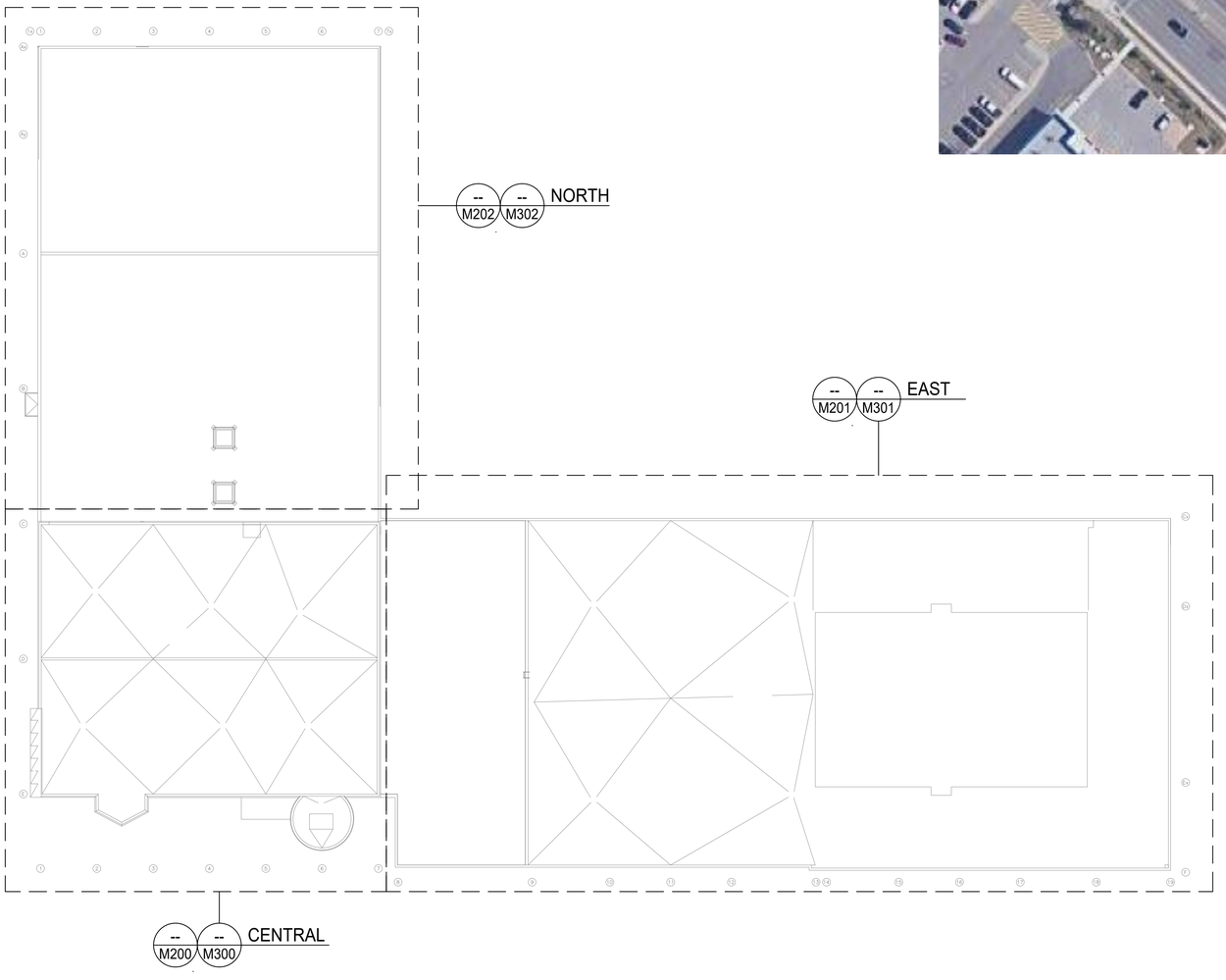
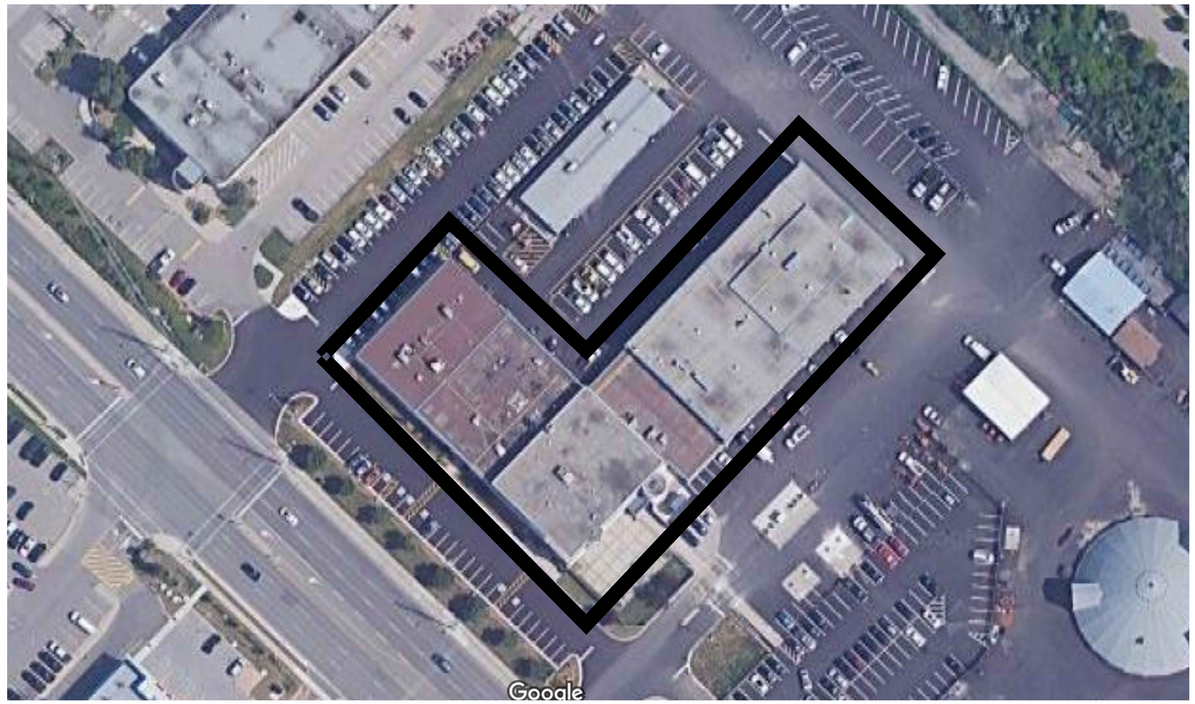
DRAWING LIST	
M100	MECHANICAL BUILDING AREA PLAN AND SITE PLAN AND DRAWING LIST
M101	MECHANICAL DETAILS
M102	MECHANICAL LEGEND AND CONTROL OF SEQUENCES
M103	MECHANICAL EQUIPMENT SCHEDULE
M200	MECHANICAL DEMOLITION – HVAC ROOF PLAN – CENTRAL
M201	MECHANICAL DEMOLITION – HVAC ROOF AND GROUND FLOOR PLAN – EAST
M202	MECHANICAL DEMOLITION – HVAC ROOF PLAN – NORTH
M300	MECHANICAL NEW CONSTRUCTION – HVAC ROOF PLAN – CENTRAL
M301	MECHANICAL NEW CONSTRUCTION – HVAC ROOF AND GROUND FLOOR PLAN – EAST
M302	MECHANICAL NEW CONSTRUCTION – HVAC ROOF PLAN – NORTH
M400	MECHANICAL DEMOLITION AND NEW CONSTRUCTION – DOMESTIC HOT WATER PLANT REPLACEMENT
M401	MECHANICAL DEMOLITION AND NEW CONSTRUCTION – WATER HEATER DISTRIBUTION DIAGRAM



1 M100 BUILIDNG AREA PLAN
SCALE: 1:250



2 M100 SITE PLAN
SCALE: NTS

SCOPE OF WORK

1. ALL WORK AS PER DRAWINGS, SPECIFICATIONS AND DETAILS.
2. REPLACE SEVEN(7) PACKAGED ROOF TOP A/C UNITS:
   - 2.1. PHASE 1
     - 2.1.1. TEMPORARY DISCONNECT AND REMOVE FIVE(5) DOWN FLOW UNITS (HVAC–2, HVAC–5, HVAC–6, HVAC–7 AND AC–5) TO ALLOW TAKING MEASUREMENT FOR REQUIRED CUSTOM ADAPTER CURBS PRODUCTION;
     - 2.1.2. REINSTALL UNIT AND MAKE OPERATIONAL UNTIL REPLACEMENT;
     - 2.1.3. PERFORM AIR AUDIT ON ALL ROOF TOP UNITS; SUPPLY AIR, RETURN AIR AND MINIMUM OUTDOOR AIR;
   - 2.2. PHASE 2
     - 2.2.1. DISCONNECT, REMOVE AND DISPOSE ALL UNITS C/W ALL ACCESSORIES;
     - 2.2.2. SUPPLY AND INSTALL NEW UNITS AS INDICATED;
     - 2.2.3. INTEGRATE UNITS TO THE BUILDING AUTOMATION SYSTEM (BMS).
     - 2.2.4. CONNECT NATURAL GAS AND ELECTRICAL SERVICES;
     - 2.2.5. ALL ROOF TOP UNITS, EXCEPT RTU–8 MINIMUM OUTDOOR AIR SETUP SHALL BE ADJUSTED TO MATCH THE EXISTING;
     - 2.2.6. ROOF TIP UNIT RTU–8;
       - 2.2.6.1. REMOVE EXISTING ROOF CURB AND ADAPTER CURB, DUCTWORK THROUGH THE ROOF, BYPASSES DUCTWORK WITH DAMPERS AND CONTROLS (UNIT MASTER CONTROLLER, THERMOSTATS AND STATIC PRESSURE SENSOR).
       - 2.2.6.2. SUPPLY AND INSTALL NEW ROOF CURB, AND TRANSITIONS TO THE EXISTING DUCTWORK IN THE CEILING SPACE BELOW.
       - 2.2.6.3. PROVIDE MODIFICATIONS TO THE DUCTWORK, PROVIDE NEW SUPPLY DIFFUSERS AND RETURN GRILLES.
       - 2.2.6.4. BALANCE THE ENTIRE 2nd FLOOR DIFFUSERS AND GRILLES AS INDICATED. BALANCING SHALL BE PERFORMED THROUGH DEFUNCT DAMPER BOXES LABELED AS Dxx, BY LOCKING DAMPER INTO THE POSITION. IF REQUIRE ALLOW FOR INSTALLATION OF BALANCING DAMPERS ON THE INDIVIDUAL DIFFUSERS.
3. REPLACE EIGHT(8) EXHAUST FANS AS INDICATED.
   - 3.1. PRIOR TO ANY WORK, PERFORM AIR AUDIT ON ALL FANS, NEW FANS AIR FLOW SHALL BE ADJUSTED TO MATCH THE EXISTING.
   - 3.2. NEW FANS EF1, EF6 AND EF7 SHALL BE INSTALLED ON THE EXISTING ROOF CURB. MEASURE, INSPECT AND CLEAN EXISTING CURB TO ALLOW INSTALLATION OF THE NEW FAN;
   - 3.3. NEW FANS EF2, EF3 AND EF4 SHALL BE INSTALLED ON NEW ROOF CURB.
   - 3.4. NEW TAIL PIPE EXHAUST FANS EF5 AND EF8 SHALL BE INSTALLED ON THE EXISTING FAN ROOF SUPPORT.
   - 3.5. ALL FANS SHALL BE RECONNECTED TO THE EXISTING DUCTWORK AS INDICATED.
   - 3.6. PROVIDE NEW FAN STARTERS AND CONTROL INTEGRATION TO THE BUILDING AUTOMATION SYSTEM (BMS).
4. REPLACE EXISTING DOMESTIC WATER HEATER, C/W ALL ACCESSORIES AND VENTING.
   - 4.1. NEW VENTING AND COMBUSTION AIR INTAKE SHALL BE INSTALLED IN THE EXISTING CHIMNEY.
   - 4.2. RECONNECT TO THE EXISTING DOMESTIC COLD, HOT AND RE–CIRCULATION LINES. PROVIDE NEW ISOLATION VALVES, SENSORS AND GAUGES.
5. RE–LABEL ALL EQUIPMENT (ROOF TOP UNITS, EXHAUST FANS AND DOMESTIC WATER HEATER) AS INDICATED IN THE EQUIPMENT SCHEDULE. THE NEW LABELS SHALL BE INCLUDED ON ALL UNITS, BMS AND RELATED ELECTRICAL.
6. INTRUSIVE WORK SERVICES REQUIRING INTERRUPTION TO THE FACILITY OPERATION, SHALL BE COMPLETED AFTER HOURS OR WEEKENDS.
7. DISCONNECT AND REMOVE EXHAUST DUCTWORK AND SPRINKLER HEADS ABOVE THE WASHROOM AND OFFICE AREA AROUND TO ALLOW CEILING REMOVAL AND INSTALLATION OF THE STRUCTURAL SUPPORTS. REINSTALL NEW SPRINKLER HEADS AND PIPING AND INSTALL NEW DUCTWORK AND EXHAUST GRILLES UPON COMPLETION.
   - 7.1. ALL SPRINKLER RELATED WORK SHALL BE COMPLETED BY THE BASE BUILDING VENDOR 'EPI FIRE PROTECTION'. FIRE PROTECTION CONTRACTOR TO CARRY SERVICES OF A PROFESSIONAL ENGINEER TO PROVIDE STAMPED CERTIFICATE LETTER THAT ALL WORK IS COMPLETED IN ACCORDANCE WITH 'NFPA 13'.
8. CONTROLS (BMS) – ALL CONTROLS WORK SHALL BE COMPLETED BY THE BASE BUILDING CONTROLS CONTRACTOR:
   - 8.1. MODERN NIAGARA; CONTACT: EVGENY FILATOV (efilatov@modernniagara.com) AND MAHSA BARAZANDEH (mbarazandeh@modernniagara.com)
   - 8.2. ALL RTUs SHALL BE INTEGRATED TO THE BUILDING AUTOMATION SYSTEM (BAS) THROUGH THE TERMINAL STRIP, ALL POINTS SHALL BE CONNECTED AND SEQUENCES OF OPERATION TO REMAIN EXISTING. MODIFY SEQUENCE ONLY TO ADAPT TO THE NEW UNIT (EG. STAGES OF COOLING).
   - 8.3. SCOPE OF WORK FOR THE RTU–8 IS THE UNIT REPLACEMENT, DUCTWORK MODIFICATIONS DUE TO THE RECENT INTERIOR CHANGES AND RE–BALANCING OF THE ENTIRE 2nd FLOOR. THE CONTROLS SCOPE FOR THE FLOOR IS TO REMOVE BYPASS DAMPERS AND STATIC PRESSURE SENSOR AS PART OF THE CITY ONGOING PROJECT – CONVERSION TO THE CONSTANT VOLUME SUPPLY SYSTEM. LOCATION OF THE THERMOSTAT(S) CONTROLLING THE UNIT, ZONE CONTROLS AND CONTROL STRATEGIES FOR THIS FLOOR ARE NOT PART OF THIS PROJECT.

