

AIR HANDLING UNITS SCHEDULE-GAS FIRED MAKE UP AIR															
TAG	SERVICE	LOCATION	MAKE	MODEL	TYPE	SUPPLY FAN			HEATING CAPACITY			ELECTRICAL		WEIGHT (KG)	NOTES
						FLOW (L/S)	ESP (PA)	FAN MOTOR (HP)	INPUT (KW)	OUTPUT (KW)	FAN MOTOR (HP)	VOLT/PH/Hz	MCA		
AHU-3	PAINT ROOM	ROOF	ENGINEERED AIR	HE401/0/MV	DIRECT FIRED	17,940	120	25	735	2511	120	575/3/60	35	2400	1

NOTES:  
1. 3 SPEED CONTROL AND BACNET INTERFACE, HERESITE COATING, INTAKE HOOD, BURNER CONTROL.

HEAT PUMP SPLIT SYSTEM - OUTDOOR UNIT SCHEDULE														
TAG	SERVICE	LOCATION	MAKE	MODEL	TYPE	COOLING CAPACITY (KW)	HEATING CAPACITY (KW)	ELECTRICAL			EER	WEIGHT (KG)	NOTES	
								V/PH/Hz	KW	MOP				MCA
HP-100	FC-1a & FC-1b	ROOF	FUJITSU	AOU45RXLXZ	MULTI ZONE	15.5	16.5	208/1/60	4.28	30	28.9		93	1
HP-200	FC-2	ROOF	FUJITSU	24RCL	MULTI ZONE	7.9	7	208/1/60	2	30	28.9		93	1

NOTES:  
1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. SINGLE POINT ELECTRICAL CONNECTION, FUSED DISCONNECT SWITCH, AMBIENT CONTROL FOR OPERATION DOWN TO 0°F (-18°C) WITH FREEZE STAT. PROVIDE CONTROL WIRING FROM INDOOR UNIT TO OUTDOOR UNIT. PROVIDE EXTENDED 5 YEAR WARRANTY ON COMPRESSOR, REFRIGERANT 410A, C/W MOUNTING BASE.

HEAT PUMP SPLIT SYSTEM - INDOOR UNIT SCHEDULE													
TAG	SERVICE	LOCATION	MAKE	MODEL	TYPE	VOLUME (L/S)	DX COIL			WEIGHT (KG)	NOTES		
							ESP (PA)	COOLING (KW)	HEATING (KW)				
FC-1a	NE AREA	CEILING	FUJITSU	ARU24RLF	SLIM DUCT	390	88.36	5.2	5.8	73	208/1/60	23	1
FC-1b	INTERIOR	CEILING	FUJITSU	ARU24RLF	SLIM DUCT	390	88.36	5.2	5.8	73	208/1/60	23	1
FC-2	NW AREA	CEILING	FUJITSU	ARU24RLF	SLIM DUCT	390	88.36	5.2	5.8	73	208/1/60	23	1

NOTES:  
1. PROVIDE CONDENSATE DRAIN PUMP, PIPED TO DRAIN, C/W DISCONNECTED SWITCH.

GLYCOL HEATING HEAT PUMP SCHEDULE-GLYCOL SYSTEM													
TAG	SERVICE	LOCATION	MAKE	MODEL	TYPE	WATER FLOW RATE (L/S)	ELECTRICAL			WEIGHT (KG)	DIMENSIONS (MM)	NOTES	
							MCA	MOP	V/PH/Hz				
HP-HW	UNIT HEATERS	ROOF	TRANE	ARP015XNIC2R50AASN	AIR SOURCE	2.5	38	60	575/3/60	3100	81x210x190	1	

NOTES:  
1. COMPLETE WITH:  
SINGLE POINT ELECTRICAL CONNECTION. AMBIENT CONTROL FOR OPERATION DOWN TO 0°F (-18°C) WITH FREEZE STAT. PROVIDE EXTENDED 5 YEAR WARRANTY ON COMPRESSOR, REFRIGERANT 410A.  
BUILT-IN CIRCULATION PUMP:  
PRIMARY LOOP, TWO PIPE 2.5 L/S (40 GPM) AT 43 FT HEAD, 3x3x6 PUMPS, SHP, BUILT-IN MINI GLYCOL FEEDER WITH 8 GAL EXPANSION TANK, VFD ON FANS STAINLESS STEEL INLET HEADER AND HEAT EXCHANGER, 5 YEARS COMPRESSOR WARRANTY AND ELECTRONIC LOAD CONTROL.

HEAT RECOVERY VENTILATOR SCHEDULE													
TAG	LOCATION	MAKE	MODEL	EXHAUST AIR FLOW (L/S)	O/A INTAKE AIR FLOW (L/S)	ELECTRICAL			WEIGHT (KG)	DIMENSIONS (MM)	NOTES		
						MCA	MOP	V/PH/Hz					
HRV-1	ROOF	LIFE BREATH	1500E-ECM	570	570	22.8	30	240/1/60	109	1702L x 1118W x 1041H			

NOTES:  
1. AIR INTAKE SHUT-OFF FOR DEFROST. ALUMINUM CORE (2 CORES), WASHABLE FOAM FILTERS ACCESS DOOR LOCATED FOR EASY MAINTENANCE. OPERATE ON PRE-SET SCHEDULE, DDC CONTROLLER, USER ADJUSTABLE.

CONTROL DAMPER SCHEDULE													
TAG	SERVICE	LOCATION	MAKE	MODEL	SIZE cmxcm	AIR FLOW (L/S)	TYPE	NOTES					
								MD-AHU 3A	SUPPLY AIR TO P.R.	ROOF	TAMCO	9000	3300x1500
MD-AHU 3B	RELIEF AIR	ROOF	TAMCO	9000	1500x400	5,000	PARALLEL BLADE	1					
MD-AHU 3C	SUPPLY AIR TO SHOPS	ROOF	TAMCO	9000	1100x800	6,000	PARALLEL BLADE	1					

NOTES:  
1. SITE CONFIRM CONNECTION SIZE. IN LINE DUCTED, C/W SALT WATER RESISTANCE OPTION. POSITION BLADES TO DIRECT AIR FLOW DOWN. C/W MODULATING, SPRING RETURN ACTUATORS (MIN 4 ACTUATORS FOR MD-AHU3A AND 2 FOR MD-AHU3C)

UNIT HEATER SCHEDULE- HOT WATER/GLYCOL													
TAG	MAKE	MODEL	HEATING CAPACITY KW (MBH)	FLOW RATE L/S (GPM)	EWT F (C)	LWT F (C)	ELECTRICAL			WEIGHT (KG)	NOTES		
							HP	V/PH/Hz	MCA				
UH-1	TRANE	P-252	46 (160)	0.63 (10)	93 (200)	76 (170)	1/4	120/1/60		80	1		
UH-2	TRANE	P-252	46 (160)	0.63 (10)	93 (200)	76 (170)	1/4	120/1/60		80	1		
UH-3	TRANE	P-252	46 (160)	0.63 (10)	93 (200)	76 (170)	1/4	120/1/60		80	1		
UH-4	TRANE	P-252	46 (160)	0.63 (10)	93 (200)	76 (170)	1/4	120/1/60		80	1		

NOTES:  
1. C/W LOCAL DISCONNECT AND BAFFLES.

