIGN, CONSTRUCTION & ASSET MANAGEMENT

NEW SEATON PARAMEDIC STATION AND TRAINING FACILITY IN PICKERING MECHANICAL STANDARD DETAILS

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CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 801	SHEET NO.

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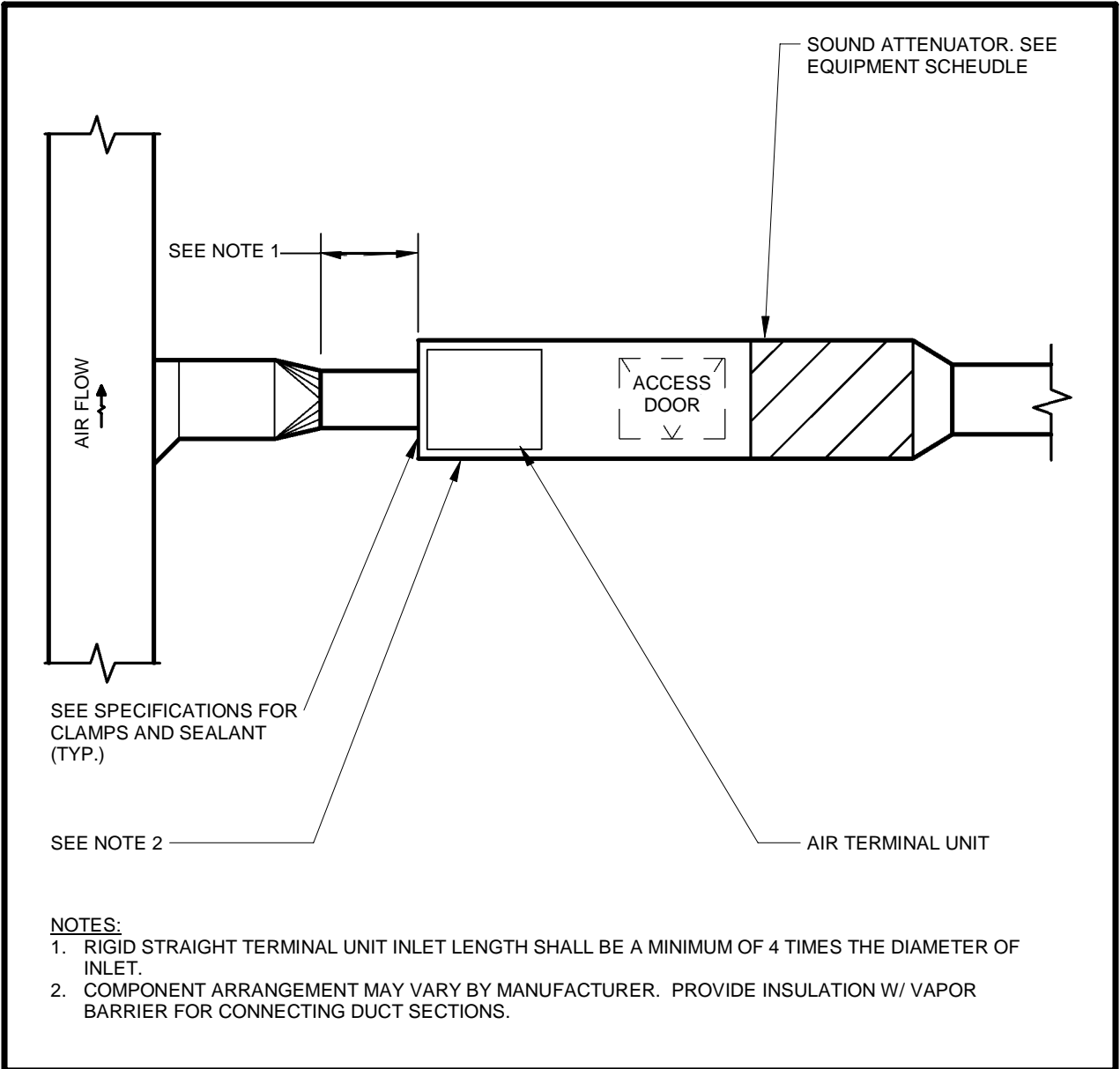
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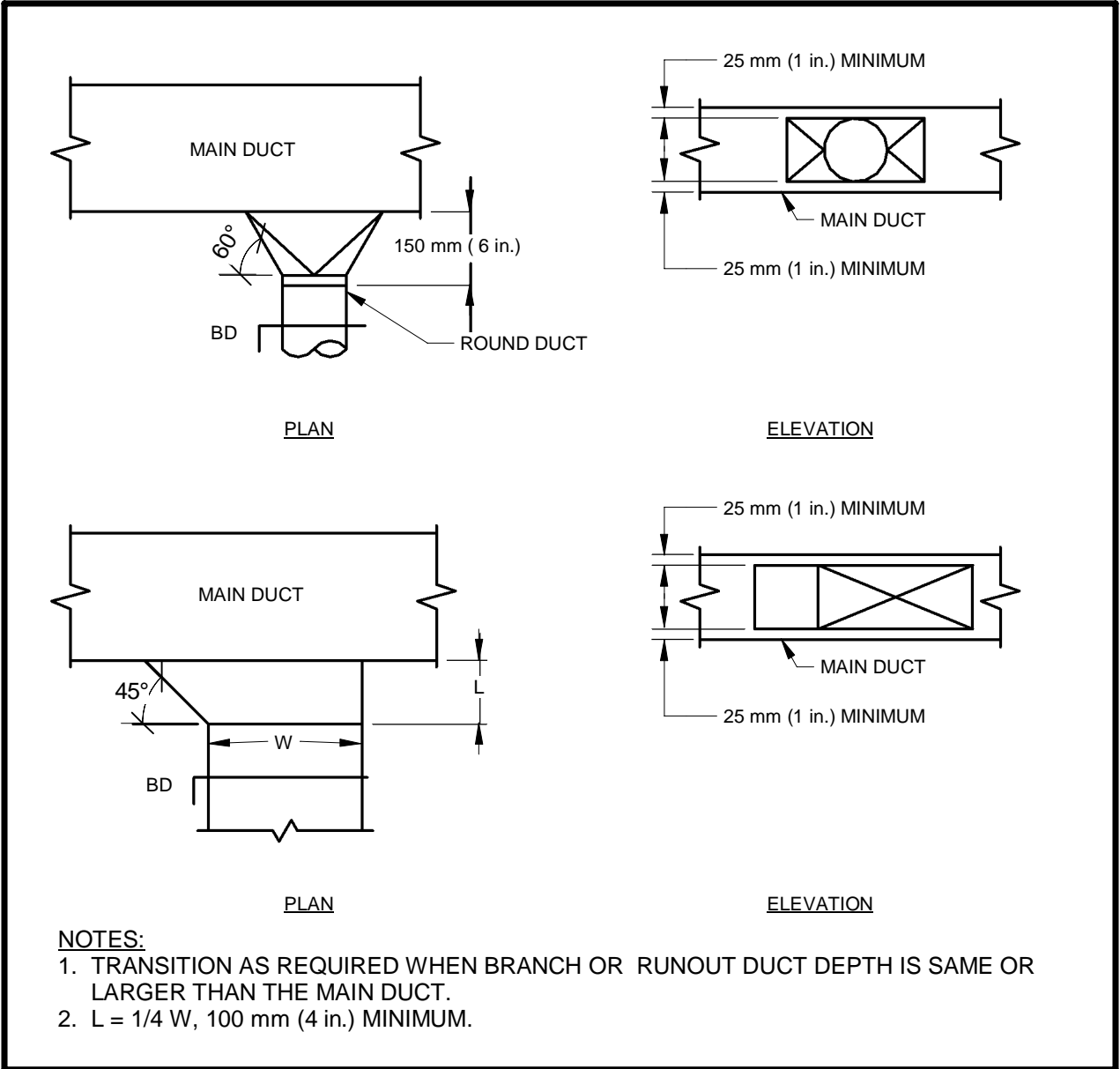
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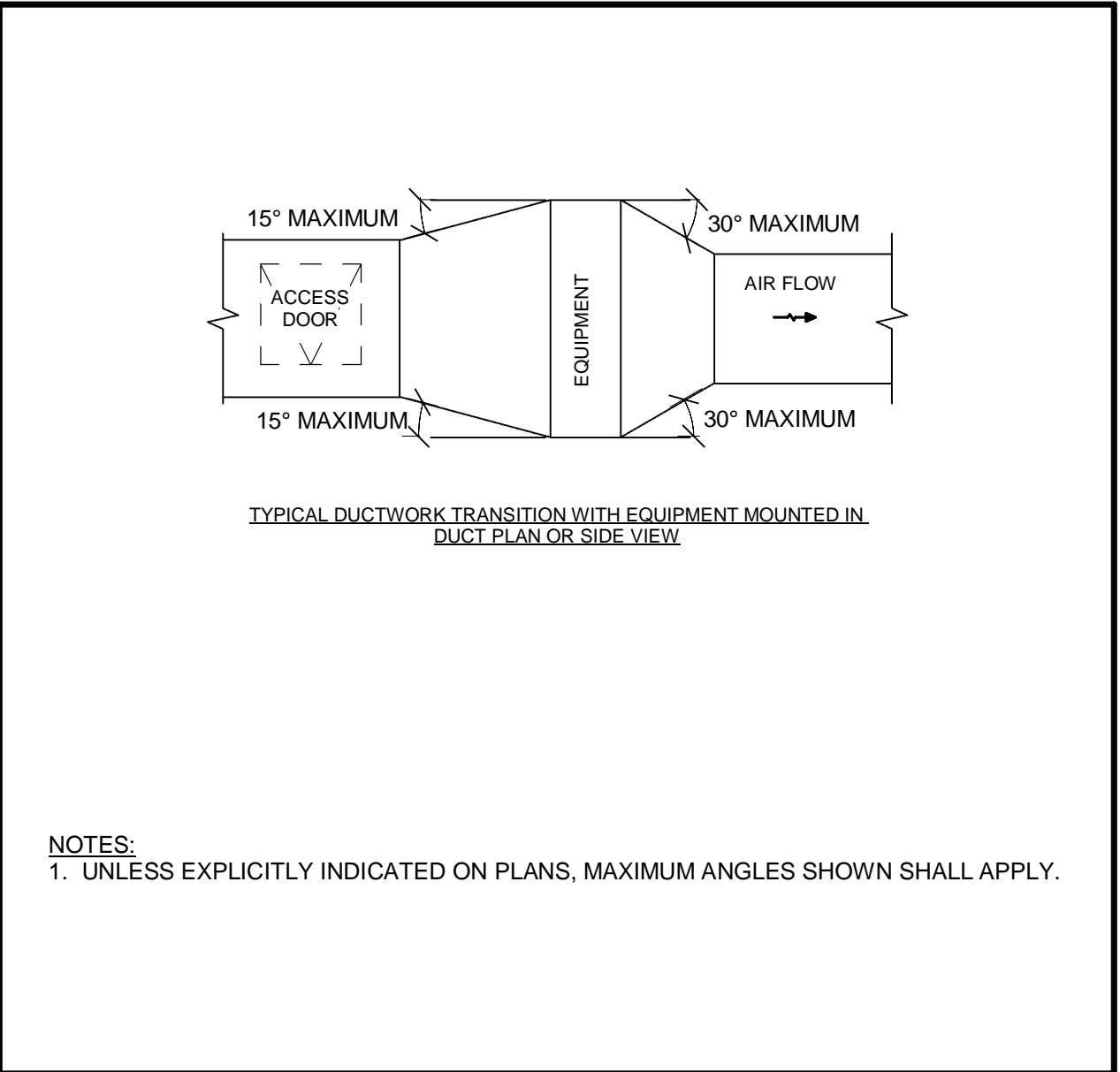
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CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 802	SHEET NO.