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client:

MISSISSAUGA

client project no.
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project:
MAVIS S. MECH. & ROOF RENEWAL
CITY OF MISSISSAUGA

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project engineer	project designer
MT	BE

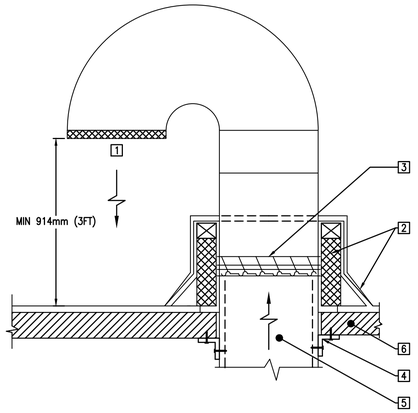
sheet title
MECHANICAL
BUILIDNG AREA PLAN
SITE PLAN
DRAWINGS LIST

scale	drawn by	checked by	drawing no.
AS NOTED	BE	MT	M100
project no.	plot date:		
DE23-566	2024-07-04		

PLOT DATE: Jul 4, 2024

DETAIL 1 – EXHAUST AIR GOOSENECK TERMINATION

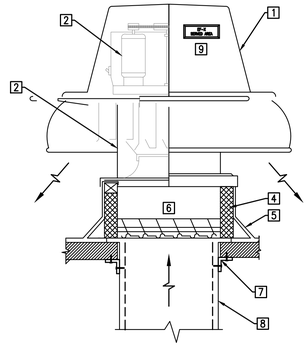
NOT TO SCALE



1. HEAVY DUTY STAINLESS STEEL BIRD SCREEN, INSTALL AT DUCT FLANGE WITH REMOVABLE HARDWARE
2. INSULATED ROOF CURB TO SUIT ROOF CONSTRUCTION, ROOFING MEMBRANE, FLASHING AND ALL OTHER ROOFING WORK BY BASEBUILDING ROOFING CONTRACTOR
3. BACKDRAFT DAMPER TO SUIT DUCT SIZE
4. ANGLE SUPPORTS C/W FASTENERS AND CAULKING
5. EXHAUST AIR DUCTWORK C/W INSULATION AS SPECIFIED, SEE PLANS FOR SIZES AND ROUTING.
6. FINISHED ROOFING

DETAIL 2 – ROOF MOUNTED EXHAUST FAN

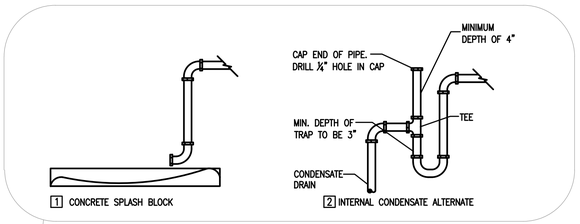
NOT TO SCALE



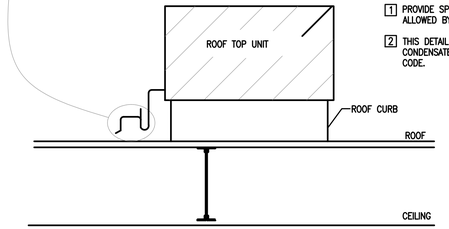
1. REMOVABLE ALUMINUM COVER
2. BELT OR DIRECT DRIVE (REFER TO SCHEDULE) FAN MOTOR WITH NEMA 3 ELECTRICAL DISCONNECT
3. STAINLESS STEEL BIRD SCREEN
4. PREFABRICATED INSULATED ROOF CURB TO SUIT ROOF (FLAT, PITCHED OR SLOPED)
5. ROOF FLASHING TO SUIT ROOF CONSTRUCTION BY BASEBUILDING ROOFING CONTRACTOR
6. FACTORY SUPPLIED BACKDRAFT DAMPER TO SUIT OPENING SIZE
7. ANGLE SUPPORTS C/W FASTENERS AND CAULKING
8. EXHAUST AIR DUCTWORK C/W INSULATION AS SPECIFIED, SEE PLANS FOR SIZES AND ROUTING.
9. EQUIPMENT NAMEPLATE, INDICATE – FAN TAG, SERVED AREA, POWER SOURCE

DETAIL 3 – ROOF TOP UNIT CONDENSATE DRAIN

NOT TO SCALE



NOTE: MIN OF 1" ON ALL CONDENSATE DRAIN AND VENT LINES

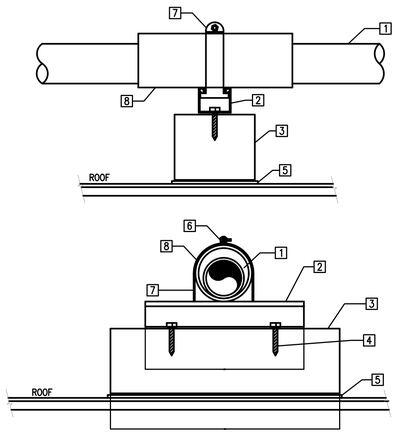


NOTES:

1. PROVIDE SPLASH BLOCKS WHERE ALLOWED BY CODE.
2. THIS DETAIL APPLICABLE WHEN PIPED CONDENSATE SYSTEM IS REQUIRED BY CODE.

DETAIL 4 – ROOF GAS PIPE SUPPORT

NOT TO SCALE

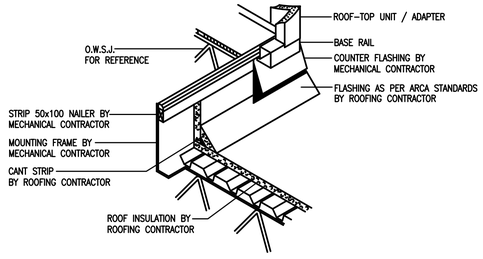


1. GAS PIPE, SEE SIZES ON THE DRAWINGS
2. GALVANIZED OR CADMIUM PLATED UNISTRUT
3. 4"x4" OR 4"x6" PRESSURE TREATED BLOCK.
4. ⅜" LAG BOLTS 1½" LONG. TYPICAL.
5. ADDITIONAL LAYER OF ROOFING MATERIAL UNDER PRESSURE TREATED BLOCK
6. NUT, BOLT, AND LOCKWASHER
7. CONDUIT OR SPEED CLAMP
8. PAINTED SCH. 40 PVC SLEEVE, MINIMUM 4" LONG AT EACH CLAMP LOCATION, ONE SIZE LARGER THAN O.D. OF GAS PIPE TO ALLOW FOR GAS PIPE EXPANSION.

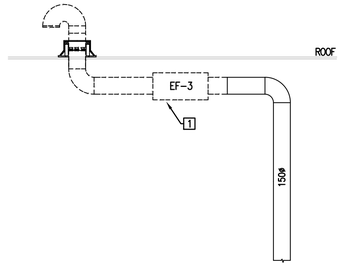
NOTE:
PROVIDE SUPPORTS AT A MAXIMUM 8'–0" ON CENTER AND AT EACH CHANGE OF DIRECTION AT A MAXIMUM OF 2'–0" ON EACH SIDE. GAS PIPING TO BE INSTALLED IN COMPLIANCE WITH THE GAS CODE.

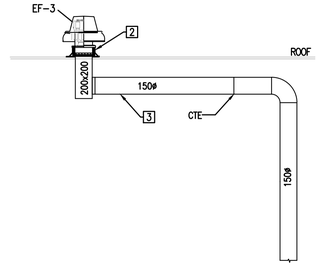
DETAIL 5 – ROOF CURB DETAIL

NOT TO SCALE



DETAIL 6 – EF-3 DEMOLITION AND NEW CONSTRUCTION





1. DISCONNECT AND REMOVE EXISTING CENTRIFUGAL FAN, C/W SUPPORT HANGERS AND BRACKETS, DUCTWORK THROUGH THE ROOF AND GOOSENECK.
2. SUPPLY AND INSTALL NEW EXHAUST FAN C/W NEW ROOF CURB.
3. PROVIDE NEW DUCTWORK AS INDICATED AND CONNECT TO THE EXISTING.

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MISSISSAUGA

client project no.
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project:
MAVIS S. MECH. & ROOF RENEWAL
CITY OF MISSISSAUGA

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Jul 04, 2024
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project engineer: MT
project designer: BE

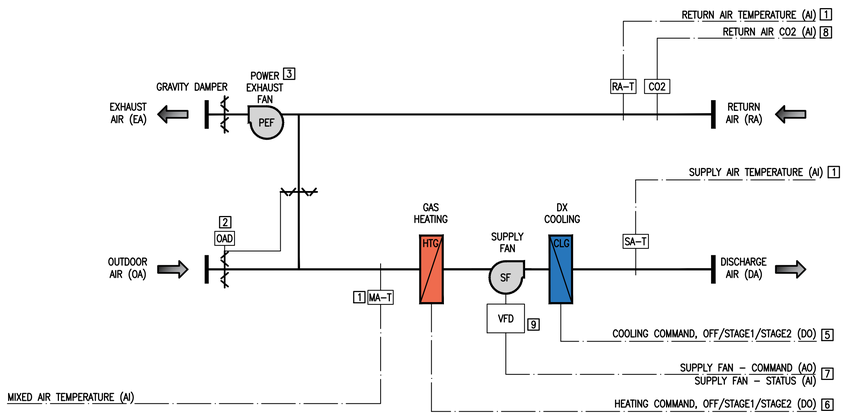
sheet title
DETAILS

scale	drawn by	checked by	drawing no.
AS NOTED	BE	MT	M101
project no. DE23-566	plot date: 2024-07-04		

PLOT DATE: JULY 4, 2024

DETAIL 7 – ROOF TOP UNITS RTU–2, RTU–5, RTU–6, RTU–7, RTU–8, RTU–10 & RTU–11 CONTROLS

NOT TO SCALE



ZONE TEMPERATURE (AI) — T
ZONE SETPOINT (AI) 4

1 FIELD INSTALLED SUPPLY, RETURN AND MIXED AIR TEMPERATURE SENSORS, TIE INTO THE BAS.

2 OUTDOOR AIR DAMPER/ ECONOMIZER, CONTROLLED BY INTERNAL RTU CONTROLLER

3 POWER EXHAUST (ONLY ON RTU–8, RTU–10), CONTROLLED BY INTERNAL RTU CONTROLLER.

4 EXISTING ZONE TEMPERATURE SENSOR AND SETPOINT. SHOWN FOR REFERENCE ONLY.

5 COOLING CONTROLS, SEE NUMBER OF STAGES IN THE SCHEDULE

6 HEATING CONTROLS, SEE NUMBER OF STAGES IN THE SCHEDULE

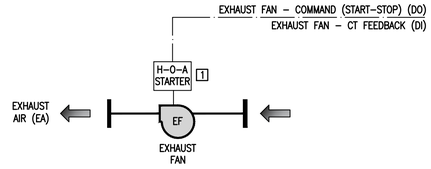
7 SUPPLY FAN START/STOP, PROVIDE FIELD INSTALLED CURRENT TRANSDUCER FOR THE FAN STATUS.

8 FIELD INSTALLED CO2 SENSOR IN THE DUCT BELOW, WIRE TO THE UNIT CONTROLLER FOR DCV CONTROLS.

9 SUPPLY FAN VFD (ONLY ON RTU–8) SHALL BE LOCKED TO THE CONSTANT FLOW TO MATCH THE EXISTING UNIT FLOW.

DETAIL 8 – EXHAUST FAN EF1, EF3, EF6 & EF7 CONTROL

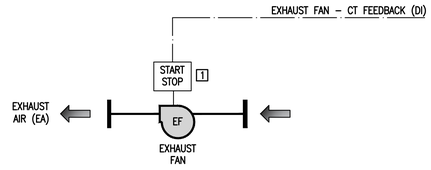
NOT TO SCALE



1 PROVIDE NEW MAGNETIC H–O–A STARTER. INTEGRATE TO THE BAS.
SUPPLY AND INSTALL NEW CURRENT TRANSDUCER FOR FEEDBACK TO THE BAS.

DETAIL 9 – EXHAUST FAN EF5 & EF8 CONTROL

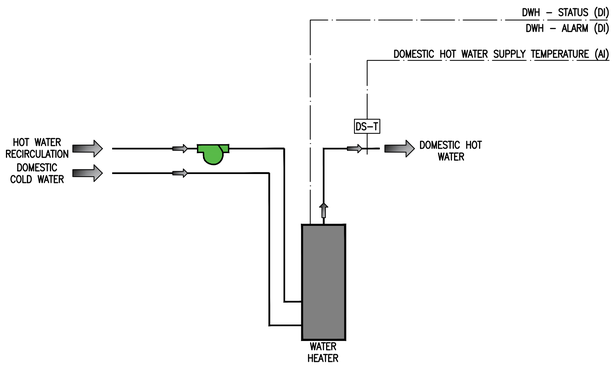
NOT TO SCALE



1 PROVIDE NEW MANUAL START–STOP MAGNETIC STARTER.
SUPPLY AND INSTALL NEW CURRENT TRANSDUCER FOR FEEDBACK TO THE BAS.

DETAIL 10 – DOMESTIC WATER HEATING CONTROL SCHEMATIC

NOT TO SCALE



LEGEND

SYMBOL	DESCRIPTION
	EXISTING TO BE REMOVED
	EXISTING TO REMAIN
	NEW WORK
	CONTROL WIRE
	DOMESTIC COLD WATER (DCW)
	DOMESTIC HOT WATER (DHW)
	DOMESTIC HOT WATER RECIRC. (DHWR)
SAN SAN	SANITARY DRAIN
	RETURN/EXHAUST DUCT UP
	RETURN/EXHAUST DUCT DOWN
	SUPPLY DUCT UP
	SUPPLY DUCT DOWN
	INTERNALLY LINED DUCT
	THERMALLY INSULATED DUCT
	DUCT ACCESS PANEL
	SQUARE CONE/PLAQUE DIFFUSER
	RETURN GRILLE
	CEILING TROFFER DIFFUSER
	VAV TERMINAL UNIT
	VAV TERMINAL UNIT WITH REHEAT
BD	BALANCING DAMPER
BDD	BACK DRAFT DAMPER
FD	FIRE DAMPER
T	THERMOSTAT
OED	OPEN ENDED DUCT
BDD	BACK DRAFT DAMPER
CTE	CONNECT TO EXISTING
FF	FINISHED FLOOR LEVEL
FD	FLOOR DRAIN
FFD	FLOOR FUNNEL DRAIN
FD	HUB DRAIN
VFD	VARIABLE FREQUENCY DRIVE
TYP	TYPICAL
	ISOLATION VALVE
	PUMP
SG	SUCTION GUIDE
	BALANCING VALVE
	CHECK VALVE
	PRESSURE REDUCING VALVE
	STRAINER
	PRESSURE RELIEF VALVE
LW	LOW WATER CUT OFF
FS	FLOW SWITCH
MV	MANUAL AIR VENT
AAV	AUTOMATIC AIR VENT
T	TEMPERATURE GAUGE
	PRESSURE GAUGE
ANG	NATURAL GAS REGULATOR

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project engineer: MT
project designer: BE

sheet title:
LEGEND AND
CONTROLS SEQUENCES
CONTROL SCHEMATIC DETAIL

scale	drawn by	checked by	drawing no.
AS NOTED	BE	MT	M102
project no.	plot date:		
DE23-566	2024-07-04		