GLYCOL STORAGE TANK SCHEDULE							
TAG	MAKE	TYPE	CAPACITY (LITRES)	DIMENSIONS DIA xH (cm)	MATERIAL	NOTES	
						ST-1	AO SMITH
ST-1	AO SMITH	VERTICAL HW STORAGE	450	90 x200	STAINLESS STEEL	1	

NOTES:  
1. C/W MIN 50mm THICK FOAM INSULATION, PAINTED SHEET METAL JACKET, 50# (2") GLYCOL S & R CONNECTIONS, HIGH/LOW + 20# DRAIN CONNECTIONS ON BOTTOM/TOP + 20# 25# T & P TAPPING, SUITABLE FOR WORKING PRESSURE AT 6900 KPA (100PSI), AT 95° C, ASME RATED 316S.S.

EXPANSION TANK SCHEDULE							
TAG	SERVICE	MAKE	TYPE	CAPACITY (LITRES)	DIMENSIONS DIA xH (cm)	WEIGHT (KG)	NOTES

NOTES:  
1. PRE CHARGED TO 80 KPA, SUITABLE FOR USE WITH GLYCOL SYSTEM.

CONTROLS LEGEND	
SYMBOL	DESCRIPTION
[Symbol]	TEMPERATURE- PROGRAMMABLE
[Symbol]	TEMPERATURE SENSOR (DDC)
[Symbol]	3-WAY CONTROL VALVE
[Symbol]	2-WAY CONTROL VALVE
[Symbol]	WELL
[Symbol]	TEMPERATURE SENSOR
[Symbol]	TEMPERATURE SENSOR- STRAP ON
[Symbol]	PRESSURE SENSOR
[Symbol]	FLOW SWITCH
[Symbol]	SWITCH - AS NOTED
[Symbol]	DDC ROOM TEMPERATURE SENSOR
[Symbol]	DIFFERENTIAL PRESSURE SENSOR

GENERAL LEGEND	
SYMBOL	DESCRIPTION
[Symbol]	EQUIPMENT TAG
[Symbol]	DRAWING NOTE
[Symbol]	ADJ. ADJACENT
[Symbol]	AFF ABOVE FINISHED FLOOR
[Symbol]	CIE CONNECT INTO EXISTING
[Symbol]	DN DOWN
[Symbol]	EX EXISTING
[Symbol]	FA FROM ABOVE
[Symbol]	FB FROM BELOW
[Symbol]	GC GENERAL CONTRACTOR
[Symbol]	RE REMOVE EXISTING
[Symbol]	RL RELOCATE EXISTING
[Symbol]	SS STAINLESS STEEL
[Symbol]	TR TO REMAIN
[Symbol]	TYP TYPICAL
[Symbol]	U/G UNDERGROUND

SHEET METAL LEGEND	
SYMBOL	DESCRIPTION
[Symbol]	DEMOLITION
[Symbol]	NEW DUCTWORK
[Symbol]	ACOUSTICALLY INSULATED DUCT
[Symbol]	EXISTING DUCTWORK TO REMAIN
[Symbol]	EXISTING DUCTWORK TO BE REMOVED
[Symbol]	SUPPLY AIR DUCT RISER - UP
[Symbol]	RETURN AIR DUCT RISER - UP
[Symbol]	SUPPLY AIR DUCT RISER - DOWN
[Symbol]	RETURN AIR DUCT RISER - DOWN
[Symbol]	SUPPLY AIR GRILLE - NEW
[Symbol]	RETURN/EXHAUST AIR GRILLE - NEW
[Symbol]	SUPPLY AIR GRILLE - EXISTING
[Symbol]	RETURN/EXHAUST AIR GRILLE - EXISTING
[Symbol]	DOOR UNDERCUT
[Symbol]	DOOR GRILLE
[Symbol]	TURNING VANES
[Symbol]	ACCESS HATCH
[Symbol]	ACCESS PANEL
[Symbol]	HEAT TRACE CABLE
[Symbol]	EXHAUST FAN - CEILING MTD.
[Symbol]	EXHAUST FAN - IN-LINE
[Symbol]	FIRE DAMPER - NEW
[Symbol]	FIRE DAMPER - EXISTING
[Symbol]	SMOKE DAMPER - NEW
[Symbol]	SMOKE DAMPER - EXISTING
[Symbol]	MOTORIZED DAMPER
[Symbol]	BALANCING DAMPER
[Symbol]	BACK DRAFT DAMPER
[Symbol]	AIR FLOW (CFM/%)
[Symbol]	DIFFUSER/GRILLE TAG

PIPING LEGEND GENERAL	
SYMBOL	DESCRIPTION
[Symbol]	PRESSURE REDUCING VALVE
[Symbol]	ISOLATION/SHUT OFF VALVE
[Symbol]	GLOBE VALVE
[Symbol]	CIRCUIT BALANCING VALVE
[Symbol]	3-WAY MIXING VALVE
[Symbol]	PRESSURE RELIEF VALVE
[Symbol]	STRAINER
[Symbol]	CHECK VALVE
[Symbol]	CAP OFF
[Symbol]	BALANCING VALVE
[Symbol]	UNION
[Symbol]	PIPE BREAK
[Symbol]	PIPE DOWN
[Symbol]	PIPE UP
[Symbol]	TIE INTO EXISTING PIPING
[Symbol]	PIPE SLEEVE
[Symbol]	FLEXIBLE JOINT
[Symbol]	PIPE SECTION
[Symbol]	PUMP
[Symbol]	AIR VENT/AUTOMATIC AIR VENT
[Symbol]	PRESSURE GAUGE
[Symbol]	TEMPERATURE GAUGE
[Symbol]	NEW PIPE
[Symbol]	EXISTING PIPE TO REMAIN
[Symbol]	EXISTING PIPE TO BE REMOVED
[Symbol]	SUPPLY
[Symbol]	RETURN
[Symbol]	SLOPE