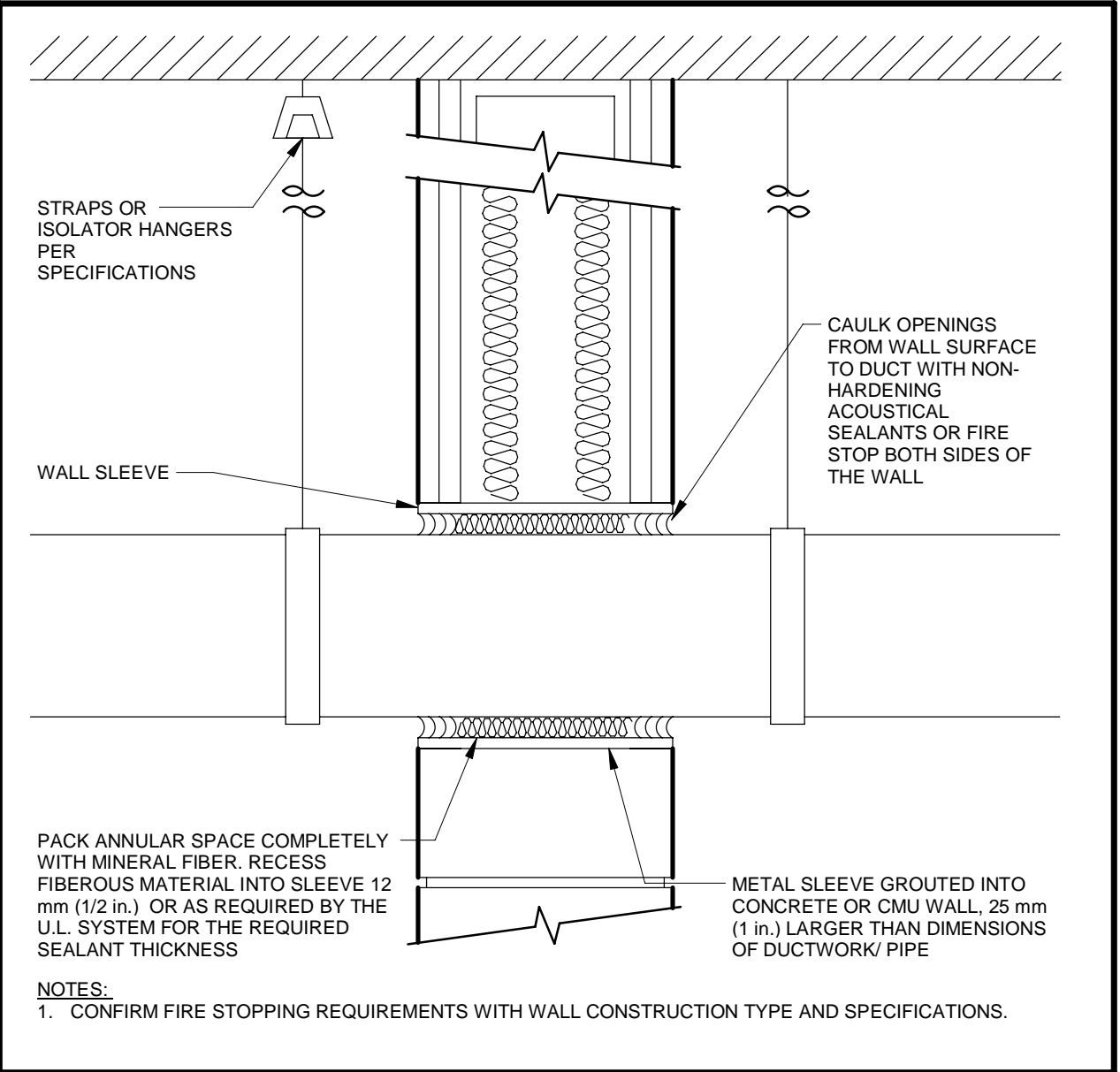
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Scale: NTS