PLOT DATE: Jul 4, 2024

ROOF TOP UNIT SCHEDULE

TAG (EXISTING)	TAG (NEW) (*1)	AREA SERVING	MANUFACTURER (*3)	MODEL	SUPPLY FAN		HEATING CAPACITY (GAS)			COOLING CAPACITY (DX)				POWER		PHYSICAL		NOTES
					AIR FLOW lps(CFM)	E.S.P. kPa(in.w.c.)	STAGES	INPUT kW(MBh)	OUTPUT kW(MBh)	REFRIG ERANT	STAGES	TOTAL kW(MBh)	SENSIBLE kW(MBh)	V/PH/Hz	MCA/MOCP	DIMENSION (HxWxL) mm(in)	WEIGHT kg(lb)	
HVAC-2	RTU-2	GROUND FLOOR	CARRIER (OR APPROVED ALTERNATE)	48FCFA05A2A1	769(1,630)	0.13(0.5)	2	35(120.0) 44(150.0)	28(96.0) 35(120.0)	R410A	1	14.2(48.3)	10(34)	575/3/60	9/15	848x1,184x1,890 (33.4x46.6x74.4)	300(662)	DOWN DISCHARGE UNIT C/W SUPPLY FAN, S/S HEAT EXCHANGER, FILTER SECTION (MERV 13), HINGED ACCESS PANELS, 0-100% ECONOMIZER DAMPER WITH INTERNAL CONTROLLER, CO2 SENSOR FOR DCV OPERATION, CONDENSATE TRAP, U/F DISCONNECT SWITCH AND UTILITY RECEPTACLE. CONTROLS - TERMINAL STRIP FOR BAS INTEGRATION AND CONTROL. ROOF SUPPORT - ADAPTER ROOF CURB ON TOP OF EXISTING CURB TO ALLOW UNIT OFFSET AND 180' ROTATION. (*2)
HVAC-5	RTU-5	GROUND FLOOR	CARRIER (OR APPROVED ALTERNATE)	48FCEA06A2A1	945(2,000)	0.13(0.5)	1	32.2(110.0)	25.8(88.0)	R410A	1	17.3(59.1)	12.9(43.9)	575/3/60	10/15	848x1,184x1,890 (33.4x46.6x74.4)	310(684)	DOWN DISCHARGE UNIT C/W SUPPLY FAN, S/S HEAT EXCHANGER, FILTER SECTION (MERV 13), HINGED ACCESS PANELS, 0-100% ECONOMIZER DAMPER WITH INTERNAL CONTROLLER, CO2 SENSOR FOR DCV OPERATION, CONDENSATE TRAP, U/F DISCONNECT SWITCH AND UTILITY RECEPTACLE. CONTROLS - TERMINAL STRIP FOR BAS INTEGRATION AND CONTROL. ROOF SUPPORT - ADAPTER ROOF CURB ON TOP OF EXISTING CURB (*2).
HVAC-6	RTU-6	GROUND FLOOR	CARRIER (OR APPROVED ALTERNATE)	48FCFM08A3A1	1,415(3,000)	0.25(1.0)	2	53(180.0) 66(224.0)	43(146.0) 53(181.0)	R410A	2	27(90.5)	19.4(66)	575/3/60	15/20	1,049x1,511x2,238 (41.3x59.5x88.1)	450(992)	DOWN DISCHARGE UNIT C/W SUPPLY FAN, S/S HEAT EXCHANGER, FILTER SECTION (MERV 13), HINGED ACCESS PANELS, 0-100% ECONOMIZER DAMPER WITH INTERNAL CONTROLLER, CO2 SENSOR FOR DCV OPERATION, CONDENSATE TRAP, U/F DISCONNECT SWITCH AND UTILITY RECEPTACLE. CONTROLS - TERMINAL STRIP FOR BAS INTEGRATION AND CONTROL. ROOF SUPPORT - ADAPTER ROOF CURB ON TOP OF EXISTING CURB TO ALLOW UNIT OFFSET AND 90' ROTATION. (*2)
AC-4	RTU-10	GROUND FLOOR	CARRIER (OR APPROVED ALTERNATE)	48FCFM07A2A1	1,135(2,400)	0.16(0.65)	2	35(120.0) 44(150.0)	28(96.0) 35(120.0)	R410A	2	21.1(72.1)	16(54.6)	575/3/60	11/15	1,052x1,184x1,890 (41.4x46.6x74.4)	360(794)	SIDE DISCHARGE UNIT WITH INSULATED BOTTOM PANEL, C/W SUPPLY FAN, POWER EXHAUST, S/S HEAT EXCHANGER, FILTER SECTION (MERV 13), HINGED ACCESS PANELS, 0-100% ECONOMIZER DAMPER WITH INTERNAL CONTROLLER, CO2 SENSOR FOR DCV OPERATION, CONDENSATE TRAP, U/F DISCONNECT SWITCH AND UTILITY RECEPTACLE. CONTROLS - TERMINAL STRIP FOR BAS INTEGRATION AND CONTROL. ROOF SUPPORT. SEE STRUCTURAL DRAWINGS FOR SUPPORT.
AC-5	RTU-11	GROUND FLOOR	CARRIER (OR APPROVED ALTERNATE)	48FCEA06A2A1	945(2,000)	0.13(0.5)	1	32.2(110.0)	25.8(88.0)	R410A	1	17.3(59.1)	12.9(43.9)	575/3/60	10/15	848x1,184x1,890 (33.4x46.6x74.4)	310(684)	DOWN DISCHARGE UNIT C/W SUPPLY FAN, S/S HEAT EXCHANGER, FILTER SECTION (MERV 13), HINGED ACCESS PANELS, 0-100% ECONOMIZER DAMPER WITH INTERNAL CONTROLLER, CO2 SENSOR FOR DCV OPERATION, CONDENSATE TRAP, U/F DISCONNECT SWITCH AND UTILITY RECEPTACLE. CONTROLS - TERMINAL STRIP FOR BAS INTEGRATION AND CONTROL. ROOF SUPPORT - ADAPTER ROOF CURB ON TOP OF EXISTING CURB (*2).
HVAC-7	RTU-7	GROUND FLOOR	CARRIER (OR APPROVED ALTERNATE)	48FCEM07A2A1	1,135(2,400)	0.13(0.5)	1	32.2(110.0)	25.8(88.0)	R410A	2	21.1(72.1)	16(54.6)	575/3/60	11/15	1,052x1,184x1,890 (41.4x46.6x74.4)	335(740)	DOWN DISCHARGE UNIT C/W SUPPLY FAN, S/S HEAT EXCHANGER, FILTER SECTION (MERV 13), HINGED ACCESS PANELS, 0-100% ECONOMIZER DAMPER WITH INTERNAL CONTROLLER, CO2 SENSOR FOR DCV OPERATION, CONDENSATE TRAP, U/F DISCONNECT SWITCH AND UTILITY RECEPTACLE. CONTROLS - TERMINAL STRIP FOR BAS INTEGRATION AND CONTROL. ROOF SUPPORT - ADAPTER ROOF CURB ON TOP OF EXISTING CURB (*2).
HVAC-8	RTU-8	SECOND FLOOR	CARRIER (OR APPROVED ALTERNATE)	48LCR024A3A1	3,775(8,000)	0.25(1.0)	2	72(248.0) 90.7(310.0)	58.5(200.0) 73.5(251.0)	R410A	3	74.6(254.6)	56.9(194.2)	575/3/60	50.4/60	1,486x2,195x4,007 (58.5x86.4x157.8)	1,260(2,800)	DOWN DISCHARGE UNIT, C/W SUPPLY FAN, S/S HEAT EXCHANGER, POWER EXHAUST FAN, FILTER SECTION (MERV 13), 0-100% ECONOMIZER DAMPER WITH INTERNAL CONTROLLER, CO2 SENSOR FOR DCV OPERATION, CONDENSATE TRAP, U/F DISCONNECT SWITCH AND UTILITY RECEPTACLE. CONTROLS - TERMINAL STRIP FOR BAS INTEGRATION AND CONTROL. ROOF SUPPORT - NEW 14" ROOF CURB.

(*1) PROVIDE LAMACOID LABEL WITH NEW TAG# ON EACH UNIT.
(*2) NEW UNIT SHALL BE INSTALLED IN THE SPECIFIC LOCATION INDICATED ON THE DRAWINGS. PRIOR TO ORDERING, CONTRACTOR SHALL VISIT THE SITE, TEMPORARY DISCONNECT (GAS, ELECTRICAL) REMOVE EXISTING UNIT AND TAKE MEASUREMENT FOR THE NEW ADAPTER OR CUSTOM MADE ROOF CURB. UNIT SHALL BE RETURNED BACK AND MAKE IT OPERATIONAL UNTIL REPLACEMENT.
(*3) CARRIER IS THE MANUFACTURER SELECTED FOR THE BASIS OF DESIGN. IN THE EVENT THAT THE CONTRACTOR AND/OR SUB-CONTRACTOR OPTS FOR AN ALTERNATIVE APPROVED MANUFACTURER, THEY SHALL BE RESPONSIBLE FOR COVERING THE CONSULTANT COSTS TO ASSESS WHETHER THE CURRENT STRUCTURE CAN ACCOMMODATE THE WEIGHT OF THE PACKAGE OUTDOOR HVAC EQUIPMENT.
ADDITIONALLY, ANY NECESSARY STRUCTURAL MODIFICATIONS TO SUPPORT THE EQUIPMENT'S WEIGHT SHALL BE BORNE BY THE CONTRACTOR AND/OR SUB-CONTRACTOR.

EXHAUST FANS SCHEDULE

TAG (EXISTING)	TAG (NEW) (*1)	LOCATION / TYPE	AREA SERVING	MANUFACTURER	MODEL	PERFORMANCE			MOTOR		PHYSICAL		MOUNTING ARRANGEMENT		CONTROLS	NOTES
						AIR FLOW lps(CFM)	S.P. kPa(in.w.c.)	RPM	V/PH/Hz	HP	DIMENSION (HxWxL or HxDIA) mm(in)	WEIGHT kg(lb)	SUPPORT	SUPPORT SIZE (HxWxL) mm(in)		
EF-1	EF1	DOWNBLAST ROOF MOUNTED EXHAUST FAN	GROUND FLOOR JANITOR ROOM	GREENHECK (OR APPROVED ALTERNATE)	GB-097-6	42(90)	0.05(0.20)	774	120/1/60	1/6	602xø620 (23.7xø24.4)	25(55)	ROOF CURB (EXISTING)	395x395 (15.5x15.5")	NEW H/O/A STARTER BAS START/STOP/STATUS	C/W CURB EXTENSION, BACKDRAFT DAMPER, BIRDSCREEN U/F DISCONNECT SWITCH, CURB CAP 482(19")SQ.
EF-3	EF2	DOWNBLAST ROOF MOUNTED EXHAUST FAN	TRENCH DRAIN EXHAUST	GREENHECK (OR APPROVED ALTERNATE)	G-060-VG	48(100)	0.06(0.25)	1,725	120/1/60	1/15	308xø485 (12.1xø19.4)	9(20)	ROOF CURB (NEW)	345x345 (13.5x13.5")	WALL TOGGLE SWITCH WITH PILOT LIGHT	C/W INSULATED ROOF CURB, BACKDRAFT DAMPER, BIRDSCREEN U/F DISCONNECT SWITCH
EF-10	EF3	DOWNBLAST ROOF MOUNTED EXHAUST FAN	SECOND FLOOR WASHROOM	GREENHECK (OR APPROVED ALTERNATE)	GB-100-4	190(400)	0.06(0.25)	1,801	120/1/60	1/4	602xø620 (23.7xø24.4)	25(55)	ROOF CURB (NEW)	395x395 (15.5x15.5")	NEW H/O/A STARTER BAS START/STOP/STATUS	C/W INSULATED ROOF CURB, BACKDRAFT DAMPER, BIRDSCREEN U/F DISCONNECT SWITCH, CURB CAP 482(19")SQ.
EF-19	EF4	DOWNBLAST ROOF MOUNTED EXHAUST FAN	LUNCH ROOM #106	GREENHECK (OR APPROVED ALTERNATE)	GB-140-4	470(1,000)	0.06(0.25)	1,725	120/1/60	1/4	605xø720 (23.8xø28.4)	29(64)	ROOF CURB (NEW)	470x470 (18.5x18.5")	WALL TOGGLE SWITCH WITH PILOT LIGHT	C/W INSULATED ROOF CURB, BACKDRAFT DAMPER, BIRDSCREEN U/F DISCONNECT SWITCH, CURB CAP 560(22")SQ.
EF-14	EF5	ROOF MOUNTED CENTRIFUGAL FAN - INDUSTRIAL	TAILPIPE EXHAUST SYSTEM	NEDERMAN (OR APPROVED ALTERNATE)	NCF-30-25	1,130(2,400)	0.6(2.5)	3,535	575/3/60	5.5	825X790x570 (32.5x31x22.5)	115(250)	ROOF PAD (EXISTING)		NEW MANUAL STARTER BAS - STATUS (EXISTING CURRENT TRANSDUCER)	C/W INLET AND OUTLET ADAPTER, U/F DISCONNECT SWITCH, REMOVABLE GALVANIZED MOTOR SHIELD (CUSTOM MANUFACTURED), GOOSENECK OUTLET & NEW STARTER.
EF-15	EF6	DOWNBLAST ROOF MOUNTED EXHAUST FAN	GARAGE GENERAL EXHAUST FAN	GREENHECK (OR APPROVED ALTERNATE)	GB-200-4	1,180(2,500)	0.06(0.25)	584	120/1/60	1/4	710xø900 (28xø35.5)	35(76)	ROOF CURB (EXISTING)	675x675 (26.5x26.5")	NEW H/O/A STARTER BAS START/STOP/STATUS	C/W CURB EXTENSION, BACKDRAFT DAMPER, BIRDSCREEN U/F DISCONNECT SWITCH, CURB CAP 760(30")SQ & NEW STARTER.
EF-16	EF7	DOWNBLAST ROOF MOUNTED EXHAUST FAN	GARAGE GENERAL EXHAUST FAN	GREENHECK (OR APPROVED ALTERNATE)	GB-200-4	1,180(2,500)	0.06(0.25)	584	120/1/60	1/4	710xø900 (28xø35.5)	35(76)	ROOF CURB (EXISTING)	675x675 (26.5x26.5")	NEW H/O/A STARTER BAS START/STOP/STATUS	C/W CURB EXTENSION, BACKDRAFT DAMPER, BIRDSCREEN U/F DISCONNECT SWITCH, CURB CAP 760(30")SQ & NEW STARTER.
EF-17	EF8	ROOF MOUNTED CENTRIFUGAL FAN - INDUSTRIAL	TAILPIPE EXHAUST SYSTEM	NEDERMAN (OR APPROVED ALTERNATE)	NCF-30-25	1,980(4,200)	0.77(3.2)	3,550	575/3/60	10	880X883x703 (34.6x34.8x27.7)	160(350)	ROOF PAD (EXISTING)		NEW MANUAL STARTER BAS - STATUS (EXISTING CURRENT TRANSDUCER)	C/W INLET AND OUTLET ADAPTER, U/F DISCONNECT SWITCH, REMOVABLE GALVANIZED MOTOR SHIELD (CUSTOM MANUFACTURED), GOOSENECK OUTLET & NEW STARTER.

(*1) PROVIDE LAMACOID LABEL WITH NEW TAG# ON EACH UNIT.

HOT WATER HEATER SCHEDULE

TAG (EXISTING)	TAG (NEW)	LOCATION	QTY	MANUFACTURER	MODEL	CAPACITY		SHIP. WEIGHT (kg/Lb)	FLUE VENT (ø mm)	COMB INTAKE (ø mm)	TANK CAPACITY LITERS (Gallons)	RECOVERY RATE LITERS (GAL) PER HOUR @ 56'C (100'F) TEMP RISE	DIMENSION D X H mm (inch)	ELECTRICAL (V-PH-Hz)	REMARKS
						INPUT (MBH)	THERMAL EFFICIENCY								
WH-1	DHWT1	MECHANICAL ROOM	1	A.O.SMITH	CYCLONE MXI BTH-500A	500	95%	400/900	150	150	451 (119)	2,179 (576)	ø841.5x1924 (ø33.13"x75.75")	120-1-60	C/W CONDENSATE NEUTRALIZATION KIT AND T&P RELIEF VALVE AND CPVC VENTING SYSTEM AND COMBUSTION AIR INTAKE (CPVC ULC636) . PROVIDE LAMACOID LABEL WITH NEW TAG# ON EACH UNIT.