PIPING LEGEND	
SYMBOL	DESCRIPTION
[Symbol]	GLS GLYCOL SUPPLY
[Symbol]	GLR GLYCOL RETURN
[Symbol]	GAS NATURAL GAS PIPING
[Symbol]	RL REFRIGERANT LIQUID
[Symbol]	RV REFRIGERANT VAPOR

DRAWING LIST		
DWG. NO.	DESCRIPTION	SCALE
ME-1	LEGENDS, SITE PLAN, SCHEDULES AND DRAWING LIST	NTS
ME-2	GROUND FLOOR PLAN-DEMO	1:100
ME-3	GROUND FLOOR PLAN-NEW	1:100
ME-4	ROOF PLANS-DEMO AND NEW	AS SHOWN
ME-5	SCHEMATIC DIAGRAMS	NTS
ME-6	SECTIONS AND DETAILS	NTS

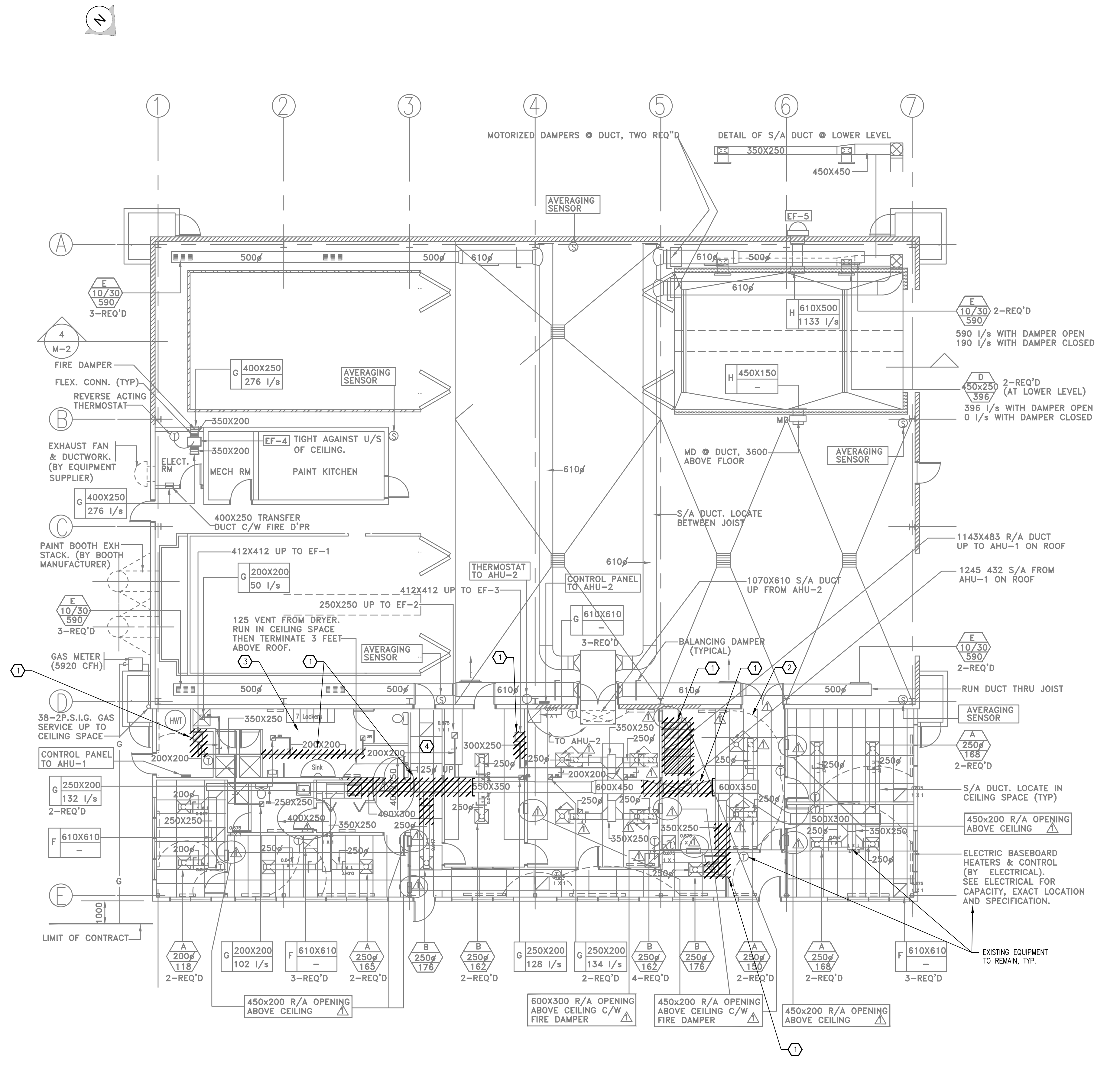


1 SITE PLAN  
SCALE: NTS

	Project No: 2018446	4 05/27/2019 ISSUED FOR TENDER	DESIGNED PW		<b>CANADIAN COAST GUARD VICTORIA BASE BUOY MAINTENANCE BUILDING HVAC UPGRADES LEGENDS, SITE PLAN, SCHEDULES AND DRAWING LIST</b>	SCALE NTS
		3 03/11/2019 ISSUED FOR TENDER REVIEW	DRAWN PAN			DATE MARCH 7, 2019
		2 11/28/2018 ISSUED FOR TENDER REVIEW	CHECKED DS			DRAWING NUMBER
		1 11/22/2018 ISSUED FOR TENDER REVIEW	RECOMMENDED			<b>ME-1</b>
	0 11/05/2018 ISSUED FOR PROGRESS REVIEW	APPROVED PW				<b>4</b>
DWG. NO.	DRAWING REFERENCES	NO.	DATE	REVISIONS		

**DRAWING NOTES**

1. REMOVE S/A, R/A AND E/A DUCTWORK AND MECHANICAL SERVICES/EQUIPMENT AS INDICATED. REFER TO DWG ME-3 FOR NEW LAYOUT. REMOVE ALL REDUNDANT ELECTRICAL AND MECHANICAL SERVICES AND CONNECTIONS. RETAIN EXISTING FIRE DAMPERS.
2. THE OFFICE AND WORKSHOP AREAS ARE TO BE KEPT IN OPERATION DURING DEMOLITION AND CONSTRUCTION. SHORT SERVICE OUTAGES (1-30 MINUTES) SHALL BE ALLOWED DURING OFFICE HOURS IF AND WHEN COORDINATED WITH THE BASE OPERATIONS MANAGER.
3. OUTAGES SHALL BE PRE-PLANNED AND AT LEAST 96 HOURS OF NOTICE PROVIDED BEFORE THE OUTAGE. ALLOW FOR AFTER HOUR CONSTRUCTION AND CLEAN UP BEFORE OFFICE HOURS RESUME IN EACH MORNING. CONSTRUCTION WORK ON WEEKENDS WILL BE ALLOWED, SUBJECT TO THE BASE OPERATIONS MANAGER'S APPROVAL. ANY SERVICE OUTAGES WHICH AFFECT THE OPERATIONS OF THE COMPUTER SERVERS MUST BE PRE-APPROVED AND THE DURATION OF THE OUTAGE MINIMIZED. MEASURES SHALL BE TAKEN TO PROTECT COMPUTER, ELECTRONICS AND PERSONAL EQUIPMENT IN THE FACILITY.
4. CEILING TILES MAY BE REMOVED AT THE START OF DEMOLITION AND LEFT OPEN UNTIL THE CONSTRUCTION WORK IS COMPLETE.