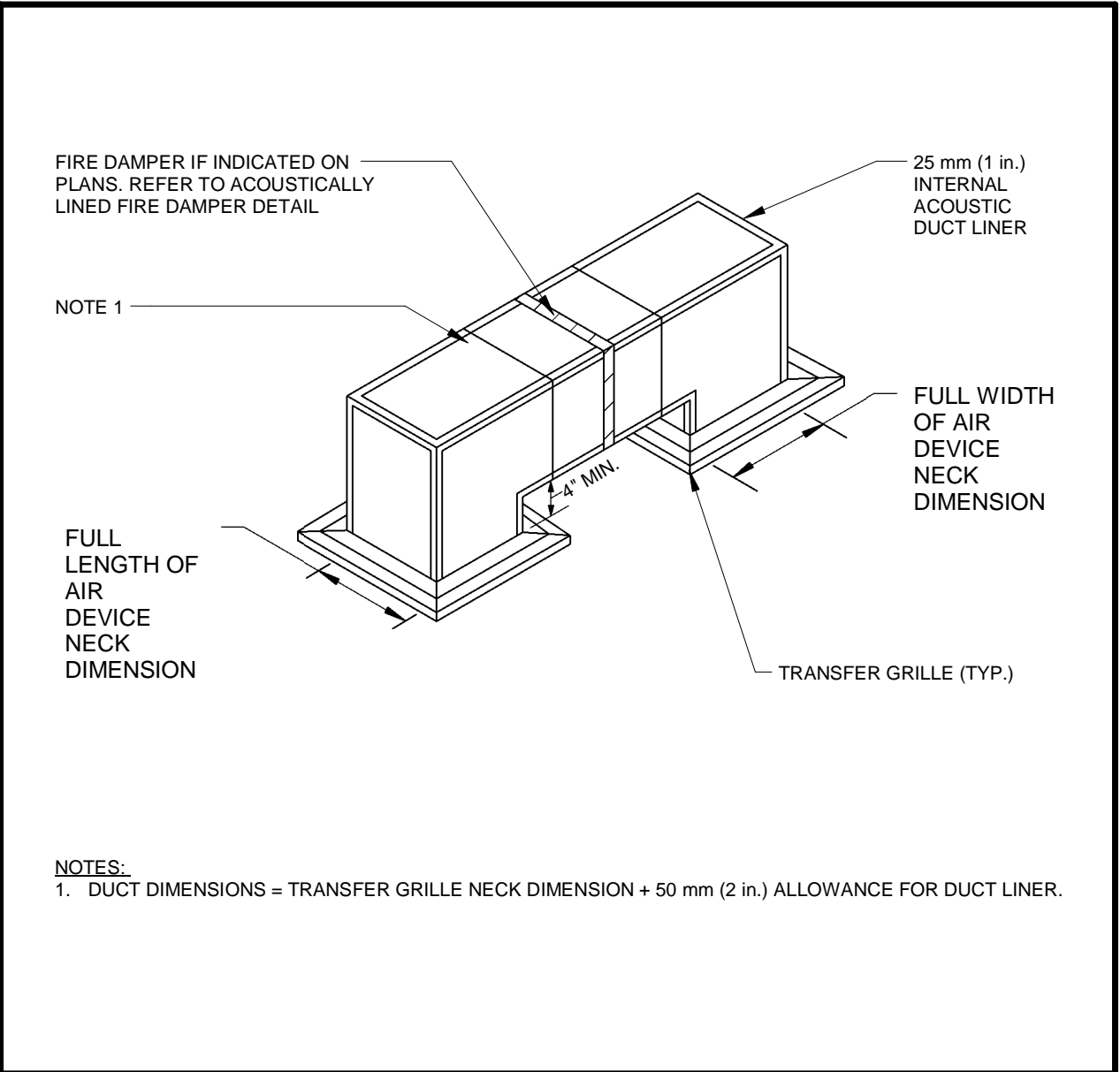
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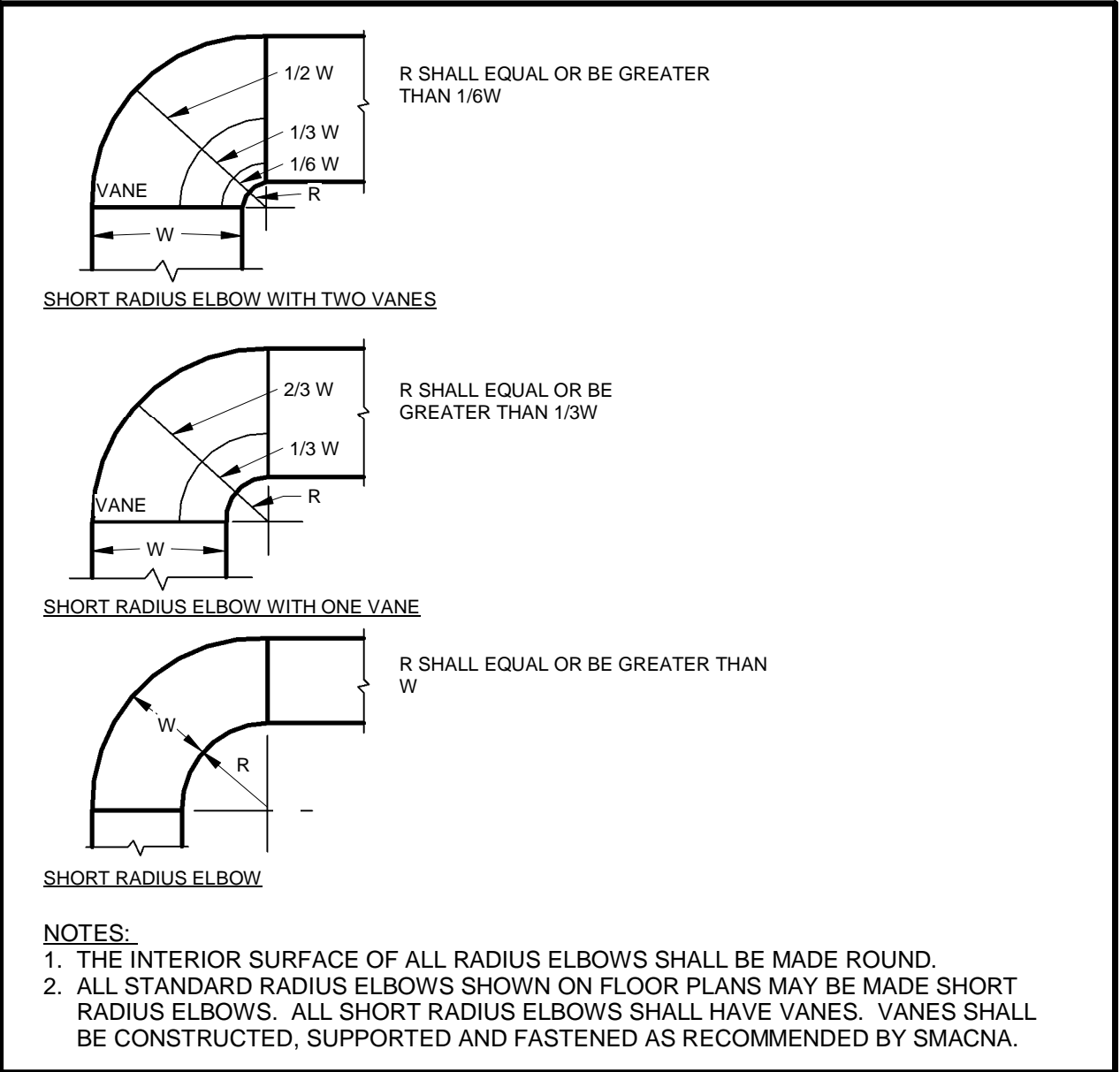
3 | DUCT TRANSITION - EQUIPMENT IN DUCT
Scale: NTS



4 | DUCT/PIPE WALL PENETRATION
Scale: NTS



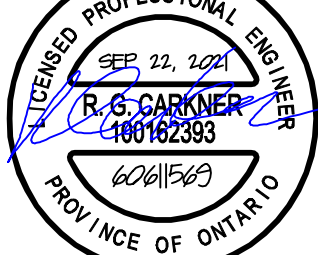
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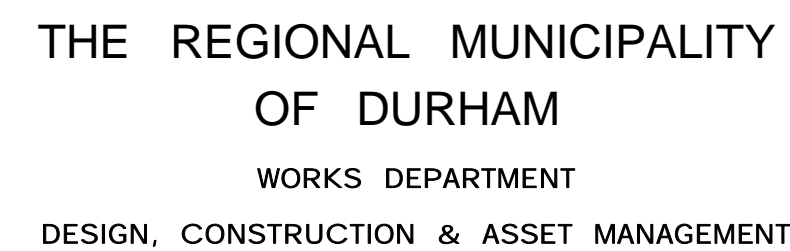
6 | DUCTWORK RADIUS ELBOW
Scale: NTS

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CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 803	SHEET NO.