SCHEDULE OF GRILLES, REGISTERS AND DIFFUSERS

DESIGNATION 'X'-Y'ø-Z (X)-TAG OF DIFFUSER/GRILLE, (Y)-SIZE OF GRILLE OR DIFFUSER NECK AND BRANCH DUCT, (Z)-AIR QUANTITY (LPS)

TAG	TYPE	SIZE	MOUNTING	MODEL (BASED ON NAILOR)	ACCESSORIES
A1	SUPPLY CEILING DIFFUSER - SQUARE	24"x24"	T-BAR/DRYWALL	RNS TYPE L	
E	EXHAUST GRILLE - FIXED SINGLE BLADE	SEE DRAWING	AS INDICATED	6155-0	OPPOSED BLADE DAMPER
R	RETURN GRILLE - EGGCRATE 1/2"x1/2"x1"	SEE DRAWING	T-BAR/DRYWALL	51EC TYPE PLS	
X	EXISTING GRILLE OR DIFFUSER TO REMAIN, INSPECT, CLEAN AND RE-BALANCE. PAINT IF REQUIRED.				

ALL DIFFUSERS AND GRILLES SHALL HAVE BAKED ENAMEL FINISH TO MATCH CEILINGS. COLOUR TO BE CONFIRMED.
INSTALL BLANK-OFF PANELS WHERE INDICATED
BASIS OF DESIGN AND SPECIFICATION 'NAILOR INDUSTRIES INC.', EQUALS ARE ACCEPTABLE

PLOT DATE: Mar 4, 2024

#	DATE	REVISION
5	04/JUL/2024	ISSUED FOR TENDER
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2	10/APR/2024	ISSUED FOR REVIEW
1	19/JAN/2024	ISSUED FOR COORDINATION

#	DATE	ISSUED

ISSUED FOR CONSTRUCTION

SIGNATURE _____

DATE _____

client:

MISSISSAUGA

client project no.
--

project:
MAVIS S. MECH. & ROOF RENEWAL
CITY OF MISSISSAUGA

3185 MAVIS RD, MISSISSAUGA,ON L5C 1T7

mechanical consultant:

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M. TRSTENJAK
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PROVINCE OF ONTARIO
Jul 04, 2024

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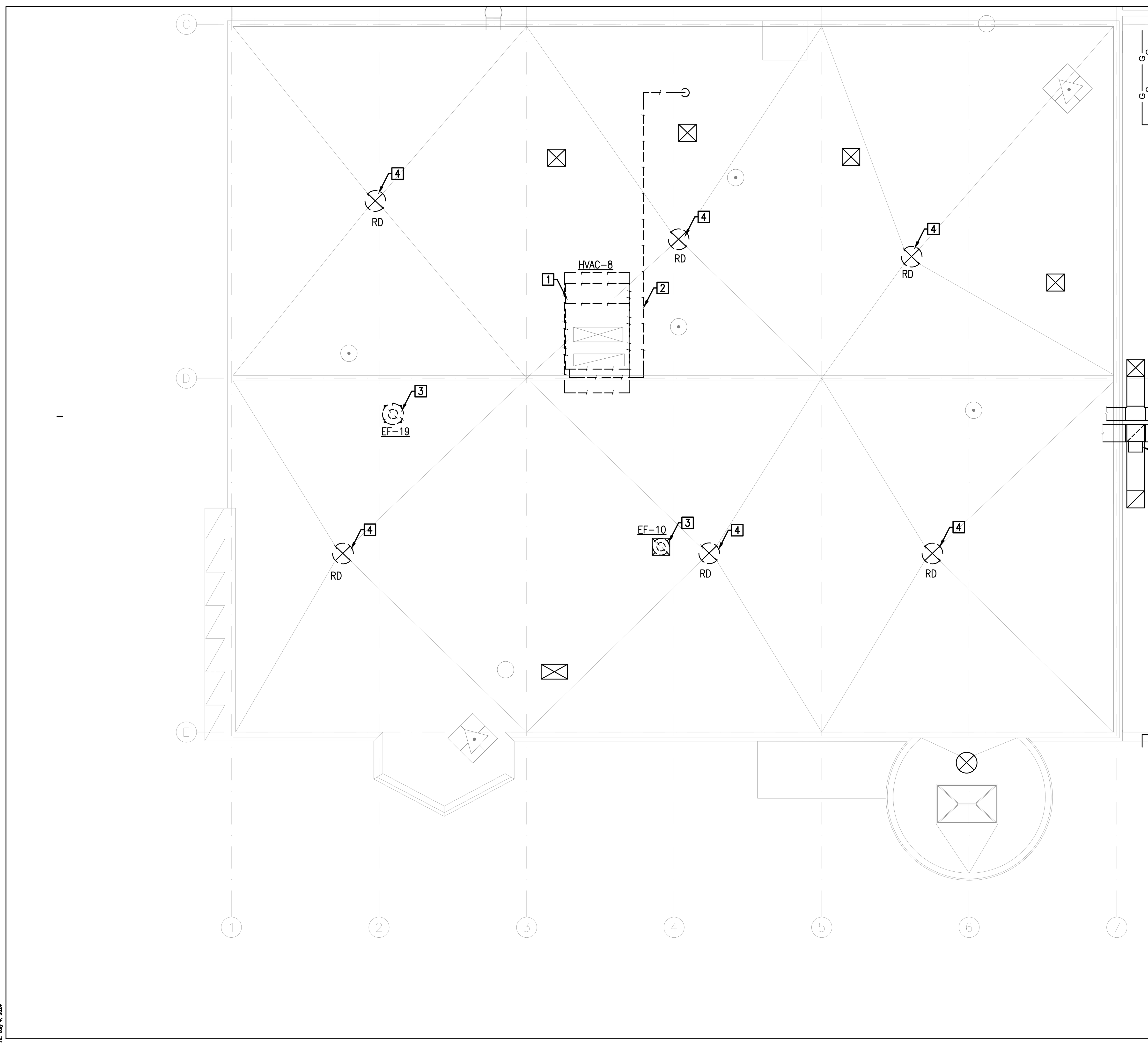
project engineer: MT
project designer: BE

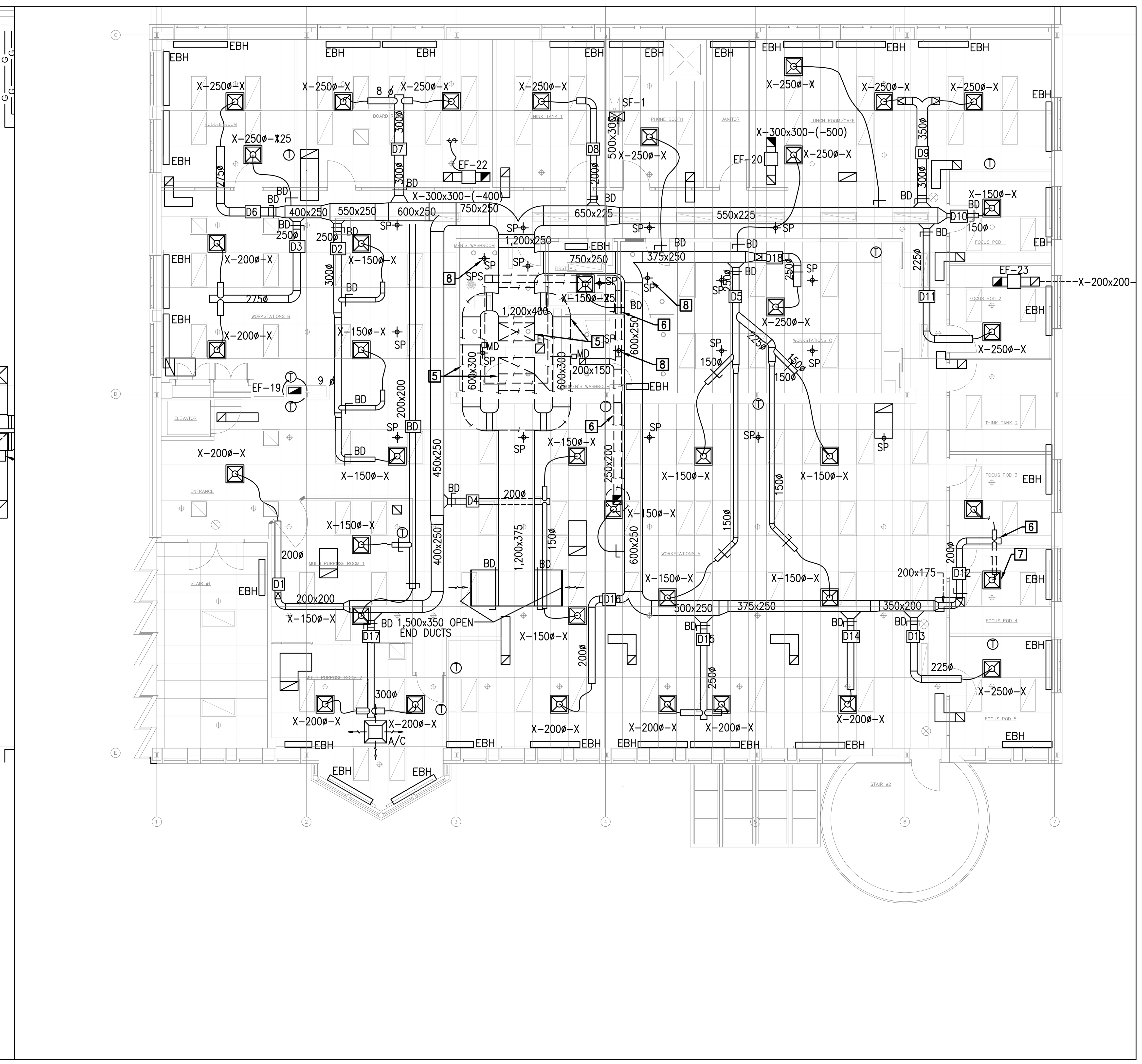
sheet title
MECHANICAL
EQUIPEMENT SCHEDULE

scale	drawn by	checked by	drawing no.
AS NOTED	BE	MT	M103
project no. DE23-566	plot date: 2024-07-04		

REFERENCE NOTES

1. DISCONNECT, REMOVE AND DISPOSE EXISTING ROOF TOP UNIT C/W RALL ACCESSORIES. PRESERVE CONTROL WIRING FOR THE NEW UNIT. EXISTING ROOF CURB TO REMAIN, INSPECT AND CLEAN FOR INSTALLATION OF NEW ROOF CURB ADAPTER AND NEW UNIT.
2. SHUT DOWN THE GAS SERVICE, PURGE THE LINES, DISCONNECT AND REMOVE SECTION OF THE GAS PIPE AS INDICATED.
3. DISCONNECT, REMOVE AND DISPOSE EXISTING EXHAUST FANS C/W ROOF CURBS AND ALL ACCESSORIES. EXISTING DUCT THROUGH THE ROOF TO REMAIN AND TO BE PRESERVED FOR THE NEW EXHAUST FAN.
4. EXISTING ROOF DRAIN TO BE REPLACED WITH NEW IN THE SAME LOCATION, SEE PROPOSED LAYOUTS FOR DETAILS. TYPICAL WHERE INDICATED
5. DISCONNECT AND REMOVE EXISTING BYPASS DUCTWORK (2) C/W DAMPERS, CONTROLS AND ACCESSORIES.
6. DISCONNECT AND DEMOLISH EXISTING DUCTWORK AS SHOWN, MAKE IT READY FOR NEW WORK.
7. DISCONNECT AND DEMOLISH EXISTING DIFFUSER AS SHOWN. HEADS IN THE WASHROOMS AND
8. DISCONNECT AND REMOVE ALL SPRINKLER HEADS AND PIPING IN AND AROUND THE WASHROOM TO ALLOW REMOVAL OF THE CEILINGS REQUIRED FOR THE STRUCTURAL AND MECHANICAL WORK BELOW THE UNIT. ALLOW FOR 10 SPRINKLER HEADS. CONTRACTOR TO CARRY COST OF THE FIRE WATCH DURING THE WORK.





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client: MISSISSAUGA

client project no. --

project:
MAVIS S. MECH. & ROOF RENEWAL
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north: PLAN NORTH, N

seal: LICENSED PROFESSIONAL ENGINEER, Jul 04, 2024, M. TRSTENJAK, 100167285, PROVINCE OF ONTARIO

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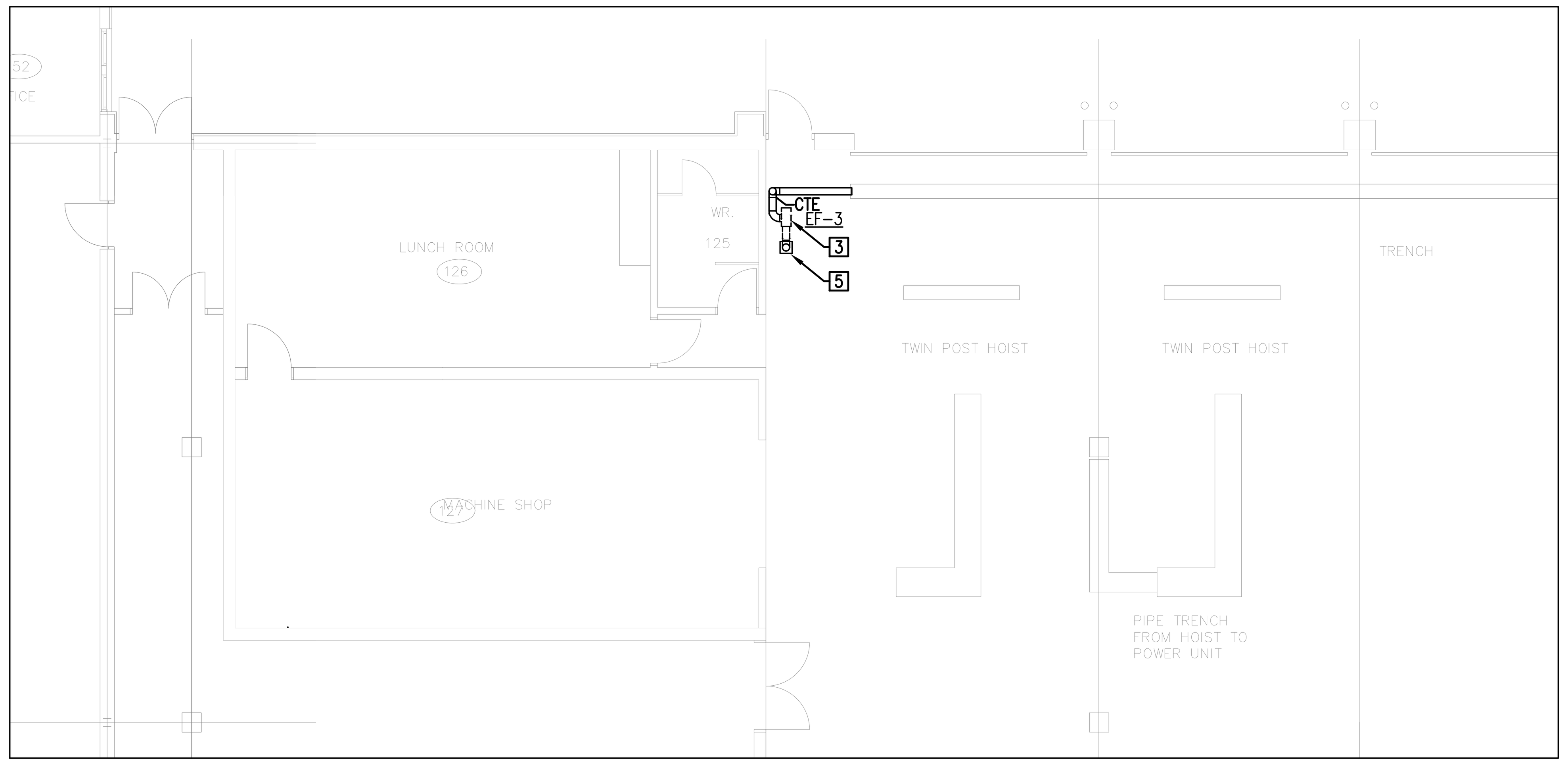
project engineer	project designer
MT	BE