**1 GROUND FLOOR PLAN-DEMO**  
SCALE: 1:100

CANADIAN COAST GUARD  
VICTORIA BASE  
BUOY MAINTENANCE BUILDING  
HVAC UPGRADES  
GROUND FLOOR PLAN DEMO

SCALE	1:100
DATE	MARCH 7, 2019
DRAWING NUMBER	ME-2
	<b>4</b>

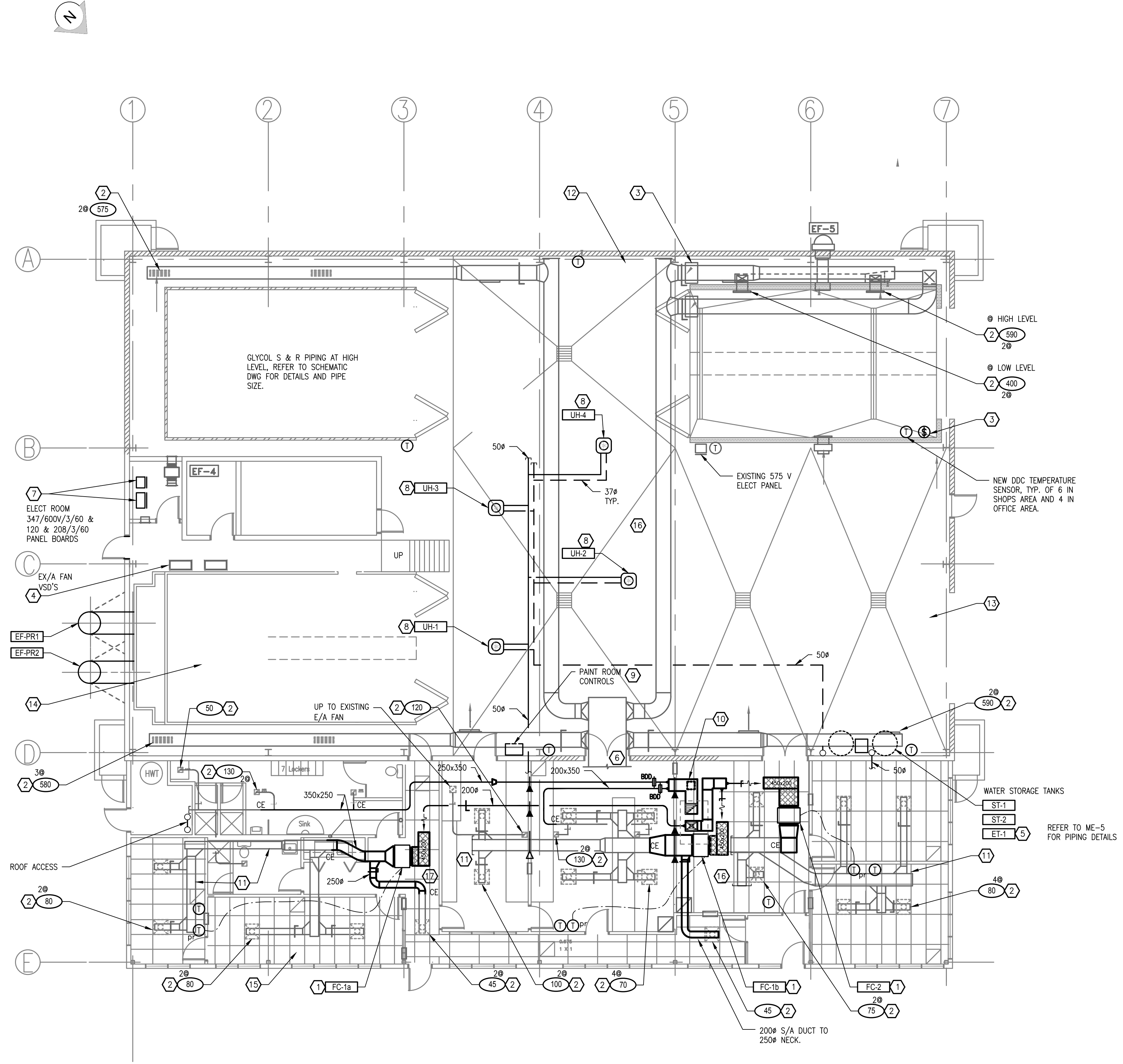
DWG. NO.	DRAWING REFERENCES	NOTES	NO.	DATE	REVISIONS	DESIGNED	APPROVED
			4	05/27/2019	ISSUED FOR TENDER	PW	
			3	03/11/2019	ISSUED FOR TENDER REVIEW	PAN	
			2	11/28/2018	ISSUED FOR TENDER REVIEW	DS	
			1	11/22/2018	ISSUED FOR TENDER REVIEW		
			0	11/05/2018	ISSUED FOR PROGRESS REVIEW	PW	