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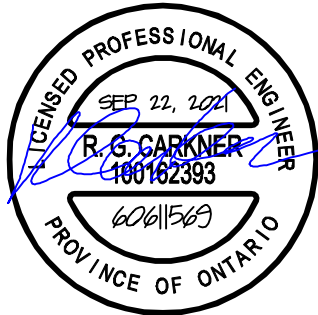
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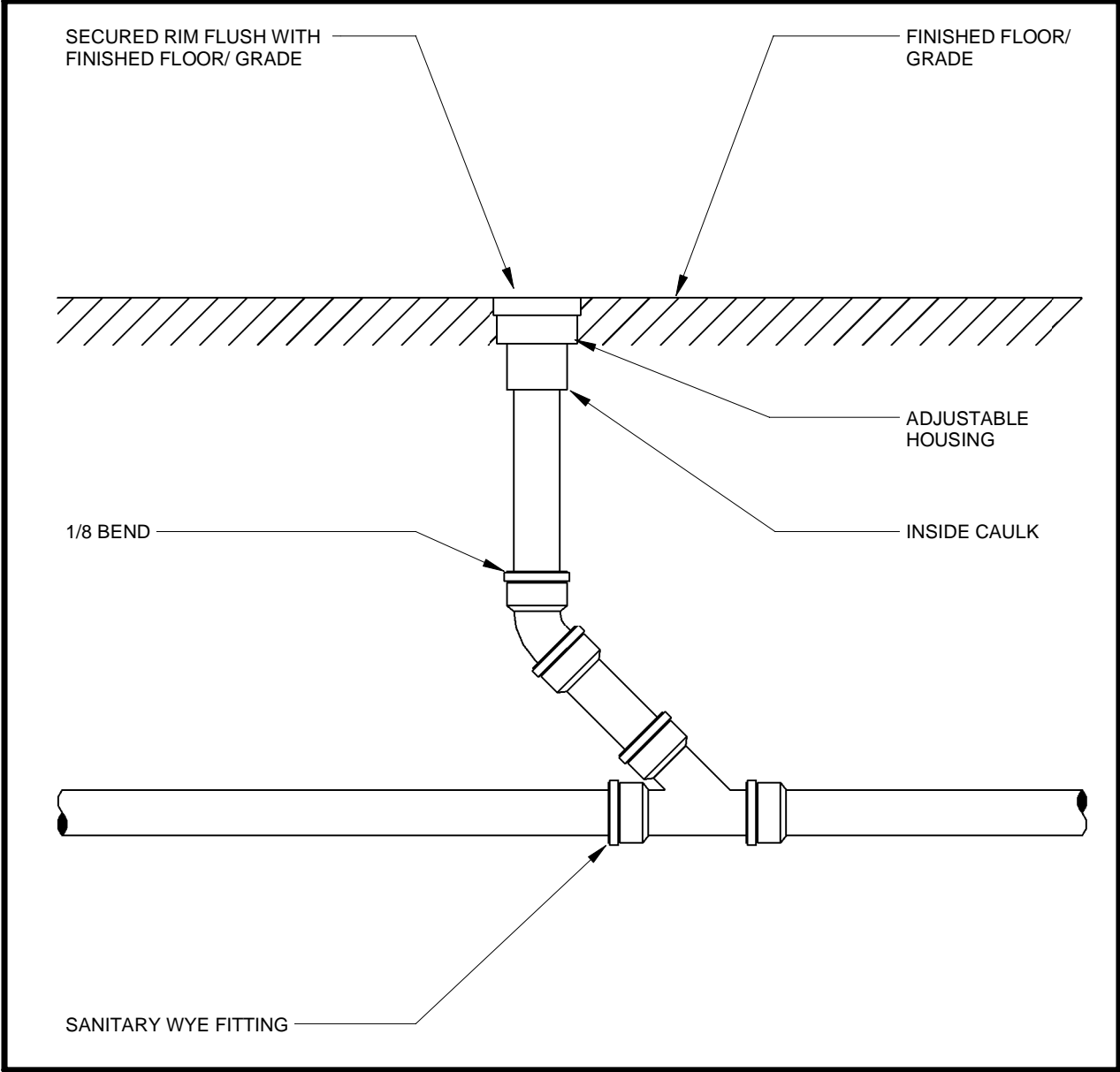
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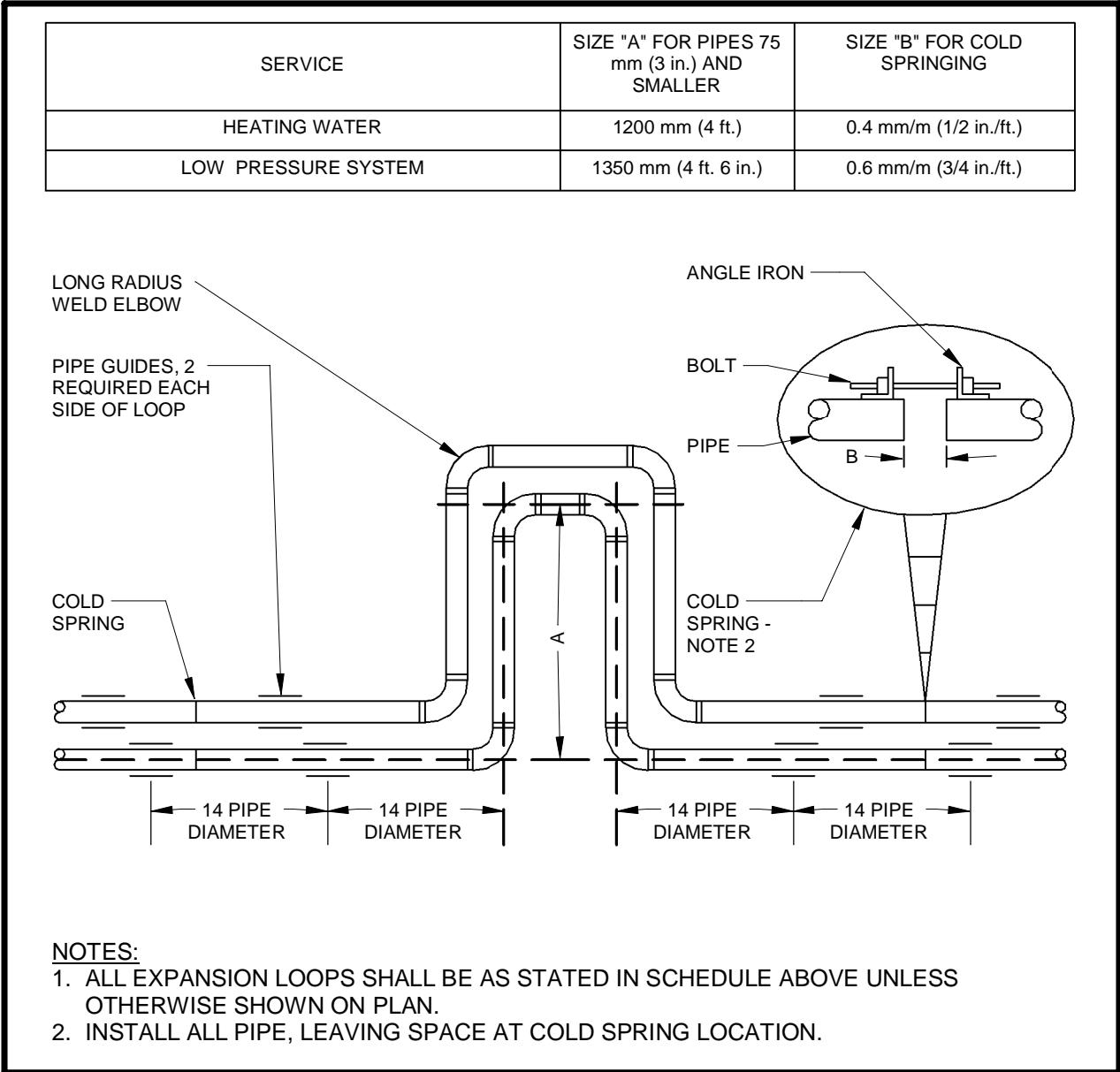
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NEW SEATON PARAMEDIC STATION
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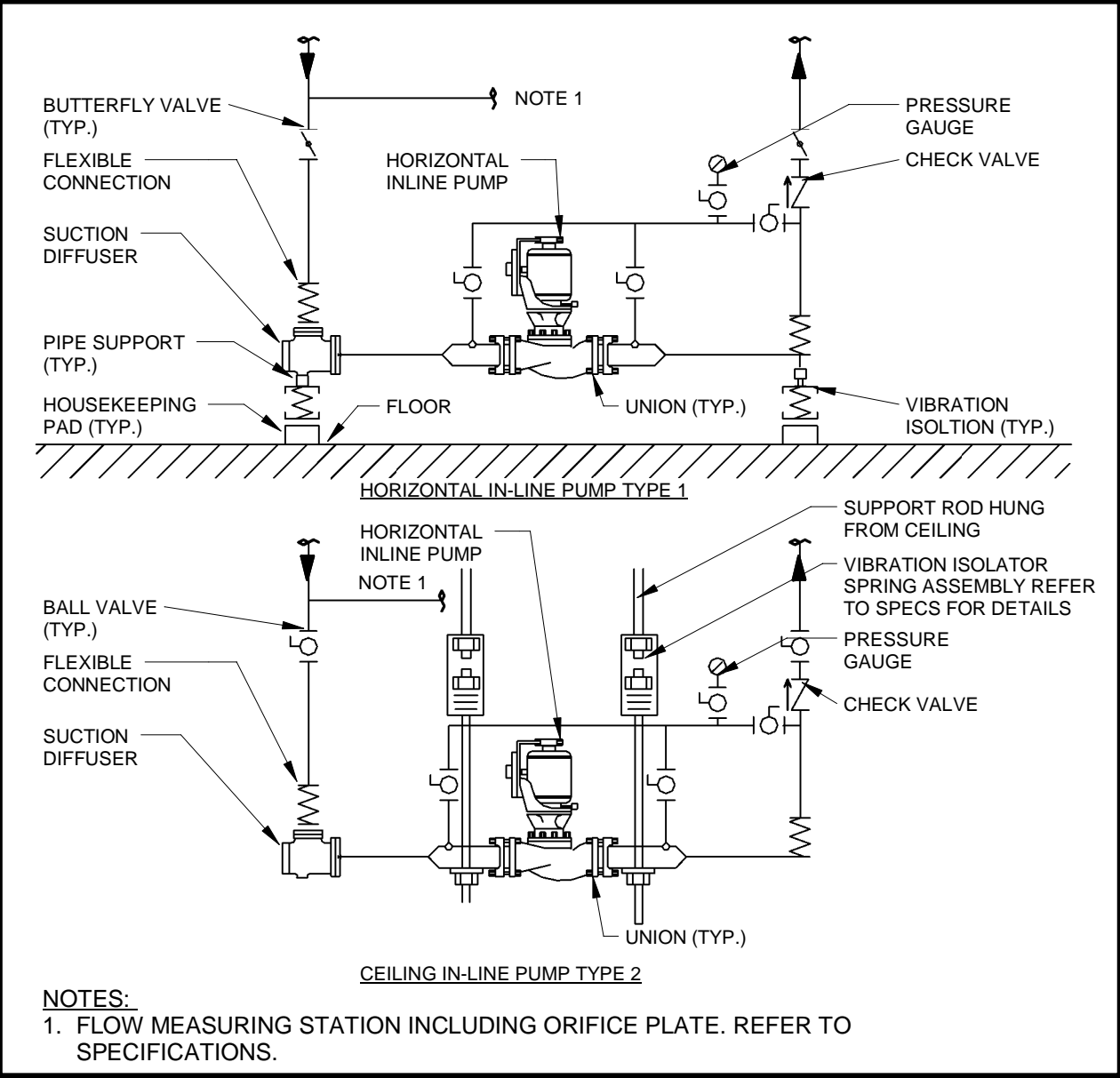
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CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 804	SHEET NO.