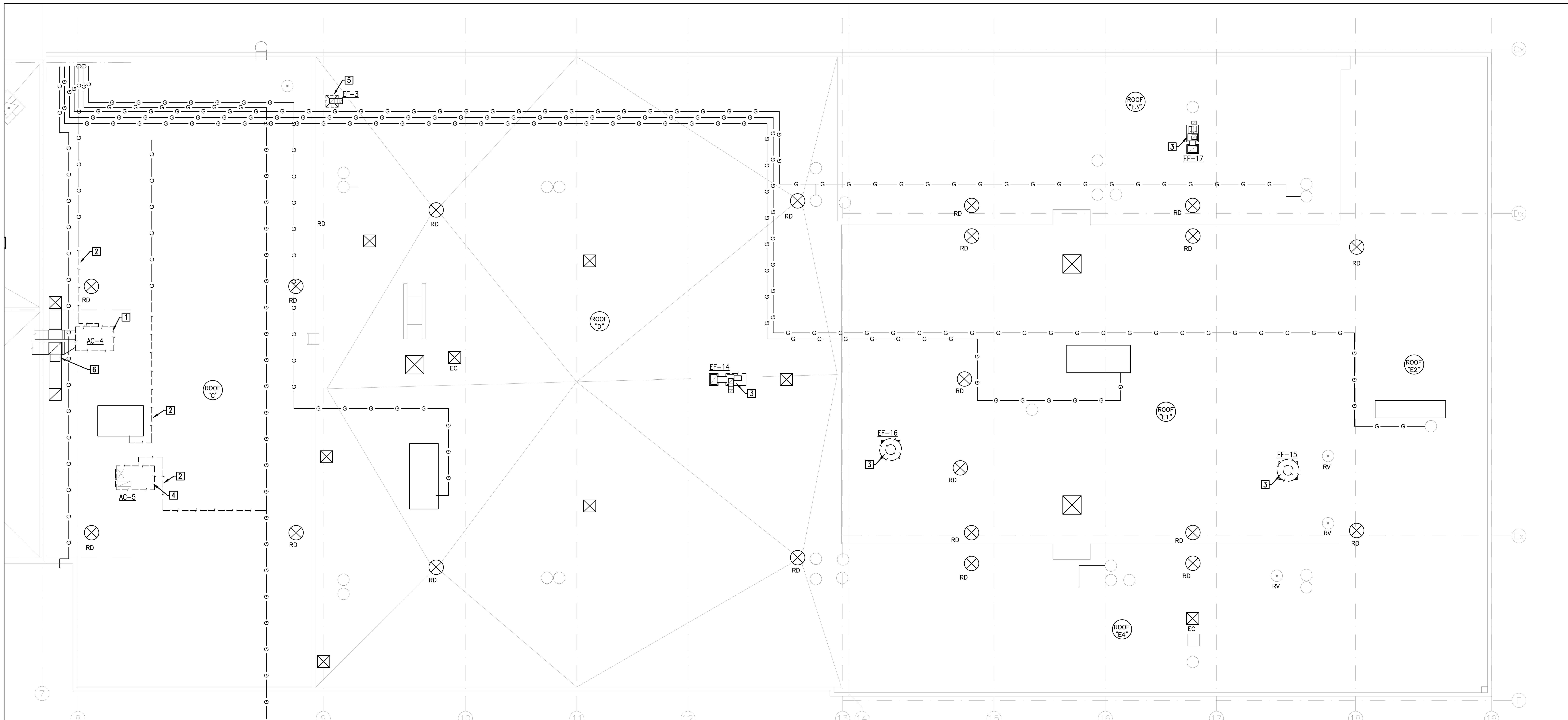
sheet title:
MECHANICAL
HVAC ROOF PLAN - CENTRAL
DEMOLITION

scale	drawn by	checked by	drawing no.
1:100	BE	MT	M200
project no. DE23-566	plot date: 2024-07-04		



REFERENCE NOTES

1. DISCONNECT, REMOVE AND DISPOSE EXISTING ROOF TOP UNIT C/W ROOF SUPPORT AND ALL ACCESSORIES (EG. DUCT MOUNTED POWER EXHAUST FAN). PRESERVE CONTROL WIRING FOR THE NEW UNIT.
2. SHUT DOWN THE GAS SERVICE, PURGE THE LINES, DISCONNECT AND REMOVE SECTION OF THE GAS PIPE AS INDICATED.
3. DISCONNECT, REMOVE AND DISPOSE EXISTING EXHAUST FANS AND ALL ACCESSORIES. EXISTING ROF CURB AND DUCT THROUGH THE ROOF TO REMAIN AND TO BE PRESERVED FOR THE NEW EXHAUST FAN.
4. DISCONNECT, REMOVE AND DISPOSE EXISTING ROOF TOP UNIT C/W ALL ACCESSORIES. PRESERVE CONTROL WIRING FOR THE NEW UNIT. EXISTING ROOF CURB TO REMAIN, INSPECT AND CLEAN FOR INSTALLATION OF NEW ROOF CURB ADAPTER AND NEW ROOF UNIT.
5. DISCONNECT AND REMOVE DUCTWORK FROM THE FAN THROUGH THE ROOF, C/W FLUSHING AND ACCESSORIES.
6. DISCONNECT AND REMOVE EXISTING DUCT MOUNTED POWER EXHAUST FAN, C/W POWER AND CONTROLS FROM THE UNIT. REPAIR THE DUCTWORK AND INSULATION.



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1	19/JAN/2024	ISSUED FOR COORDINATION

ISSUED FOR CONSTRUCTION

SIGNATURE ______________________

DATE ______________________

client: MISSISSAUGA

client project no. --

project:
MAVIS S. MECH. & ROOF RENEWAL
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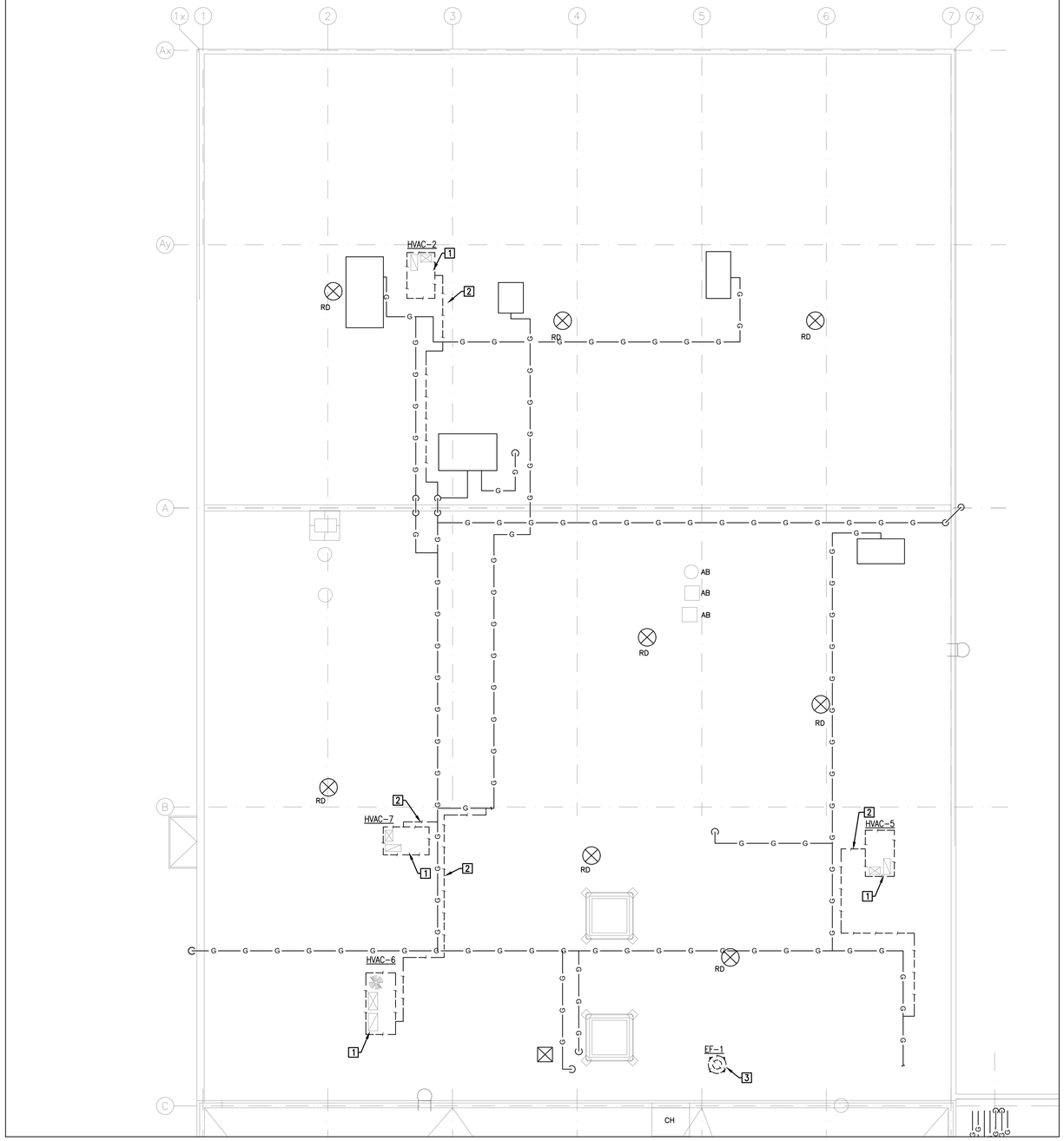
project engineer: MT
project designer: BE

sheet title:
MECHANICAL
HVAC ROOF AND GROUND FLOOR PLAN - EAST
DEMOLITION

scale	drawn by	checked by	drawing no.
1:100	BE	MT	M201
project no. DE23-566	plot date: 2024-07-04		



REFERENCE NOTES

1. DISCONNECT, REMOVE AND DISPOSE EXISTING ROOF TOP UNITS C/W ALL ACCESSORIES. PRESERVE CONTROL WIRING FOR THE NEW UNIT. EXISTING ROOF CURB TO REMAIN, INSPECT AND CLEAN FOR INSTALLATION OF NEW ROOF CURB ADAPTER AND NEW UNIT.
2. SHUT DOWN THE GAS SERVICE, PURGE THE LINES, DISCONNECT AND REMOVE SECTION OF THE GAS PIPE AS INDICATED.
3. DISCONNECT, REMOVE AND DISPOSE EXISTING EXHAUST FAN C/W ACCESSORIES. EXISTING ROOF CURB AND DUCT THROUGH THE ROOF TO REMAIN AND TO BE PRESERVED FOR THE NEW EXHAUST FAN.

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SIGNATURE _____

DATE _____

client:

MISSISSAUGA

client project no.
--

project:
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Jul 04, 2024
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project engineer	project designer
MT	BE

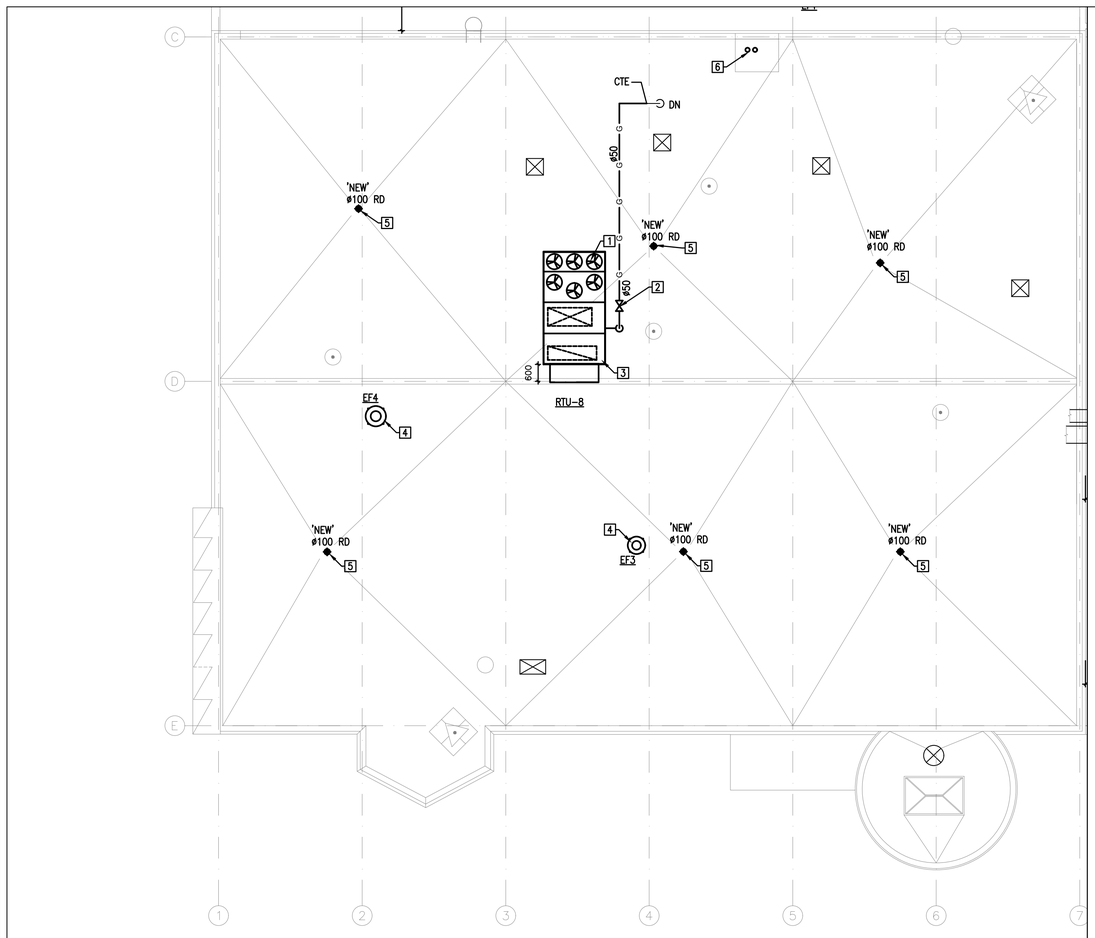
sheet title

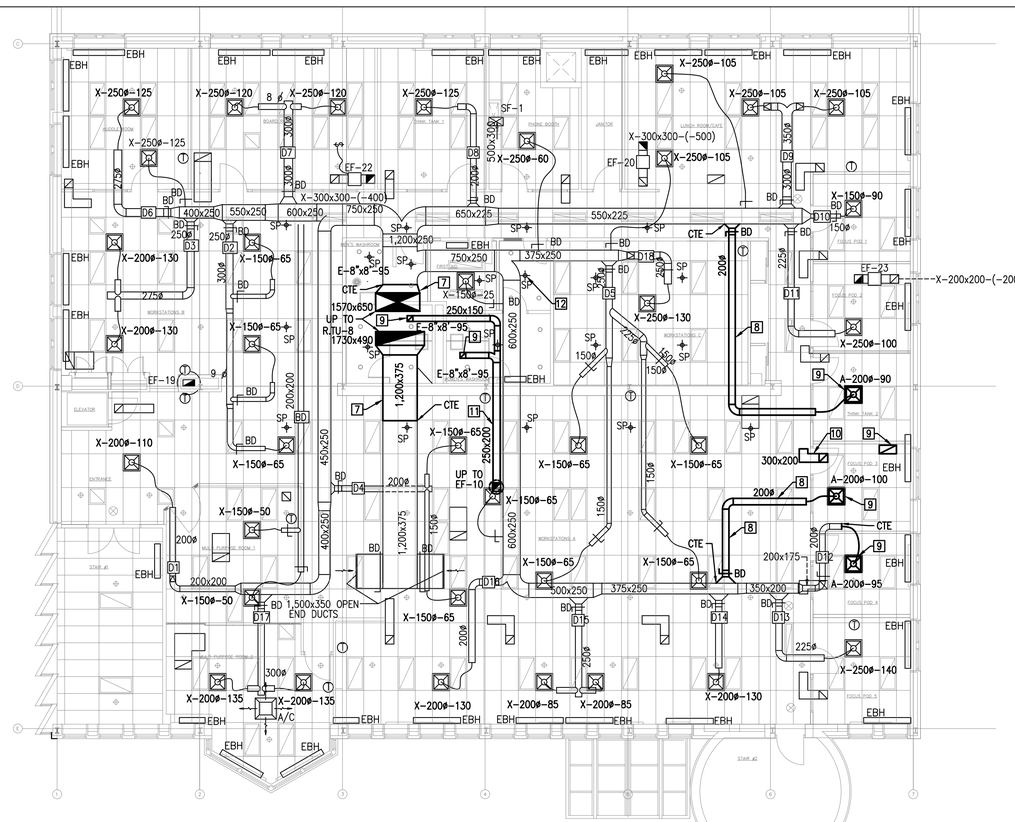
MECHANICAL
HVAC ROOF PLAN - NORTH
DEMOLITION

scale	drawn by	checked by	drawing no.
1:100	BE	MT	M202
project no.	plot date:		
DE23-566	2024-07-04		