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DRAWING NOTES

- HEAT PUMP FAN COIL MOUNTED IN CEILING SPACE AND CONNECTED TO EXISTING DUCTWORK AS INDICATED. PROVIDE REFRIGERATION PIPING, POWER SUPPLY, CONTROLS WIRING FROM THE OUTDOOR UNIT TO THE INDOOR FAN COIL (NOT SHOWN FOR CLARITY). DISCHARGE DUCT FROM FAN COILS TO BE 1000 X 150 (LWD) AND RETURN DUCT TO BE RETURN CONNECTION SIZE. RETURN BOOT TO BE C/W 12 MM THICK ACOUSTIC INSULATION. PROVIDE PUMPED CONDENSATE, 12 MM DIAM. FROM COIL DRAIN PAN UP THROUGH ROOF TO OUTDOORS. ALL ROOF PENETRATIONS TO BE HORIZONTAL, THROUGH SIDE OF ROOF CAP, COMPLETE WITH FLASHING AND SEALING WATER-TIGHT. CONDENSATE AND REFRIGERANT PIPING NOT SHOWN. REFER TO ME-4 AND ME-5.
- RE-BALANCE EXISTING AIR TERMINAL TO THE AIR FLOW INDICATED IN L/S.
- PROVIDE NEW TIMER SWITCH (30, 60, 120 MIN & OFF) IN NEMA 4X ENCLOSURE TO CONTROL EXISTING SUPPLY AIR DAMPERS. PROVIDE LAMACOID LABEL TO INDICATE: "SET TIMER FOR LOW LEVEL SUPPLY AIR". REFER TO SEQUENCES OF CONTROL.
- ON THE EXISTING MEZZANINE LEVEL, PROVIDE NEW 5 HP, 575/3/60 VARIABLE SPEED DRIVES FOR EF-PR1 AND EF-PR2. MOUNT VSD'S AND LINE FILTERS ON WELDED, PRIME AND PAINTED STEEL SUPPORT STAND FASTENED TO FLOOR. MAINTAIN SERVICE ACCESS TO PAINT ROOM LIGHTS AND DO NOT BLOCK REMOVABLE FLOOR PLATE. MAINTAIN 1 M CLEARANCE IN FRONT OF VSD'S. RE-USE THE NEWER FAN MOTOR AND PROVIDE A NEW HIGH EFFICIENCY, ELECTRIC MOTOR TO REPLACE THE OLDER EXHAUST FAN MOTOR (ON THE NORTH FAN). PROVIDE POWER SUPPLY FROM PAINT ROOM CONTROL PANEL TO VSD'S AND TO EXHAUST FANS. PROVIDE CONTROL WIRING AS REQUIRED. REFER TO SEQUENCES OF CONTROL AND PAINT ROOM CONTROL DETAILS. REPAIR CONNECTIONS TO EXISTING FILTER P-GAUGE.
- PROVIDE PRIME AND PAINTED STEEL SUPPORT/PROTECTION CAGE FOR THE TWO STORAGE TANKS, THE EXPANSION TANK AND THE GLYCOL MIXING TANK. HEATING GLYCOL LOOP TO BE FILLED AUTOMATICALLY FROM THE GLYCOL MIXING TANK WHEN THE PRESSURE AT THE STORAGE TANKS DROPS BELOW 30 207 KPA (30 PSI). SEISMICALLY ANCHOR TO FLOOR. SITE CONFIRM BEST LOCATION FOR PIPING RISERS.
- SUPPLY AIR DUCT FROM ROOF LEVEL FROM AHU-3. REFER TO DRAWING ME-4.
- EXISTING 500 AMP, 600/3/60 PANEL AND PANEL A; 100 AMP, 120/208V, 3 PHASE, 4 WIRE. REMOVE EXISTING 600 BREAKERS AND POWER SUPPLY SERVING EXISTING AHU-1 AND AHU-2. REMOVE ALL CONTROL WIRING AND POWER WIRING BACK TO NEAREST INDOOR JUNCTION BOX. RE-USE EXISTING 70 BREAKER AND ELECTRICAL SERVICE TO THE PAINT ROOM CONTROL PANEL SERVING AHU-3 AND EXHAUST FANS EF-PR1 AND EF-PR2. PROVIDE NEW CONTROLS AND INTERFACE DEVICES AS INDICATED IN THE PAINT ROOM CONTROL DETAIL AND SEQUENCES OF CONTROL. PROVIDE NEW 600V/60 AMPS 3P BREAKER AND ROUTE 3-#6A1-#8 GRN GRD, 25 mm CONDUIT TO EQUIPMENT TO SERVE HEATING WATER HEAT PUMP HP-HW.
- IN PANEL A, PROVIDE TWO NEW, 208/30 AMP 2P BREAKER AND ROUTE 2-#10+1-#12 GRN GRD, 20 mm CONDUITS TO HP-100 AND HP-200. EXTEND 208/1/60 POWER SUPPLY FROM HP-100 AND HP-200 TO INDOOR FAN COILS. IF FAN COIL UNITS REQUIRE SEPARATE POWER SUPPLY, THE CONTRACTOR SHALL PROVIDE THE ADDITIONAL BREAKERS AND POWER CONNECTIONS. PROVIDE NEW 208/30 AMP 2P BREAKER AND ROUTE 2-#10+1-#12 GRN GRD, 20 mm CONDUITS TO SERVE HEAT RECOVERY VENTILATOR HRV-1. PROVIDE NEW 120V, 15 AMP 1P BREAKER AND POWER FEEDS TO SERVE GLYCOL MIXING TANK. PROVIDE NEW 120V, 15 AMP 1P BREAKER AND POWER SUPPLY TO SERVE UNIT HEATERS UH-1, UH-2, UH-3 AND UH-4. PROVIDE NEW 120V, 15 AMP 1P BREAKER, 15 AMP AND POWER SUPPLY TO SERVE CONTROL DAMPERS MD-AHU3A, MD-AHU3B, MD-AHU3C AND ROOF TOP GFI RECEPTACLE. PROVIDE NEW 120V, 15 AMP BREAKER, 15 AMP AND POWER SUPPLY TO SERVE CONTROLS SYSTEM.