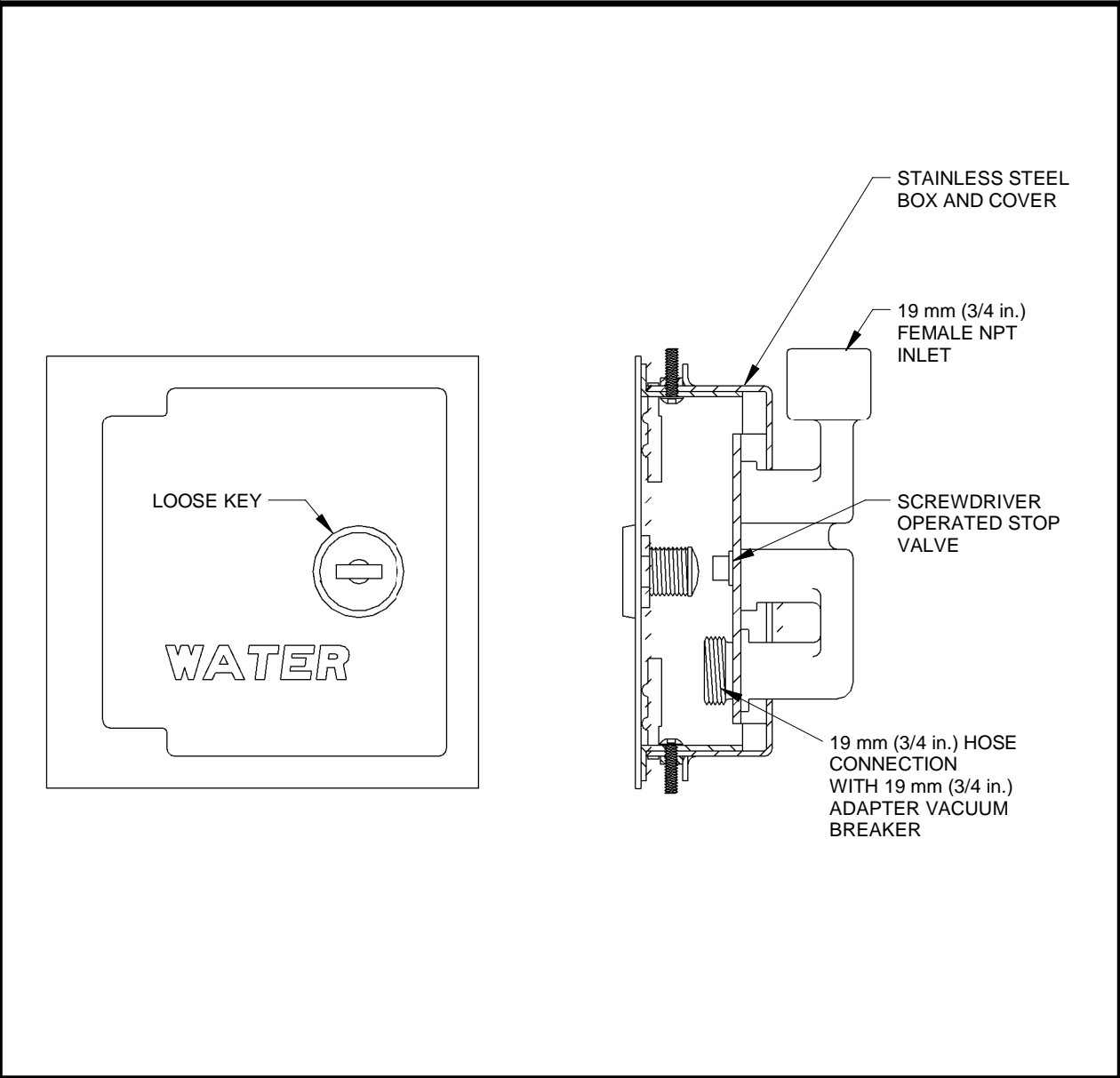
1 FLOOR CLEANOUT
Scale: NTS



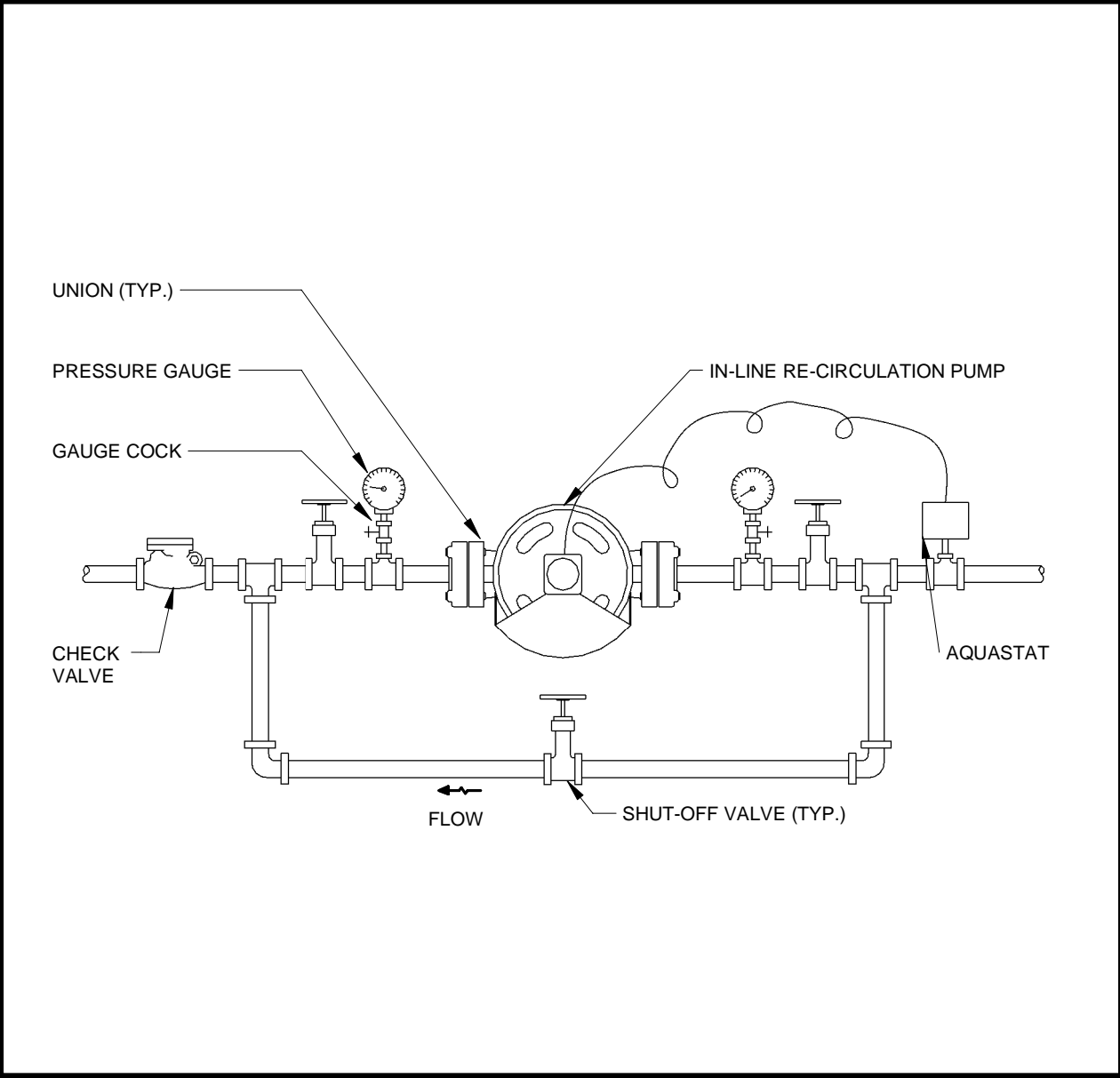
2 HEATING PIPING EXPANSION LOOP DETAIL
Scale: NTS