REFERENCE NOTES

1. THICK LINE INDICATES OUTLINE OF THE EXISTING ROOF CURB FOR THE REFERENCE ONLY.
2. PROVIDE NEW NATURAL GAS PIPING DISTRIBUTION TO ROOF TOP UNITS AS INDICATED. PROVIDE ISOLATION VALVE, REDUCER, SUPPORTS AND DIRT POCKET FOR FINAL CONNECTION TO UNITS. CONNECT TO EXISTING PIPING, AS SHOWN.
3. PROVIDE NEW ROOFTOP UNIT AS INDICATED. CONNECT THE NEW SUPPLY AND EXHAUST TO THE EXISTING ROOF OPENING THROUGH THE CURB ADAPTOR. MAINTAIN MINIMUM 3m CLEARANCE BETWEEN INTAKES AND BUILDING EXHAUST OR PLUMBING VENTS. SEE SCHEDULES AND SPECIFICATIONS FOR DETAILED INFORMATION. COORDINATE EXACT LOCATION WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
4. PROVIDE NEW ROOF MOUNTED EXHAUST FANS EF3 & EF4 AND CONNECT TO EXISTING EXHAUST DUCT WORK FROM BELOW. PROVIDE NEW ROOF CURBS FOR THE EXHAUST FANS. REFER TO SCHEDULES FOR PERFORMANCE AND DETAILS FOR INSTALLATION.
5. PROVIDE NEW ø100 ROOF DRAIN AND CONNECT TO EXISTING STORM SYSTEM. SEE ROOFING DRAWINGS FOR THE INSTALLATION DETAIL. REFERENCE SPECIFICATION – JAY R.SMITH 1010 C/Y (HUB TO SUIT EXISTING PIPING), C/W 200mm EXTENSION
6. WATER HEATER VENTING AND COMBUSTION AIR INTAKE. FOLLOW DETAIL ON M401 FOR MORE INFORMATION.
7. PROVIDE NEW SECTION OF DUCTWORK IN BOTH SUPPLY AND RETURN DUCT. SIZE TO MATCH THE EXISTING. INSTALL ALL SENSORS AS PER THE CONTROL DIAGRAM. SUPPLY AND INSTALL ACOUSTICAL LINING IN ALL NEW DUCTWORK FROM THE RTU.
8. PROVIDE NEW SUPPLY AIR DUCT C/W BALANCING DAMPER AND SUPPORT, CONNECT TO EXISTING DUCTWORK AS SHOWN.
9. PROVIDE NEW SUPPLY AND RETURN AIR DIFFUSER AND GRILL AS SPECIFIED.
10. PROVIDE NEW AIR TRANSFER DUCT AS SHOWN.
11. PROVIDE NEW EXHAUST AIR DUCTWORK AS SHOWN.
12. SUPPLY AND INSTALL NEW SPRINKLER HEADS, TO MATCH THE EXISTING REMOVED AND REINSTALL IN SAME LOCATION. PROVIDE ALL PIPING AND ACCESSORIES TO COMPLETE THE SYSTEM. TYPICAL.





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1	19/JAN/2024	ISSUED FOR COORDINATION

#	DATE	ISSUED

ISSUED FOR CONSTRUCTION

SIGNATURE _____

DATE _____

client:

MISSISSAUGA

client project no.
--

project:
MAVIS S. MECH. & ROOF RENEWAL
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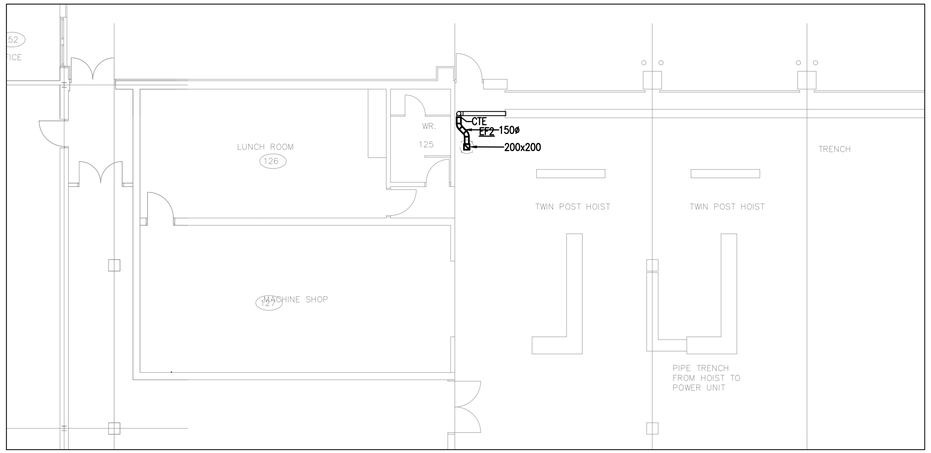
project engineer	project designer
MT	BE

sheet title
MECHANICAL
HVAC ROOF AND SECOND FLOOR PLAN
NEW CONSTRUCTION

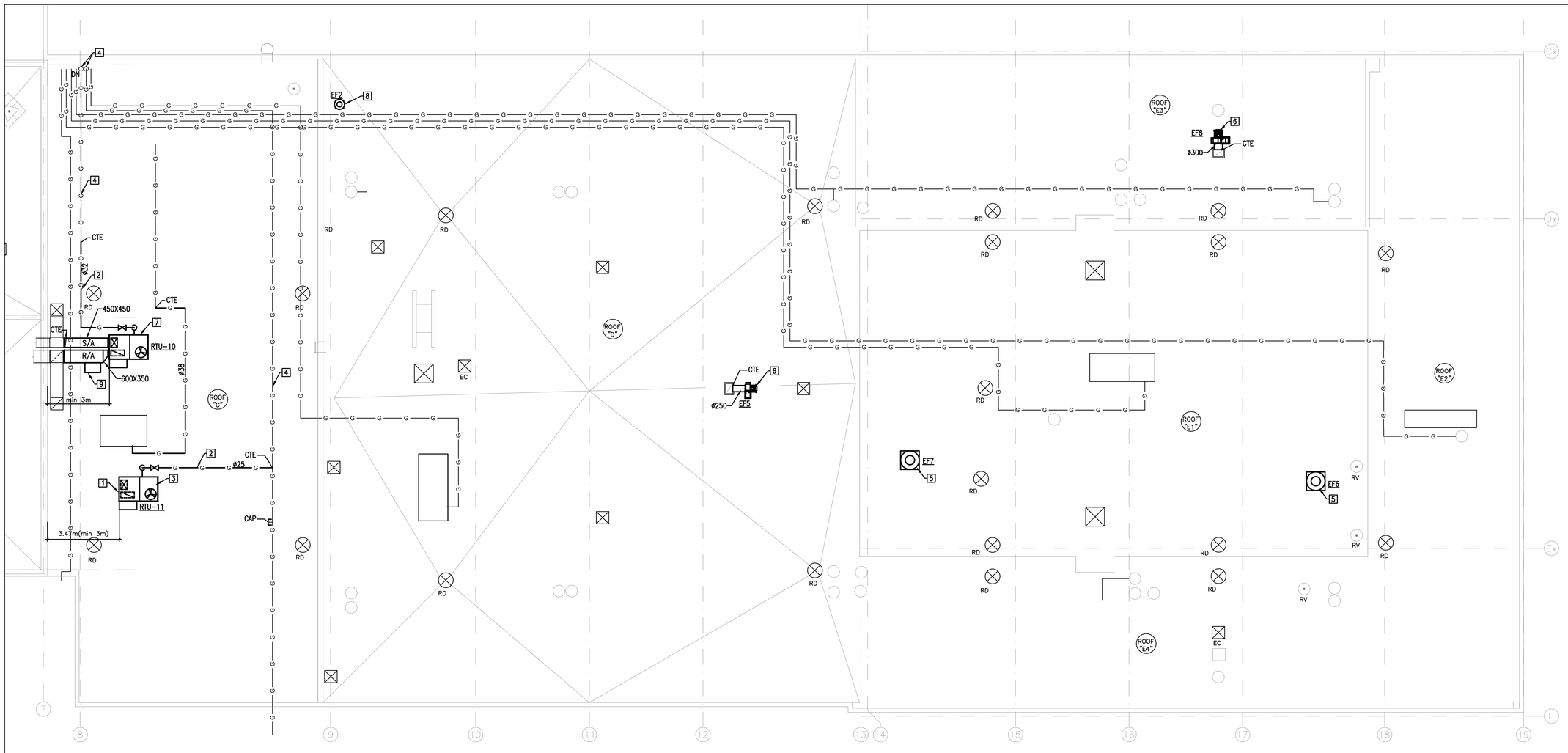
scale	drawn by	checked by	drawing no.
1:100	BE	MT	M300
project no.	plot date:		
DE23-566	2024-07-04		

PLOT DATE: Jul 4, 2024



REFERENCE NOTES

1. THICK LINE INDICATES OUTLINE OF THE EXISTING ROOF CURB FOR THE REFERENCE ONLY.
2. PROVIDE NEW NATURAL GAS PIPING DISTRIBUTION TO ROOF TOP UNITS AS INDICATED. PROVIDE ISOLATION VALVE, REDUCER, SUPPORTS AND DIRT POCKET FOR FINAL CONNECTION TO UNITS. CONNECT TO EXISTING PIPING, AS SHOWN.
3. PROVIDE NEW ROOFTOP UNIT AS INDICATED. CONNECT THE NEW SUPPLY AND EXHAUST TO THE EXISTING ROOF OPENING THROUGH THE CURB ADAPTOR. MAINTAIN MINIMUM 3m CLEARANCE BETWEEN INTAKES AND BUILDING EXHAUST OR PLUMBING VENTS. SEE SCHEDULES AND SPECIFICATIONS FOR DETAILED INFORMATION. COORDINATE EXACT LOCATION WITH STRUCTURAL DRAWINGS.
4. EXISTING NATURAL GAS SERVICES ARE SHOWN FOR REFERENCE ONLY, CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND SIZES OF THE EXISTING SERVICES PRIOR TO ANY WORK.
5. PROVIDE NEW ROOF MOUNTED EXHAUST FANS EF6 & EF7 AND CONNECT TO EXISTING EXHAUST DUCT WORK FROM BELOW. FAN SHALL BE INSTALLED ON THE EXISTING ROOF CURB, INSPECT AND CLEAN THE CURB. REFER TO SCHEDULES FOR PERFORMANCE AND DETAILS FOR INSTALLATION.
6. PROVIDE NEW ROOF MOUNTED TAIL PIPE EXHAUST FANS EF5 & EF8 C/W DUCT CONNECTOR BETWEEN THE FAN AND EXISTING EXHAUST DUCT FROM BELOW. EXISTING FAN SUPPORT SHALL REMAIN. INSTALLATION SHALL BE PER MANUFACTURER INSTALLATION MANUAL. REFER TO SCHEDULES FOR FAN PERFORMANCE.
7. PROVIDE NEW ROOFTOP UNIT C/W ASSOCIATED INSULATED DUCT WORK TO CONNECT TO EXISTING DUCT WORK ON THE ROOF AS INDICATED. MAINTAIN MINIMUM 3m CLEARANCE FROM THE BUILDING WALL. SEE SCHEDULES AND SPECIFICATIONS FOR DETAILED INFORMATION. COORDINATE EXACT LOCATION WITH STRUCTURAL DRAWINGS.
8. PROVIDE NEW ROOF MOUNTED EXHAUST FANS EF2 AND CONNECT TO THE EXISTING EXHAUST DUCT WORK ON THE BELOW LEVEL. PROVIDE NEW ROOF CURBS FOR THE EXHAUST FAN. REFER TO SCHEDULES AND DETAIL 6&7 FOR PERFORMANCE AND DETAILS FOR INSTALLATION.
9. NEW DUCT MOUNTED POWER EXHAUST FAN, SUPPLIED WITH THE RTU. PROVIDE ALL WIRING TO THE UNIT AS REQUIRED.



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1	19/JAN/2024	ISSUED FOR COORDINATION

ISSUED FOR CONSTRUCTION

SIGNATURE ______________________________

DATE ______________________________

client:
MISSISSAUGA

client project no.
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project:
MAVIS S. MECH. & ROOF RENEWAL
CITY OF MISSISSAUGA

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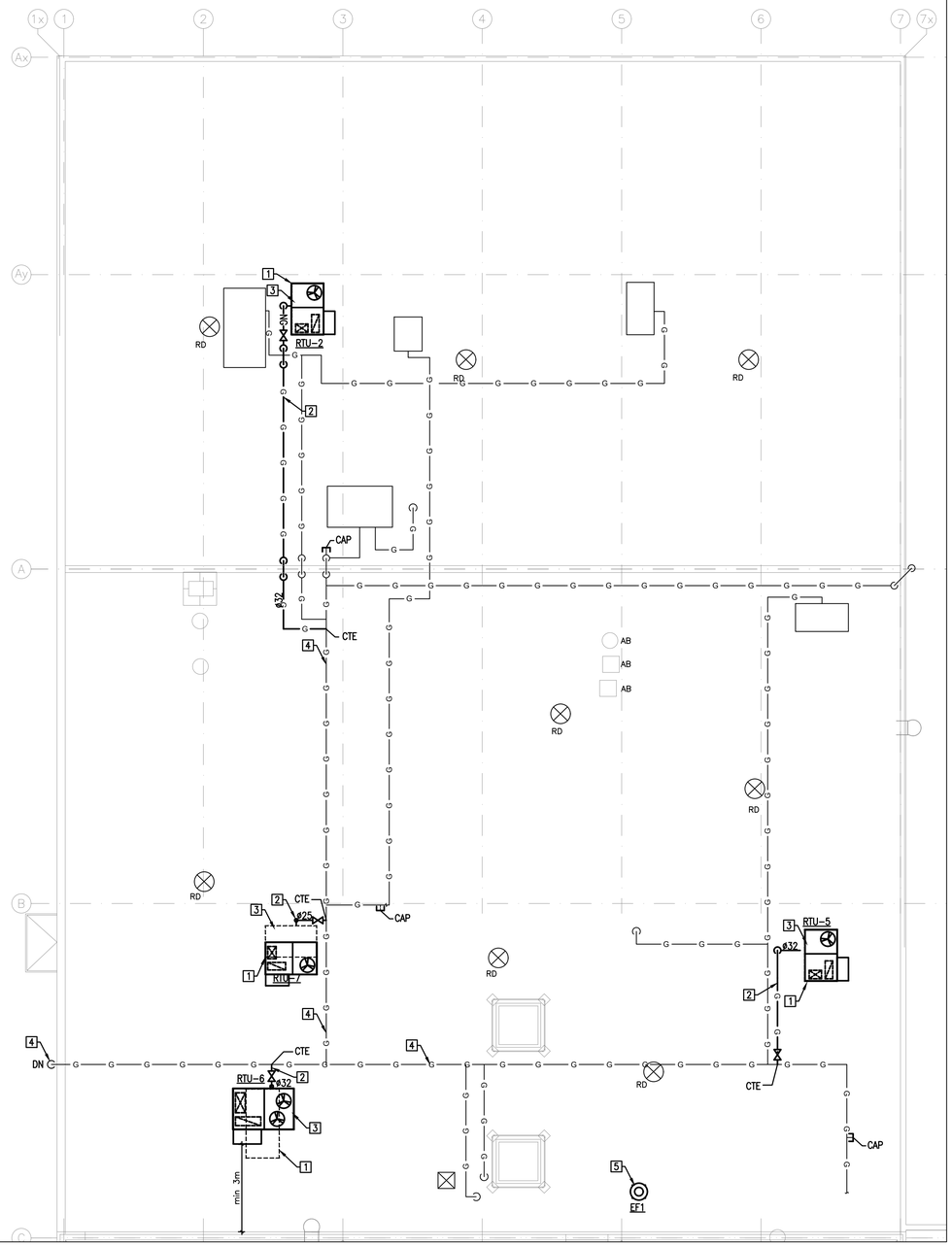
project engineer: MT
project designer: BE

sheet title:
MECHANICAL
HVAC ROOF AND GROUND FLOOR PLAN - EAST
NEW CONSTRUCTION

scale	drawn by	checked by	drawing no.
1:100	BE	MT	M301
project no.	plot date:		
DE23-566	2024-07-04		



REFERENCE NOTES

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2. PROVIDE NEW NATURAL GAS PIPING DISTRIBUTION TO ROOF TOP UNITS AS INDICATED. PROVIDE ISOLATION VALVE, REDUCER, SUPPORTS AND DIRT POCKET FOR FINAL CONNECTION TO UNITS. CONNECT TO EXISTING PIPING, AS SHOWN.
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4. EXISTING NATURAL GAS SERVICES ARE SHOWN FOR REFERENCE ONLY, CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND SIZES OF THE EXISTING SERVICES PRIOR TO ANY WORK.
5. PROVIDE NEW ROOF MOUNTED EXHAUST FAN EF1 AND CONNECT TO EXISTING EXHAUST DUCT WORK FROM BELOW. FAN SHALL BE INSTALLED ON THE EXISTING ROOF CURB, INSPECT AND CLEAN THE CURB. REFER TO SCHEDULES FOR PERFORMANCE AND DETAILS FOR INSTALLATION.