- MOUNT UNIT HEATER AS HIGH AS POSSIBLE, IN JOIST SPACE. ENSURE ALL PIPING AND WIRING IS CLEAR OF THE OVERHEAD CRANE. PROVIDE DIFFUSER & LOCAL DISCONNECT SWITCH BESIDE EACH UNIT HEATER. FANS TO BE CONTROLLED BY DDC SYSTEM. REFER TO SEQUENCES OF CONTROL.
- REPLACE/MODIFY EXISTING PAINT ROOM HVAC CONTROLS TO PROVIDE CONTROL DEVICES AS INDICATED IN THE PAINT ROOM DETAIL ON DRWG ME-7 AND SEQUENCES OF CONTROL INDICATED IN THE SPECIFICATIONS. PROVIDE CONTROL DISPLAY SCREEN AND NEMA 1 ENCLOSURE(S).
- PROVIDE NEW 400 X 350 SUPPLY AND EXHAUST AIR DUCTS AND TRANSITION AS REQUIRED TO CONNECT TO INLET AND OUTLET OF HRV-1. BALANCE O/A FLOW TO EACH FAN COIL AT 140L/S. TERMINATE EACH O/A DUCT WITHIN 200 OF FAN COIL RETURN PLENUM. HRV-1 ON ROOF. REFER TO ME-5 FOR CONTINUATION.
- CLEAN EXISTING SUPPLY AIR DUCTWORK BEFORE RE-USE.
- THE OFFICE AND WORKSHOP AREAS ARE TO BE KEPT IN OPERATION DURING DEMOLITION AND CONSTRUCTION. SHORT SERVICE OUTAGES (1-30 MINUTES) SHALL BE ALLOWED DURING OFFICE HOURS IF AND WHEN COORDINATED WITH THE BASE OPERATIONS MANAGER.
- OUTAGES SHALL BE PRE-PLANNED AND AT LEAST 96 HOURS OF NOTICE PROVIDED BEFORE THE OUTAGE. ALLOW FOR AFTER HOUR CONSTRUCTION AND CLEAN UP BEFORE OFFICE HOURS RESUME IN EACH MORNING. CONSTRUCTION WORK ON WEEKENDS WILL BE ALLOWED, SUBJECT TO THE BASE OPERATIONS MANAGER'S APPROVAL. ANY SERVICE OUTAGES WHICH AFFECT THE OPERATIONS OF THE COMPUTER SERVERS MUST BE PRE-APPROVED AND THE DURATION OF THE OUTAGE MINIMIZED. MEASURES SHALL BE TAKEN TO PROTECT COMPUTER, ELECTRONICS AND PERSONAL EQUIPMENT IN THE FACILITY. CEILING TILES MAY BE REMOVED AT THE START OF DEMOLITION AND LEFT OPEN UNTIL THE CONSTRUCTION WORK IS COMPLETE.
- EQUIPMENT LOCATIONS SHOWN ARE APPROXIMATE AND THE CONTRACTOR SHALL CONFIRM BEST EXACT LOCATIONS TO SUIT SITE CONDITIONS. THE CONTRACTOR IS TO RESUPPORT AND RE-CONNECT FLEXIBLE DUCTWORK FOR APPROXIMATELY FOUR OF THE EXISTING DIFFUSERS WHICH HAVE BECOME DISCONNECTED.
- CONTRACTOR SHALL MODIFY/RELOCATE/REPLACE EXISTING CEILING, LIGHT FIXTURE, DUCTWORK AND PIPING SUPPORTS AND MISD WIRING, AND ELECT CONDUIT 20 MM DIAM AND LESS AS REQUIRED TO INSTALL THE NEW EQUIPMENT. THE CONTRACTOR SHALL ALSO ALLOW FOR THE RELOCATION OF TWO LIGHTING FIXTURES TO ADJACENT LOCATIONS TO ALLOW FOR BETTER SERVICE ACCESS TO EQUIPMENT. LOCATE ACCESS PANELS TO PROVIDE THE BEST SERVICE ACCESS.
- ALL EQUIPMENT SUPPLIED MUST PROVIDE CLEARANCE FOR THE OVERHEAD CRANE AND OTHER SHOP EQUIPMENT. THE CONTRACTOR SHALL CONFIRM THAT ALL EQUIPMENT IS CLEAR OF THE CRANE BY TRAVERSING THE CRANE THROUGH IT'S FULL MOVEMENT.
- ALL NEW EQUIPMENT SHALL BE INSTALLED C/W LOCAL SAFETY ISOLATION SWITCH, INDOOR HEAT PUMPS TO BE COMPLETE WITH VIBRATION ISOLATION HANGERS, SEISMIC RESTRAINT AND FLEX CONNECTIONS ON S/A AND R/A DUCTWORK CONNECTIONS.