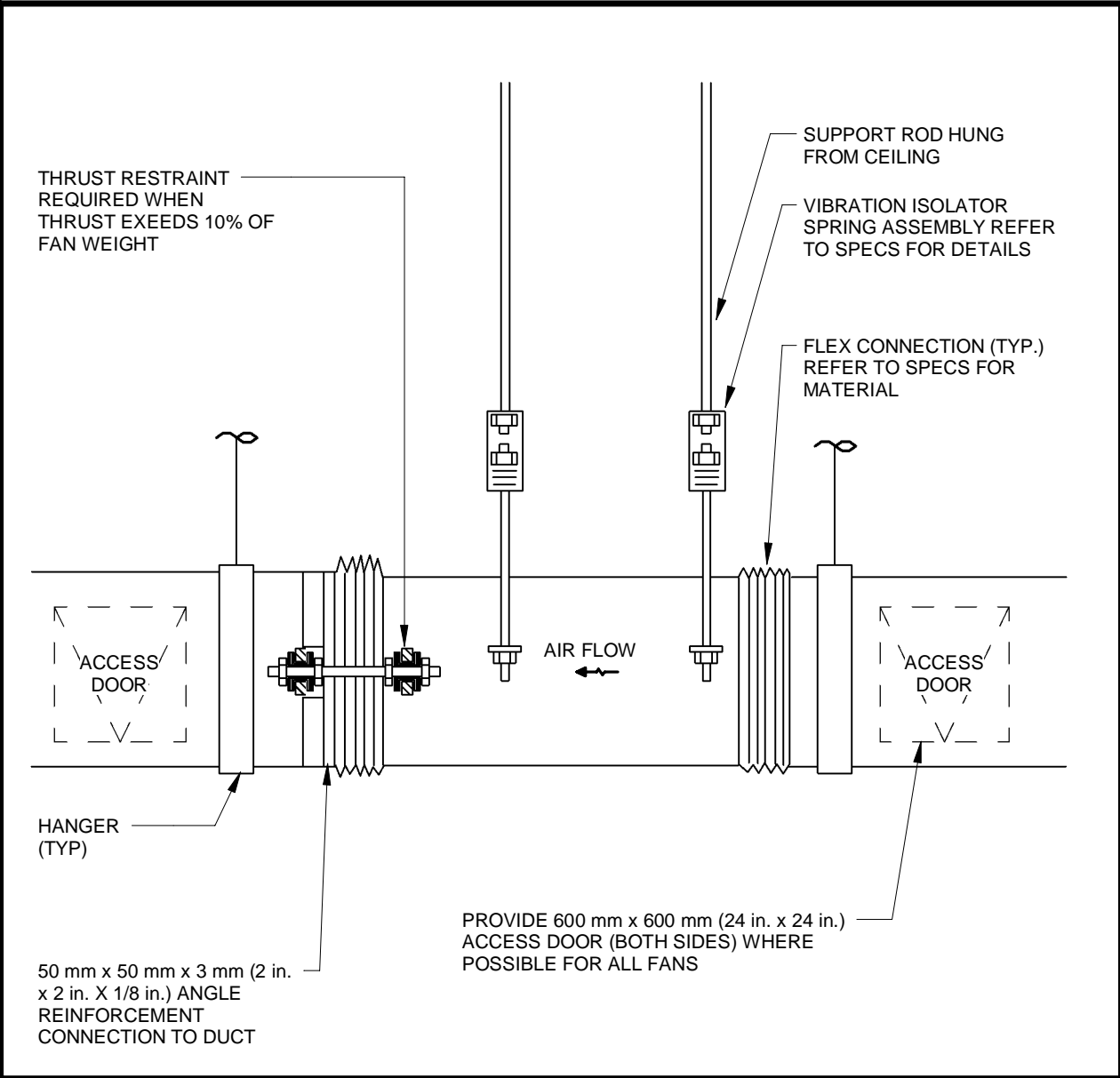
3 HORIZONTAL IN-LINE PUMP TYPE 1 & 2
Scale: NTS



4 HOSE-BIBB DETAIL
Scale: NTS



5 HOT WATER RECIRCULATION PUMP
Scale: NTS



6 INLINE FAN
Scale: NTS

B:\1300\JP-AMER (CAN) 60611569-Station RDP5-M.rvt

ALL MEASUREMENTS ARE TO BE VERIFIED BY THE CONTRACTOR ON SITE AND ANY DISCREPANCIES ARE TO BE REPORTED BEFORE PROCEEDING WITH THE WORK. THE REGION OF DURHAM ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE LOCATION OF EXISTING SERVICES AS INDICATED ON THIS DRAWING. DO NOT SCALE DRAWINGS.

1890 Fifth Concession Rd

CONSULTANT REVISIONS			

NO.	DATE	NAME	REVISIONS
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PRIME CONSULTANT




AECOM Canada Ltd.
50 Sportsworld Crossing Road, Suite 290
Kitchener, Ontario, N2P 0A4
519 650 5313 tel 519 650 3424 fax
www.aecom.com

SUB CONSULTANT



DESIGN BY: Designer	SCALE: As Indicated
DRAWN BY: Author	DATE: 10/28/20
CHECKED BY: Checker	CONSULTANT PROJECT NO. 60611569
APPROVED BY: Approver	CLIENT FILE No.: 811/20