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MISSISSAUGA

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project:
MAVIS S. MECH. & ROOF RENEWAL
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project engineer	project designer
MT	BE

sheet title

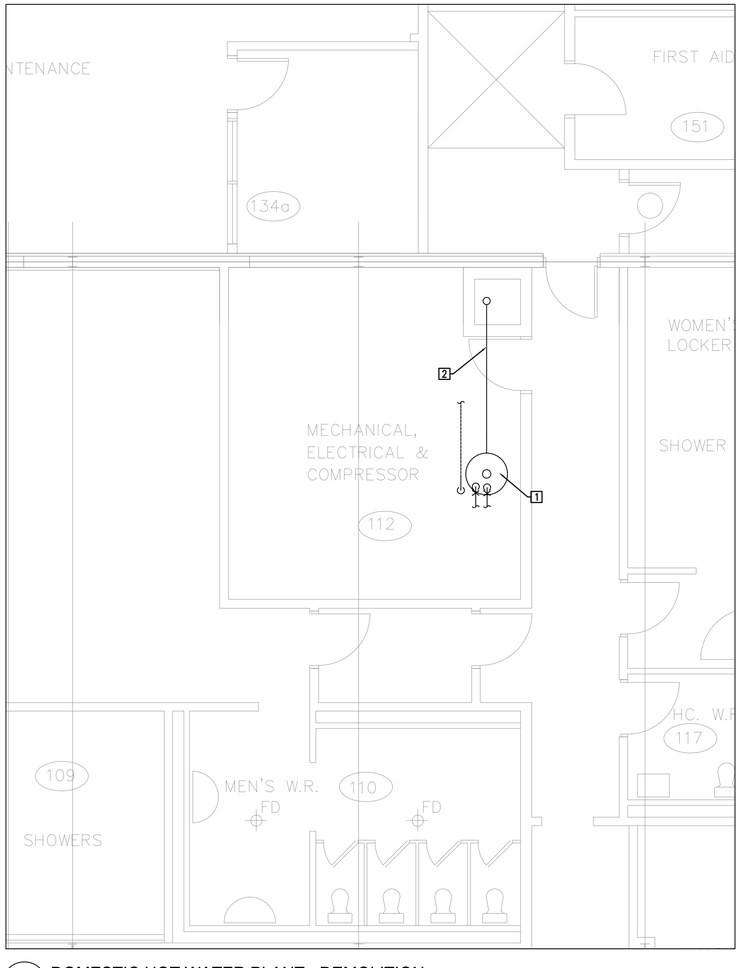
MECHANICAL
HVAC ROOF PLAN - NORTH
NEW CONSTRUCTION

scale	drawn by	checked by	drawing no.
1:100	BE	MT	M302
project no.	plot date:		
DE23-566	2024-07-04		

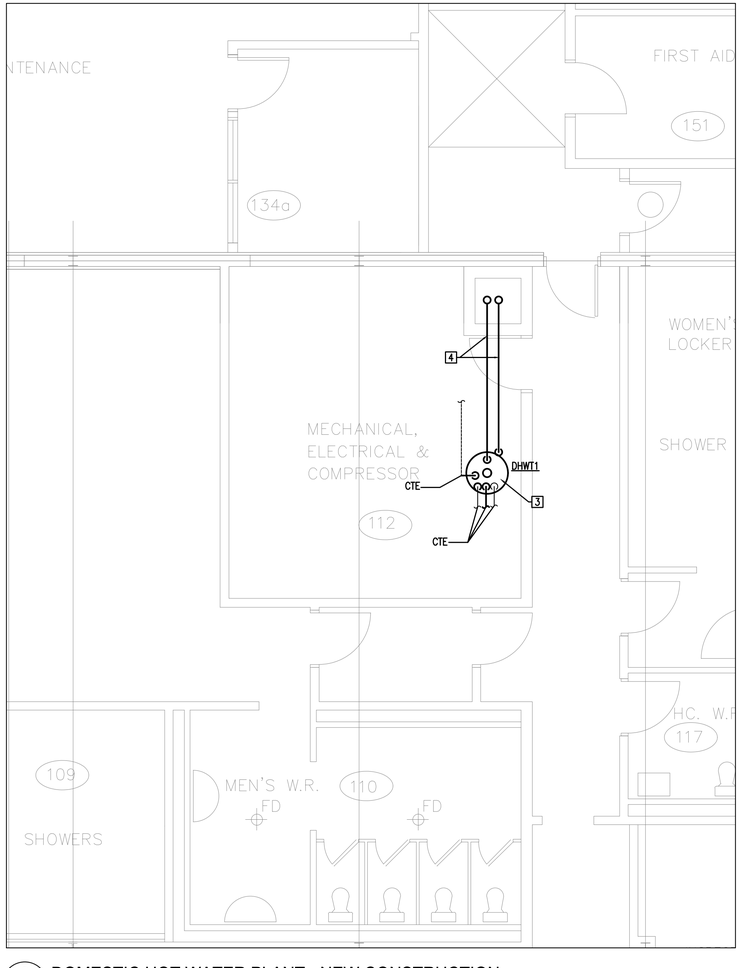
PLOT DATE: JULY 4, 2024

REFERENCE NOTES

1. CONTRACTOR TO DISCONNECT & DEMOLISH THE GAS WATER HEATER C/W ALL PIPING SERVICES.
2. DEMOLISH EXISTING FLUE VENT PIPING AS INDICATED.
3. PROVIDE AND INSTALL NEW GAS WATER HEATER. CONNECT TO EXISTING PIPING, AS SHOWN.
4. PROVIDE AND INSTALL NEW FLUE VENT PIPE AND COMBUSTION AIR INTAKE PIPE, AS SHOWN. (SEE M401 FOR MORE DETAILS)



1 M400 DOMESTIC HOT WATER PLANT - DEMOLITION
SCALE: 1:50



2 M400 DOMESTIC HOT WATER PLANT - NEW CONSTRUCTION
SCALE: 1:50

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MISSISSAUGA

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project:
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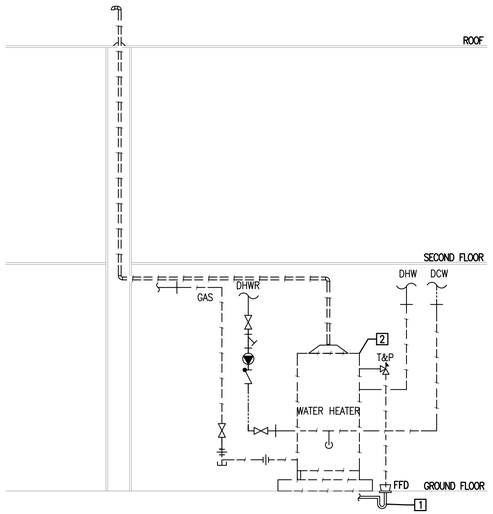
project engineer	project designer
MT	BE

sheet title
MECHANICAL
DOMESTIC HOT WATER PLANT REPLACEMENT
DEMOLITION AND NEW CONSTRUCTION

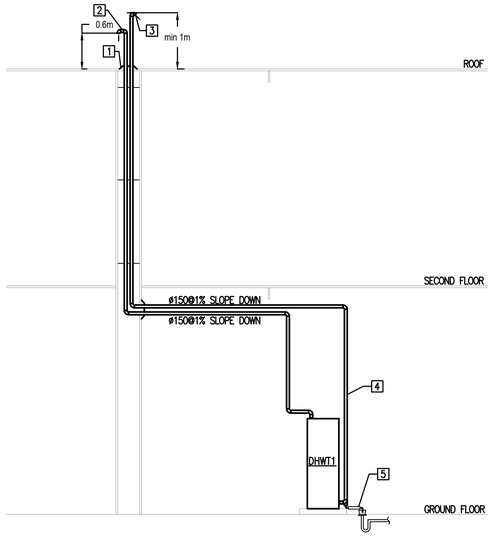
scale	drawn by	checked by	drawing no.
1:50	BE	MT	M400
project no.	plot date:		
DE23-566	2024-07-04		



REFERENCE NOTES

1. EXISTING FLOOR FUNNEL DRAINS TO REMAIN. CAP AND PROTECT DURING CONSTRUCTION.
2. CONTRACTOR TO DISCONNECT EXISTING GAS FIRED WATER HEATER FROM THE DOMESTIC COLD % HOT WATER AND GAS, REMOVE AND DISPOSE HEATER, C/W ALL ACCESSORIES (VENTING, SUPPORTS, ETC).

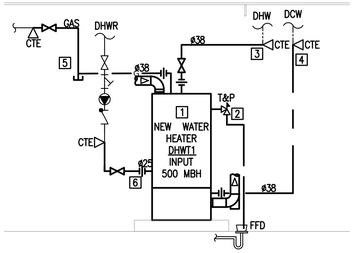
1 M401 DHW PLANT SCHEMATIC - DEMOLITION
SCALE: 1:50



REFERENCE NOTES

1. PROVIDE NEW FLASHING, SIZED TO COVER EXISTING ROOF OPENING, TYP. FOR ALL.
2. Ø150 FRESH AIR INTAKE PIPE C/W GOOSENECK AND INSECT SCREEN, TERMINATE 600MM ABOVE ROOF LEVEL. PROVIDE PIPE SUPPORT BELOW AND ABOVE THE ROOF.
3. PROVIDE Ø150 ID VENT PIPE.
4. PROVIDE OFFSET ON BOTH FLUE VENT AND COMBUSTION AIR INTAKE PIPE TO MAINTAIN DISTANCE FROM AIR INTAKE ON THE AIR HANDLING UNIT OF MIN 3m.
5. NEUTRALIZER KIT SUPPLIED BY THE WATER HEATER SUPPLER, CONNECT 13mm INLET HOSE TO THE WATER HEATER AND 13mm OUTLET HOSE TO THE FLOOR DRAIN.

NOTES:
CONTRACTOR TO INSTALL NEW VENTIN AND COMBUSTION AIR INTAKE PIPING WITHIN THE EXISTING CHIMNEY. PROVIDE FLASHING. ON BOTH SIDES (ROOF AND MECHANICAL ROOM) AND SEAL THE PIPING.
PROVIDE SUPPORT PLATES WITHIN THE CHIMNEY TO MAINTAIN CLEARANCES BETWEEN THE PIPING AND CHIMNEY WALLS AND TO SUPPORT THE PIPING.
PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH MANUFACTURER INSTALLATION INSTRUCTIONS (BOTTOM, TOP, AND HORIZONTAL RUNS IN THE M/R.



REFERENCE NOTES

1. PROVIDE NEW HOT WATER HEATER C/W T&P RELIEF VALVE AND RELATED ACCESSORIES AS SPECIFIED.
2. PIPE PRESSURE-TEMPERATURE RELIEF VALVE INTO THE FLOOR DRAIN. RELIEF VALVE SUPPLIED BY THE SUPPLIER.
3. PROVIDE AND INSTALL NEW DOMESTIC HOT WATER PIPE. CONNECT TO EXISTING PIPING, AS SHOWN.
4. PROVIDE AND INSTALL NEW DOMESTIC COLD WATER PIPE. CONNECT TO EXISTING PIPING, AS SHOWN.
5. PROVIDE AND INSTALL NEW GAS PIPE C/W ISOLATION VALVE. CONNECT TO EXISTING PIPING, AS SHOWN.
6. EXTEND NEW RE-CIRCULATING WATER PIPE AND CONNECT TO THE WATER HEATER CONNECTION, AS SHOWN.