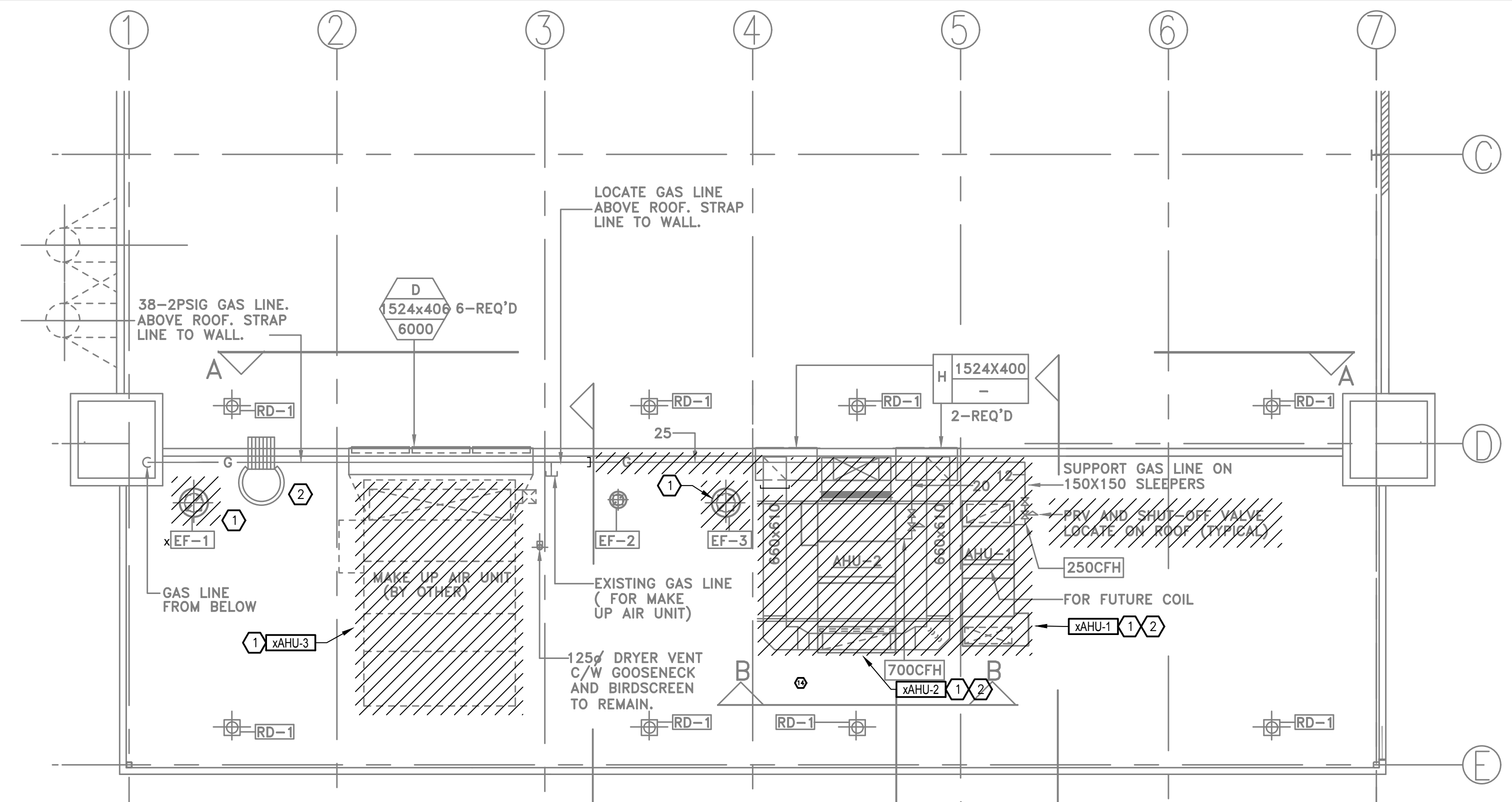
1 GROUND FLOOR PLAN-NEW  
SCALE: 1:100

<b>FISHERIES AND OCEANS CANADA</b> REAL PROPERTY AND SAFETY AND SECURITY		SCALE 1:100 DATE MARCH 7, 2019 DRAWING NUMBER <b>ME-3</b>	<b>4</b>
<b>CANADIAN COAST GUARD</b> <b>VICTORIA BASE</b> <b>BUOY MAINTENANCE BUILDING</b> <b>HVAC UPGRADES</b> <b>GROUND FLOOR PLAN</b> <b>NEW</b>			

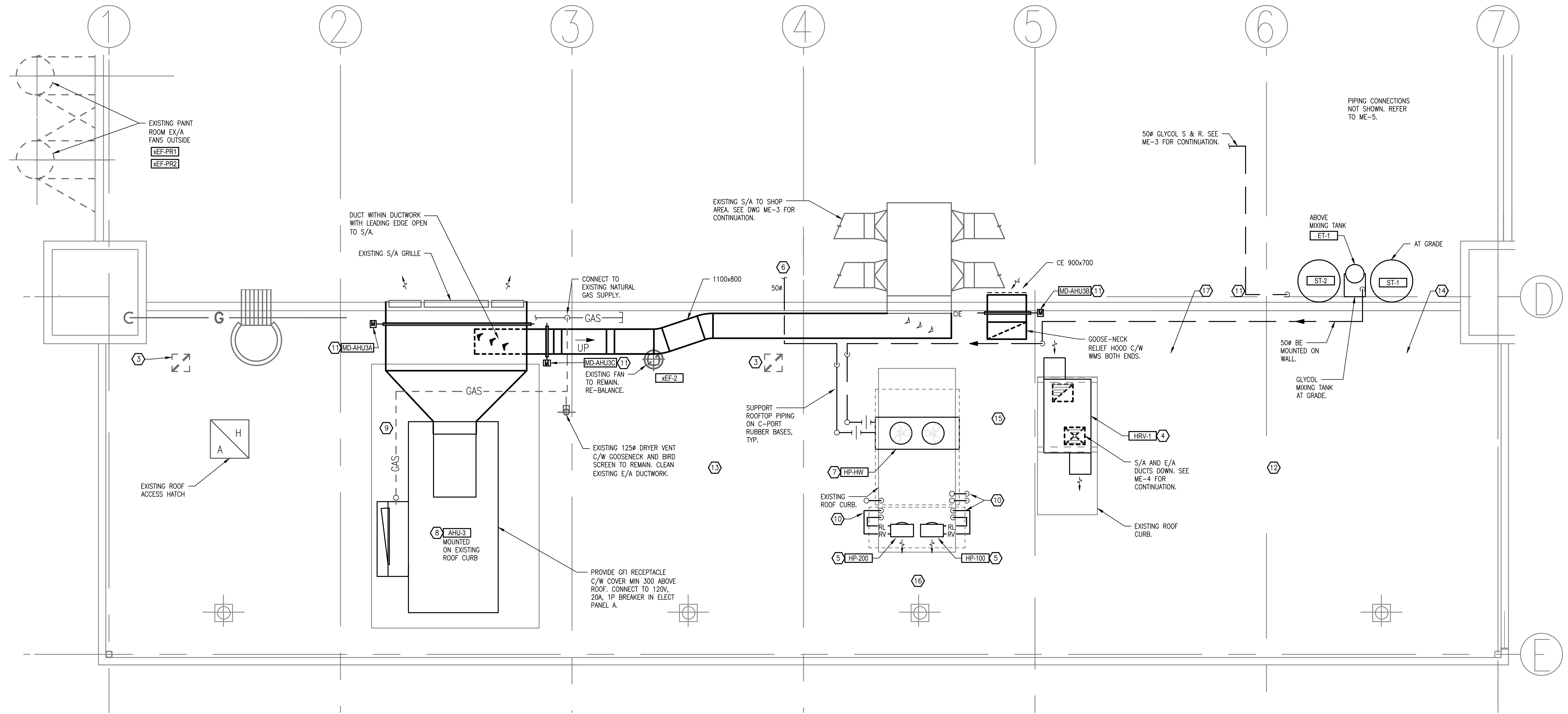
DWG. NO.	DRAWING REFERENCES	NOTES	NO.	DATE	REVISIONS	DESIGNED PW	4	05/27/2019	ISSUED FOR TENDER
						DRAWN PAN	3	03/11/2019	ISSUED FOR TENDER REVIEW
						CHECKED DS	2	11/28/2018	ISSUED FOR TENDER REVIEW
						RECOMMENDED	1	11/22/2018	ISSUED FOR TENDER REVIEW
						APPROVED PW	0	11/05/2018	ISSUED FOR PROGRESS REVIEW



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1 HVAC ROOF PLAN-DEMO  
SCALE: 1:100