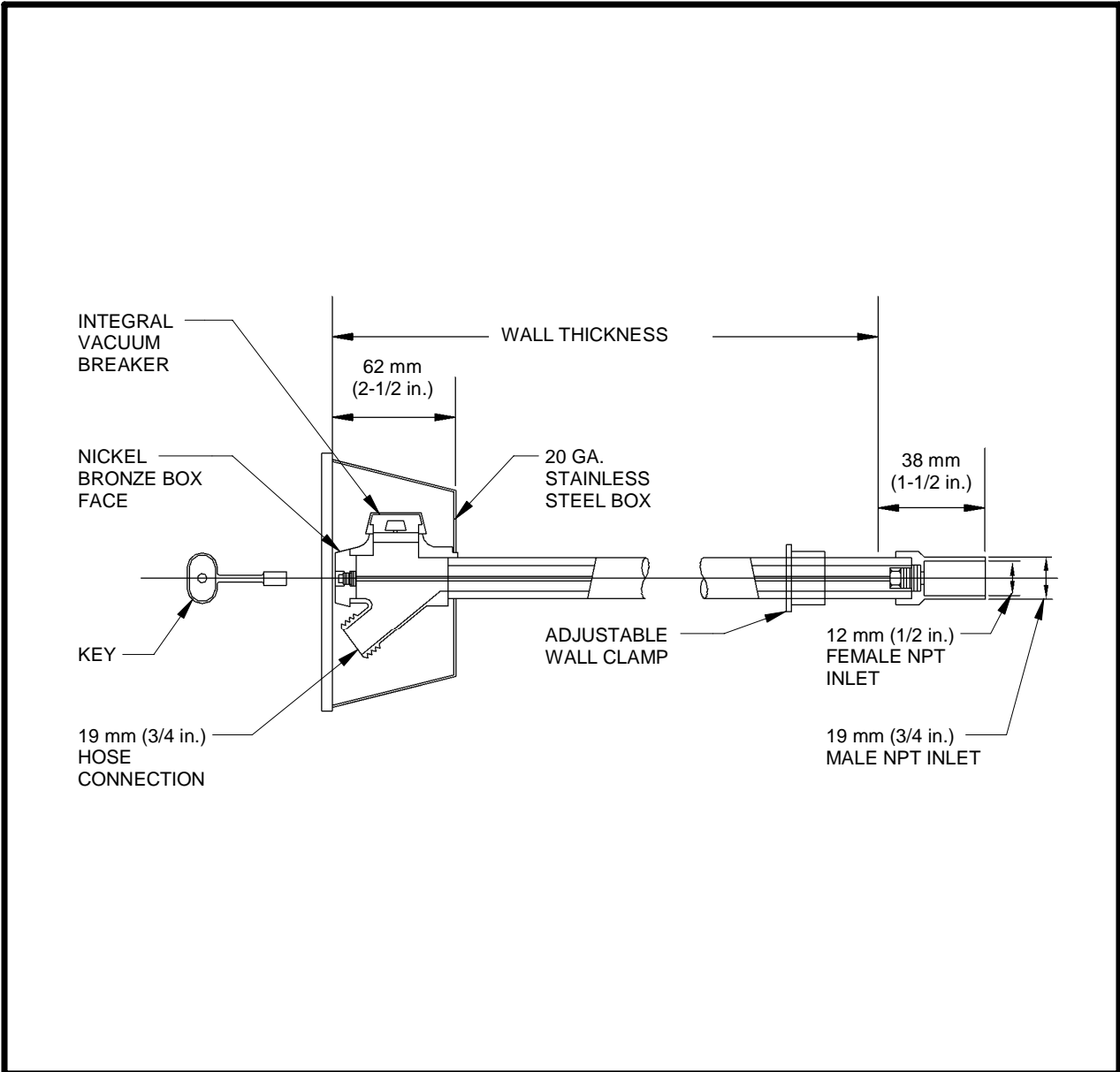
CONTRACT REVISIONS				
			</	



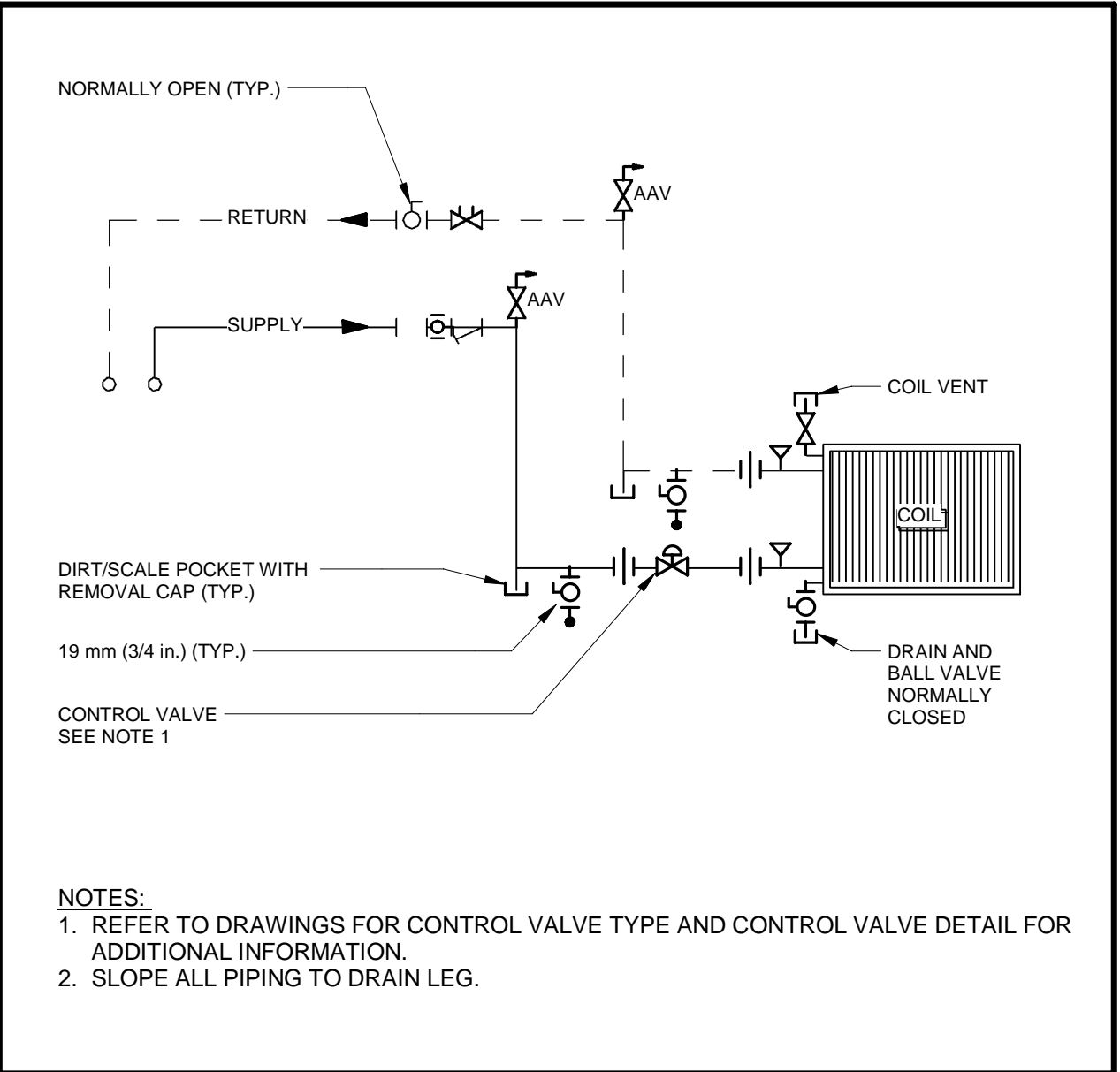
THE REGIONAL MUNICIPALITY
OF DURHAM
WORKS DEPARTMENT
DESIGN, CONSTRUCTION & ASSET MANAGEMENT

NEW SEATON PARAMEDIC STATION
AND TRAINING FACILITY IN PICKERING
MECHANICAL STANDARD DETAILS

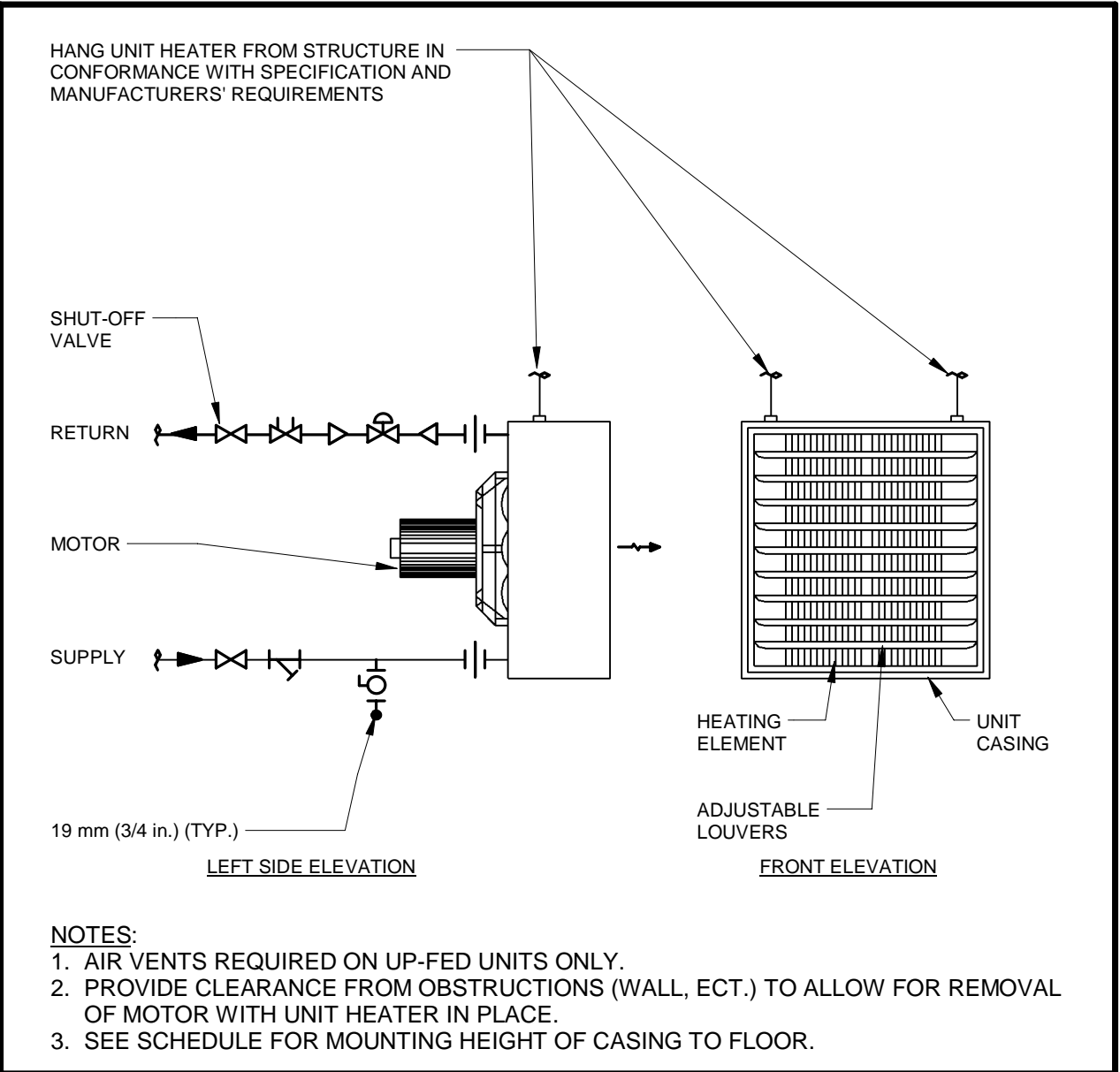
PROPERTY NO.	FACILITIES CODE	FACILITIES PROJECT NO. PO61- 18- 01
CONTRACT NO. T- 1160- 2021	DRAWING NO. M- 805	SHEET NO.