NOTES:
PROVIDE AND INSTALL NEW INSULATION FOR DOMESTIC WATER PIPES

2 M401 DHW PLANT SCHEMATIC - NEW CONSTRUCTION
SCALE: 1:50

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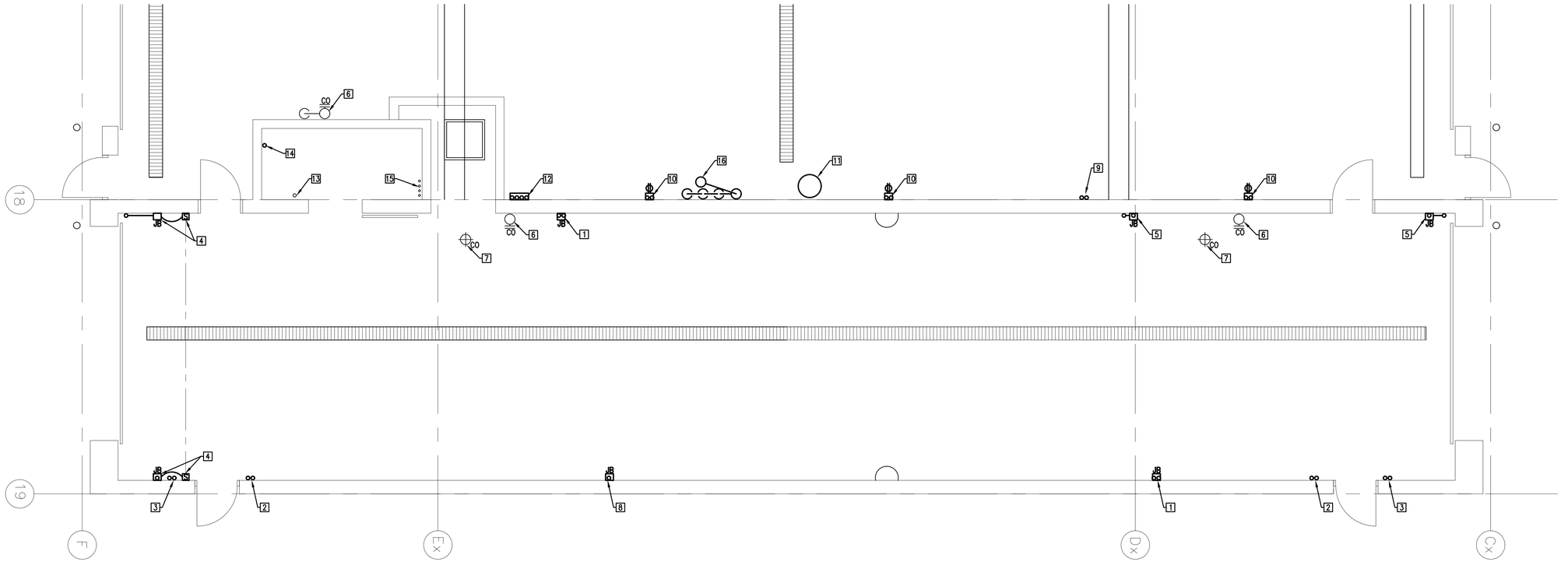
project engineer: MT
project designer: BE

sheet title
MECHANICAL
DISTRIBUTION DIAGRAM
DEMOLITION AND NEW CONSTRUCTION

scale	drawn by	checked by	drawing no.
1:50	BE	MT	M401
project no.	plot date:		
DE23-566	2024-07-04		

PLOT DATE: Apr 4, 2024



1 MES001 MECHANICAL AND ELECTRICAL SERVICES - DEMOLITION AND NEW CONSTRUCTION
SCALE: 1:50

REFERENCE NOTES

1. EXISITNG UNDER SLAB POWER CONDUITS 2x20mm CONNECTED IN THE JUNCTION BOX, APPROXIMATE 500mm AFF. SCOPE OF WORK (TYPICAL WHERE INDICATED):
   1. IDENTIFY CIRCUITS FOR THE POWER WIRING WITHIN THE JUNCTION BOX, DISCONNECT THE POWER AND LABEL ACCORDINGLY.
   2. DISCONNECT AND REMOVE JUNCTION BOX AND CONDUITS TO APPROXIMATE 500mm BELOW SLAB, PRESERVE THE WIRING.
   3. UPON COMPLETION OF CIVIL WORK PROVIDE NEW DOUBLE GANG JUNCTION BOX (WEATHERPROOF WITH GASKETED COVER) IN THE SAME LOCATION. PROVIDE NEW LIQUID TIGHT CONDUITS AND FITTINGS FROM THE EXISTING UNDERGROUND CONDUIT TO THE BOX, PULL THE EXISTING WIRING THROUGH AND RECONNECT ACCORDINGLY.

2. EXISTING UNDER SLAB FIRE ALARM CONDUITS 2x20mm SERVING PULL STATION APPROX 1,500mm AFF. SCOPE OF WORK (TYPICAL WHERE INDICATED):
   1. BYPASS THE FIRE ALARM DEVICE IN THE FIRE ALARM PANEL.
   2. DISCONNECT AND REMOVE CONDUITS TO APPROXIMATE 500mm BELOW SLAB, PRESERVE THE FIRE ALARM WIRING.
   3. UPON COMPLETION OF CIVIL WORK PROVIDE NEW LIQUID TIGHT CONDUITS AND FITTINGS FROM THE EXISTING UNDERGROUND CONDUIT TO THE PULL STATION, PULL THE EXISTING WIRING THROUGH AND RECONNECT ACCORDINGLY.
   4. PROVIDE TEST AND VERIFICATION OF THE FIRE ALARM SYSTEM.
   5. ALL WORK BY THE BASE BUILDING FIRE ALARM VENDOR.

3. EXISTING UNDER SLAB POWER CONDUITS 2x20mm CONNECTED IN THE "EXIT" SIGN, APPROXIMATE 2,200mm AFF. SCOPE OF WORK (TYPICAL WHERE INDICATED):
   1. IDENTIFY CIRCUITS FOR THE POWER WIRING SERVING EMERGENCY AND EXIT SIGN, DISCONNECT THE POWER AND LABEL ACCORDINGLY.
   2. DISCONNECT AND REMOVE CONDUITS FROM THE EXIT SIGN TO APPROXIMATE 500mm BELOW SLAB, PRESERVE THE WIRING.
   3. UPON COMPLETION OF CIVIL WORK PROVIDE NEW LIQUID TIGHT CONDUIT AND FITTINGS FROM THE EXISTING UNDERGROUND CONDUIT TO THE EXIST SIGN PULL THE EXISTING WIRING THROUGH AND RECONNECT ACCORDINGLY.

4. EXISTING 2 x DOUBLE GANG BOXES, ONE HOUSING DOOR SENSOR AND ANOTHER WIRING FROM THE DOOR CONTROLS, APPROXIMATE 500mm AFF. SCOPE OF WORK (TYPICAL FOR 2 WHERE INDICATED):
   1. DISCONNECT THE WIRING FROM THE DOOR TO THE BOX AND LABEL ACCORDINGLY.
   2. DISCONNECT AND REMOVE SENSOR C/W BOX, SALVAGE SENSOR FOR REINSTALLATION LATER.
   3. DISCONNECT AND REMOVE JUNCTION BOXES AND CONDUIT TO APPROXIMATE 1m ABOVE THE SLAB, PRESERVE THE WIRING.
   4. UPON COMPLETION OF CIVIL WORK PROVIDE 2 NEW DOUBLE GANG JUNCTION BOX (WEATHERPROOF WITH GASKETED COVER ANDONE FOR SENSOR WITHOUT COVER) IN THE SAME LOCATION. PROVIDE NEW LIQUID TIGHT CONDUITS AND FITTINGS FROM THE EXISTING CONDUIT TO THE BOX, PULL THE EXISTING WIRING THROUGH AND RECONNECT ACCORDINGLY.

5. EXISITNG UNDER SLAB POWER CONDUIT 1x20mm AND AND 1x20mm ABOVE CONNECTED IN THE JUNCTION BOX, APPROXIMATE 500mm AFF. SCOPE OF WORK (TYPICAL WHERE INDICATED):
   1. IDENTIFY CIRCUITS FOR THE POWER WIRING WITHIN THE JUNCTION BOX, DISCONNECT THE POWER AND LABEL ACCORDINGLY.
   2. DISCONNECT AND REMOVE JUNCTION BOX AND CONDUITS TO APPROXIMATE 500mm BELOW SLAB AND TO APPROX 1,000 ABOVE SLAB, PRESERVE THE WIRING.
   3. UPON COMPLETION OF CIVIL WORK PROVIDE NEW DOUBLE GANG JUNCTION BOX (WEATHERPROOF WITH GASKETED COVER) IN THE SAME LOCATION. PROVIDE NEW LIQUID TIGHT CONDUITS AND FITTINGS FROM THE EXISTING UNDERGROUND AND ABOVE GROUND CONDUITS TO THE BOX, PULL THE EXISTING WIRING THROUGH AND RECONNECT ACCORDINGLY.

6. EXISTING 75ø RAIN WATER LEADER (CAST IRON, INSULATED) FROM THE ROOF DRAIN DOWN. REMOVE PIPE FROM APPROX 1m AFF TO THE MAIN UNDERSLAB. PROVIDE TEMPORARY PLASTIC PIPE TO FROM THE PIPE TO THE TRENCH DRAIN IN THE WASH BAY.. UPON COMPLETION OF CONSTRUCTION PROVIDE NEW PIPE TO MATCH THE EXISTING C/W NEW PIPE CLEANOUT AT THE LOW LEVEL. RECONNECT AND RE-INSULATE ACCORDINGLY. TYPICAL FOR 3.

7. EXISITNG CLEAN OUT FOR THE UNDERGROUND PIPE IN THE FLOOR. REMOVE CLEANOUT AND VERTICAL PIPE DURING THE CONSTRUCTION AND INSTALL NEW UPON COMPLETION. NEW CLEANOUT SHALL BE HEAVY DUTY.

8. EXISITNG UNDER SLAB POWER CONDUITS 1x20mm CONNECTED IN THE JUNCTION BOX, APPROXIMATE 500mm AFF. SCOPE OF WORK (TYPICAL WHERE INDICATED):
   1. IDENTIFY CIRCUITS FOR THE POWER WIRING WITHIN THE JUNCTION BOX, DISCONNECT THE POWER AND LABEL ACCORDINGLY.
   2. DISCONNECT AND REMOVE JUNCTION BOX AND CONDUIT TO APPROXIMATE 500mm BELOW SLAB, PRESERVE THE WIRING.
   3. UPON COMPLETION OF CIVIL WORK PROVIDE NEW DOUBLE GANG JUNCTION BOX (WEATHERPROOF WITH GASKETED COVER) IN THE SAME LOCATION. PROVIDE NEW LIQUID TIGHT CONDUIT AND FITTINGS FROM THE EXISTING UNDERGROUND CONDUIT TO THE BOX, PULL THE EXISTING WIRING THROUGH AND RECONNECT ACCORDINGLY.

9. EXISTING UNDER SLAB FIRE ALARM CONDUITS 2x20mm SERVING FIRE ALARM BELL. SCOPE OF WORK (TYPICAL WHERE INDICATED):
   1. BYPASS THE FIRE ALARM DEVICE IN THE FIRE ALARM PANEL.
   2. DISCONNECT AND REMOVE CONDUITS TO APPROXIMATE 500mm BELOW SLAB, PRESERVE THE FIRE ALARM WIRING.
   3. UPON COMPLETION OF CIVIL WORK PROVIDE NEW LIQUID TIGHT CONDUITS AND FITTINGS FROM THE EXISTING UNDERGROUND CONDUIT TO THE PULL STATION, PULL THE EXISTING WIRING THROUGH AND RECONNECT ACCORDINGLY.
   4. PROVIDE TEST AND VERIFICATION OF THE FIRE ALARM SYSTEM.

   ALL WORK BY THE BASE BUILDING FIRE ALARM VENDOR.

10. EXISITNG UNDER SLAB POWER CONDUITS 2x20mm CONNECTED IN THE JUNCTION BOX WITH RECEPTACLE, APPROXIMATE 1m AFF. SCOPE OF WORK (TYPICAL WHERE INDICATED):
    1. IDENTIFY CIRCUITS FOR THE POWER WIRING WITHIN THE JUNCTION BOX, DISCONNECT THE POWER AND LABEL ACCORDINGLY.
    2. DISCONNECT AND REMOVE JUNCTION BOX/RECEPTACLE AND CONDUITS TO APPROXIMATE 500mm BELOW SLAB, PRESERVE THE WIRING.
    3. UPON COMPLETION OF CIVIL WORK PROVIDE NEW DOUBLE GANG JUNCTION BOX AND DUPLEX RECEPTACLE (TO MATCH EXISTING) IN THE SAME LOCATION. PROVIDE NEW LIQUID TIGHT CONDUITS AND FITTINGS FROM THE EXISTING UNDERGROUND CONDUIT TO THE BOX, PULL THE EXISTING WIRING THROUGH AND RECONNECT ACCORDINGLY.

11. EXISTING EYE WASH STATION. DISCONNECT AND REMOVE 50ø PVC DRAIN PIPE AND REINSTALL UPON COMPLETION FOF CIVIL WORK.

12. EXISITNG UNDER SLAB POWER CONDUITS 4x20mm CONNECTED IN THE JUNCTION BOX, APPROXIMATE 250mm AFF. SCOPE OF WORK (TYPICAL WHERE INDICATED):
    1. IDENTIFY CIRCUITS FOR THE POWER WIRING WITHIN THE JUNCTION BOX, DISCONNECT THE POWER AND LABEL ACCORDINGLY.
    2. DISCONNECT AND REMOVE JUNCTION BOX AND CONDUIT TO APPROXIMATE 500mm BELOW SLAB, PRESERVE THE WIRING.
    3. UPON COMPLETION OF CIVIL WORK PROVIDE NEW QUAD JUNCTION BOX (WEATHERPROOF WITH GASKETED COVER) IN THE SAME LOCATION. PROVIDE NEW LIQUID TIGHT CONDUIT AND FITTINGS FROM THE EXISTING UNDERGROUND CONDUIT TO THE BOX, PULL THE EXISTING WIRING THROUGH AND RECONNECT ACCORDINGLY.

13. EXISTING 32ø MM WATER LINE. PROTECT DURING CONSTRUCTION.

14. EXISITNG UNDER SLAB POWER CONDUIT 38ø CONDUIT AND FEEDER TO THE DISCONNECT FOR THE MAIN WASH BAY 100A SERVICE, APPROXIMATE 1m AFF. SCOPE OF WORK (TYPICAL WHERE INDICATED):
    1. IDENTIFY SOURCE FOR FOR THE POWER WIRING, DISCONNECT THE POWER AND LABEL ACCORDINGLY.
    2. DISCONNECT AND REMOVE FEEDER AND CONDUIT TO APPROXIMATE 500mm BELOW SLAB, PRESERVE THE WIRING.
    3. PROVIDE NEW LIQUID TIGHT CONDUITS AND FITTINGS FROM THE EXISTING UNDERGROUND CONDUIT TO THE DISCONNECT SWITCH ON THE OTHER WALL (REQUIRES PHASED CIVIL WORK), PULL THE EXISTING WIRING (EXTEND AS REQUIRE) THROUGH AND RECONNECT ACCORDINGLY.

15. EXISTING PIPE DOWN THE WALL TO THE SPLITTER FOR THE PLASTIC TRAP SEAL PRIMER HOSES (4). TEMPORARY DISCONNECT ALL HOSES, REMOVE AND REINSTATE UPON COMPLETION OF WORK.

16. EXISTING 50ø VENT PIPING UNDERGROUND. DISCONNECT AND REMOVE ALL PIPING UP TO APPROX. 500MM BELOW SLAB AND SPLITTER ABOVE GROUND UP TO APROX 1m AFF. UPON COMPLETION OF CIVIL WORK, PROVIDE ALL NEW PIPING AND INSTALL TO MATCH THE EXISTING LAYOUT.

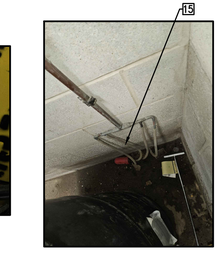
GENERAL NOTES

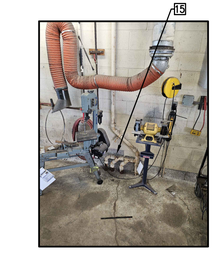
ALL NEW WIRING AND FEEDERS SHALL MATCH THE EXISTING SIZE AND TYPE.

CONDUIT SIZES FOR REFERENCE ONLY, VERIFY EXACT SIZE ON SITE AND PROVIDE NEW TO MATCH EXISTING.

ALL ELECTRICAL CONDUITS AND FITTINGS SHALL BE WEATHER PROOF, SUITABLE FOR BURIAL AND/OR OUTDOOR INSTALLATION.

REFERENCE PHOTOS





#	DATE	REVISION
1	23/AUG/2024	ISSUED FOR TENDER

#	DATE	ISSUED

THE ARCHITECT IS NOT RESPONSIBLE FOR THE ACCURACY OF SURVEY, STRUCTURAL, MECHANICAL, ELECTRICAL, ETC. ENGINEERING INFORMATION SHOWN ON THE DRAWING. REFER TO THE APPROPRIATE ENGINEERING DRAWINGS BEFORE PROCEEDING WITH WORK.

CONTRACTOR SHALL CHECK ALL DIMENSIONS ON THE WORK AND REPORT ANY DISCREPANCY TO THE ARCHITECT BEFORE PROCEEDING. CONSTRUCTION MUST CONFORM TO ALL APPLICABLE CODES AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.

THE DRAWING IS NOT TO BE SCALED.

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ISSUED FOR CONSTRUCTION

SIGNATURE _____

DATE _____

client:

MISSISSAUGA

client project no.
--

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DEMOLITION AND NEW CONSTRUCTION

scale	drawn by	checked by	drawing no.
1:50	BE	MT	MES100
project no.	plot date:		
DE23-566	2024-08-20		

PLOT DATE: August 23, 2024