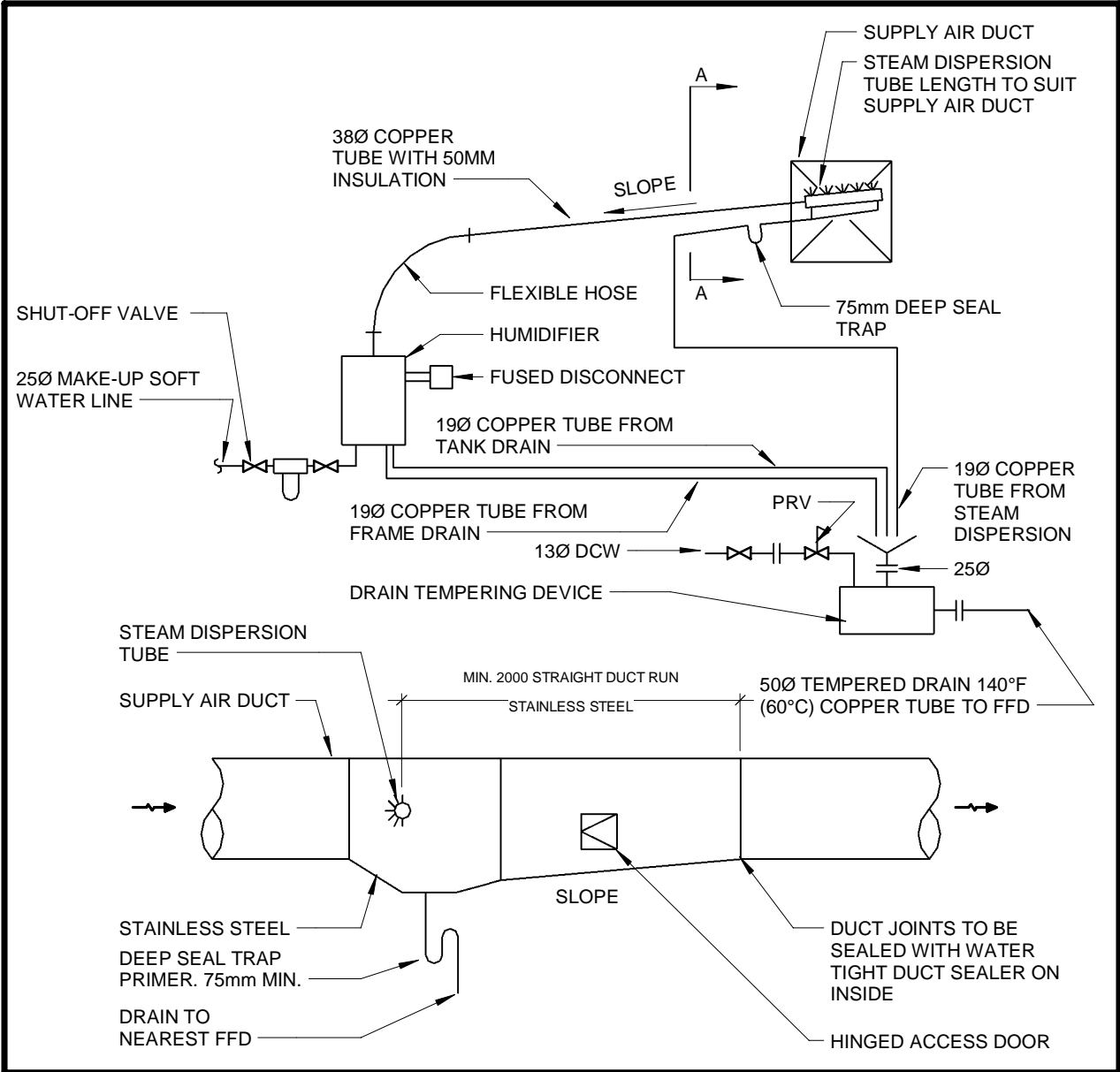
1 | NON-FREEZE HOSE-BIBB
Scale: NTS



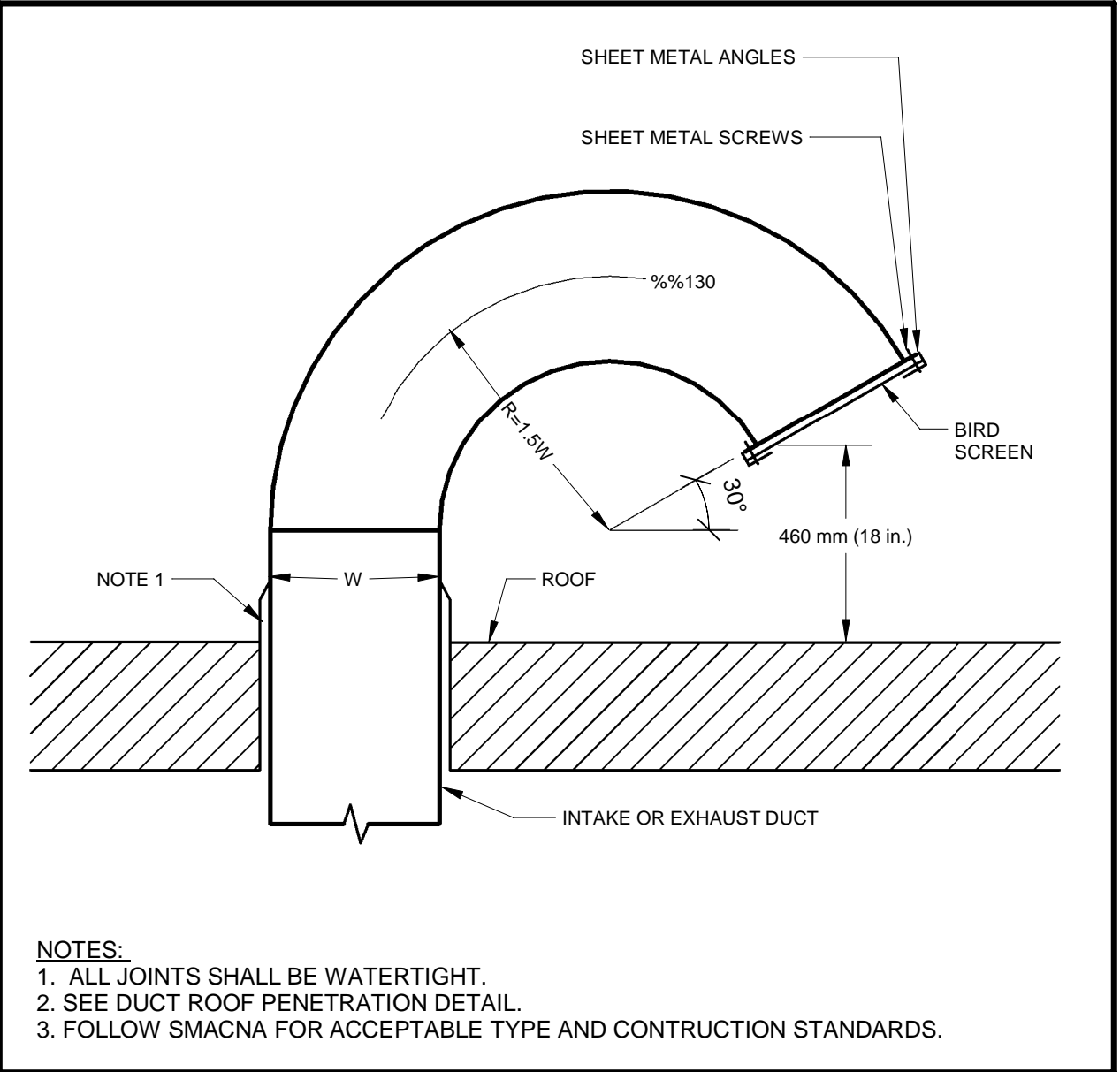
3 | TOP BRANCH TAKE-OFF
Scale: NTS



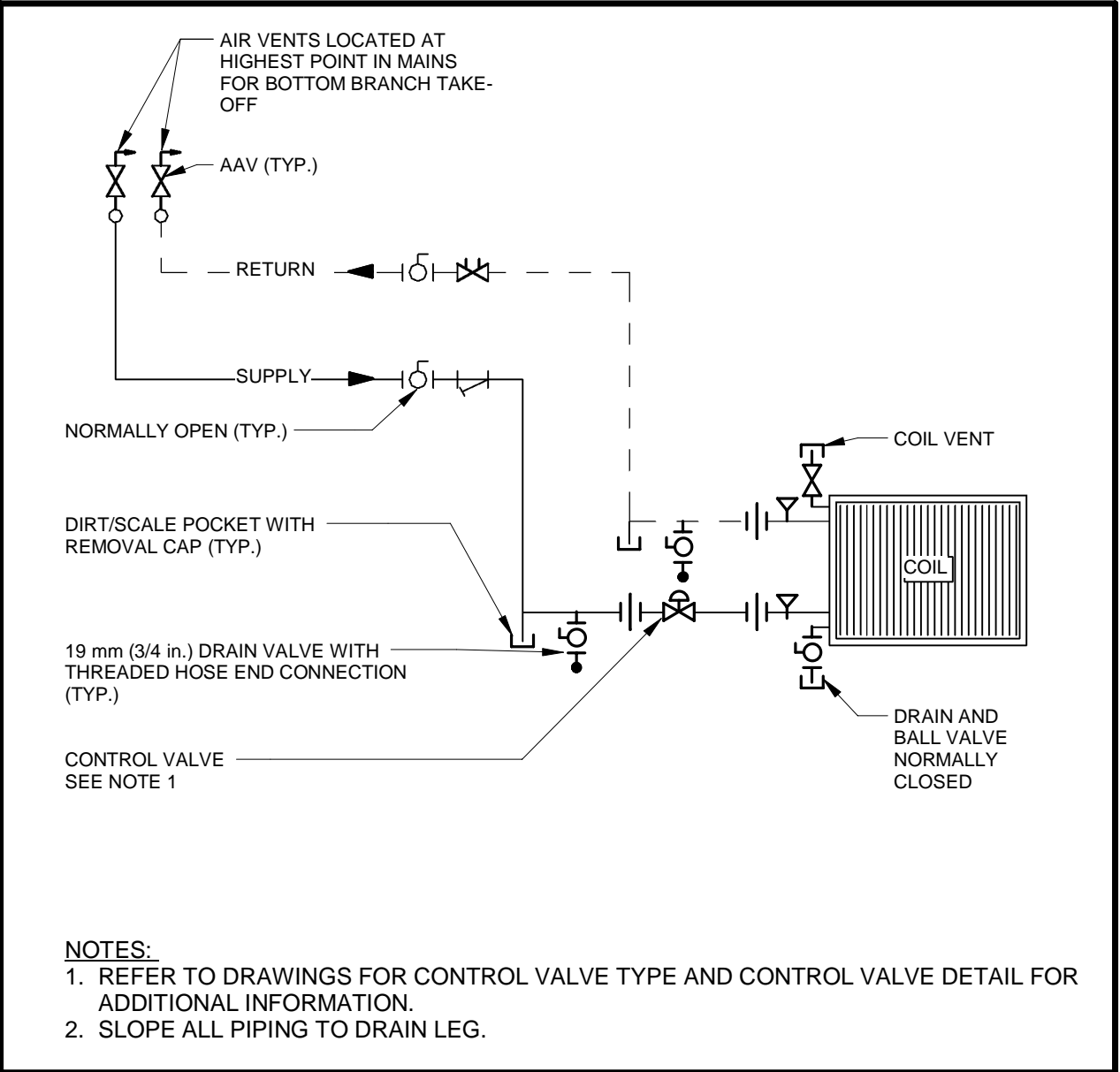
5 | UNIT HEATER CONNECTION
Scale: NTS



2 | DUCT MOUNTED HUMIDIFIER DETAIL
Scale: NTS



4 | TYPICAL GOOSENECK
Scale: NTS



6 | BOTTOM BRANCH TAKE-OFF
Scale: NTS