2 ROOF PLAN-NEW  
SCALE: 1:50

- DRAWING NOTES**
- REMOVE EXISTING EQUIPMENT AND REDUNDANT SERVICES.
  - EXISTING xAHU-1 TO BE REMOVED AND ROOF PENETRATION TO BE INSULATED, FLASHED AND SEALED TO MAKE ROOF WATER TIGHT AROUND NEW SERVICE PENETRATIONS.
  - PROVIDE NEW REINFORCED, SHEET METAL COVER C/W R-20 INSULATION TO COVER EXISTING ROOF PENETRATION AND ROOF CURB. PROVIDE CAP, COMPLETE WITH FLASHING AND SEALED WATER-TIGHT. USE SIDE OF NEW CAP TO PROVIDE ACCESS FOR PIPING AND WIRING (AS REQUIRED)
  - HEAT RECOVERY VENTILATOR MOUNTED ON EXISTING ROOF CURBS. PROVIDE NEW CAP AS DESCRIBED IN NOTE 1 ABOVE AND PROVIDE ADDITIONAL PRIMED AND PAINTED SUPPORT PLATFORM FOR HRV-1. ANCHORS TO BE ON SIDE OF CURBS, HAVE FLASHING AND BE SEALED WATER TIGHT. PROVIDE CONTROL WIRING AND POWER SUPPLY WITH LOCAL DISCONNECT SWITCH.
  - HEAT PUMP MOUNTED ON EXISTING ROOF CURBS. PROVIDE NEW CAP AS DESCRIBED IN NOTE 1 ABOVE AND PROVIDE ADDITIONAL PRIMED AND PAINTED SUPPORT PLATFORM FOR HP-100 & HP-200. ANCHORS FOR STEEL PLATFORM TO BE ON SIDE OF CURBS, HAVE FLASHING AND BE SEALED WATER TIGHT. PROVIDE CONTROL WIRING AND POWER SUPPLY WITH LOCAL DISCONNECT SWITCH.
  - HEATING WATER (GLYCOL MIXTURE) SUPPLY AND RETURN PIPING TO RUN WITHIN THE JOIST SPACE. SITE CONFIRM EXACT ROUTING AND ENSURE ALL EQUIPMENT AND PIPING IS CLEAR OF THE OVERHEAD CRANE.
  - HEATING SYSTEM HEAT PUMP MOUNTED ON EXISTING ROOF CURBS. PROVIDE NEW CAP AS DESCRIBED IN NOTE 1 ABOVE AND PROVIDE ADDITIONAL PRIMED AND PAINTED SUPPORT PLATFORM FOR HP-HW TO SPREAD THE WEIGHT OF THE UNIT OVER 75% OF THE EXISTING ROOF CURBS. ANCHORS FOR STEEL PLATFORM TO BE ON SIDE OF CURBS, HAVE FLASHING AND BE SEALED WATER TIGHT. PROVIDE CONTROL WIRING AND POWER SUPPLY WITH LOCAL DISCONNECT SWITCH.
  - GAS FIRED AIR HANDLING UNIT AHU-3 MOUNTED ON EXISTING ROOF CURBS. PROVIDE ADDITIONAL PRIMED AND PAINTED SUPPORT PLATFORM/RAILS AS REQUIRED TO MOUNT THE UNIT ON THE EXISTING ROOF CURBS. ANCHORS TO BE ON SIDE OF CURBS, HAVE FLASHING AND BE SEALED WATER TIGHT. CONNECT TO DUCTWORK AND PROVIDE ADDITIONAL/MODIFIED INTAKE HOOD AS INDICATED. PROVIDE CONTROL WIRING AND POWER SUPPLY WITH LOCAL DISCONNECT SWITCH.
  - EXISTING NATURAL GAS LINE TO BE EXTENDED (50 MM) TO SERVE AHU-3. SITE CONFIRM CONNECTION SIZE AND LOCATION AND PROVIDE SEISMIC SHUT-OFF VALVE AND GAS REGULATOR.
  - REFRIGERANT PIPING TO FAN COIL UNITS AND CONDENSATE DRAIN FROM FAN COIL UNITS TO ROOF. REFER TO ME-3 AND ME-5.
  - PROVIDE WEATHER PROOF ENCLOSURE/COVER FOR MOTORIZED DAMPER.
  - THE OFFICE AND WORKSHOP AREAS ARE TO BE KEPT IN OPERATION DURING DEMOLITION AND CONSTRUCTION. SHORT SERVICE OUTAGES (1-30 MINUTES) SHALL BE ALLOWED DURING OFFICE HOURS IF AND WHEN COORDINATED WITH THE BASE OPERATIONS MANAGER.
  - OUTAGES SHALL BE PRE-PLANNED AND AT LEAST 96 HOURS OF NOTICE PROVIDED BEFORE THE OUTAGE. ALLOW FOR AFTER HOUR CONSTRUCTION AND CLEAN UP BEFORE OFFICE HOURS RESUME IN EACH MORNING. CONSTRUCTION WORK ON WEEKENDS WILL BE ALLOWED, SUBJECT TO THE BASE OPERATIONS MANAGER'S APPROVAL. ANY SERVICE OUTAGES WHICH AFFECT THE OPERATIONS OF THE COMPUTER SERVERS MUST BE PRE-APPROVED AND THE DURATION OF THE OUTAGE MINIMIZED. MEASURES SHALL BE TAKEN TO PROTECT COMPUTER, ELECTRONICS AND PERSONAL EQUIPMENT IN THE FACILITY. CEILING TILES MAY BE REMOVED AT THE START OF DEMOLITION AND LEFT OPEN UNTIL THE CONSTRUCTION WORK IS COMPLETE.
  - EQUIPMENT LOCATIONS SHOWN ARE APPROXIMATE AND THE CONTRACTOR SHALL CONFIRM BEST EXACT LOCATIONS TO SUIT SITE CONDITIONS. THE CONTRACTOR IS TO RESUPPORT AND RE-CONNECT FLEXIBLE DUCTWORK FOR APPROXIMATELY FOUR OF THE EXISTING DIFFUSERS WHICH HAVE BECOME DISCONNECTED.
  - CONTRACTOR SHALL MODIFY/RELOCATE/REPLACE EXISTING CEILING, LIGHT FIXTURE, DUCTWORK AND PIPING SUPPORTS AND MISC WIRING, AND ELECT. CONDUIT 20 MM DIAM AND LESS AS REQUIRED TO INSTALL THE NEW EQUIPMENT. THE CONTRACTOR SHALL ALSO ALLOW FOR THE RELOCATION OF TWO LIGHTING FIXTURES TO ADJACENT LOCATIONS TO ALLOW FOR BETTER SERVICE ACCESS TO EQUIPMENT. LOCATE ACCESS PANELS TO PROVIDE THE BEST SERVICE ACCESS.
  - ALL EQUIPMENT SUPPLIED MUST PROVIDE CLEARANCE FOR THE OVERHEAD CRANE AND OTHER SHOP EQUIPMENT. THE CONTRACTOR SHALL CONFIRM THAT ALL EQUIPMENT IS CLEAR OF THE CRANE BY TRAVELING THE CRANE THROUGH IT'S FULL MOVEMENT.
  - ALL NEW EQUIPMENT SHALL BE INSTALLED C/W LOCAL SAFETY ISOLATION SWITCH, INDOOR HEAT PUMPS TO BE COMPLETE WITH VIBRATION ISOLATION HANGERS, SEISMIC RESTRAINT AND FLEX CONNECTIONS ON S/A AND R/A DUCTWORK CONNECTIONS.

**FISHERIES AND OCEANS CANADA**  
REAL PROPERTY AND SAFETY AND SECURITY

CANADIAN COAST GUARD  
VICTORIA BASE  
BUOY MAINTENANCE BUILDING  
HVAC UPGRADES  
ROOF PLANS  
DEMO AND NEW

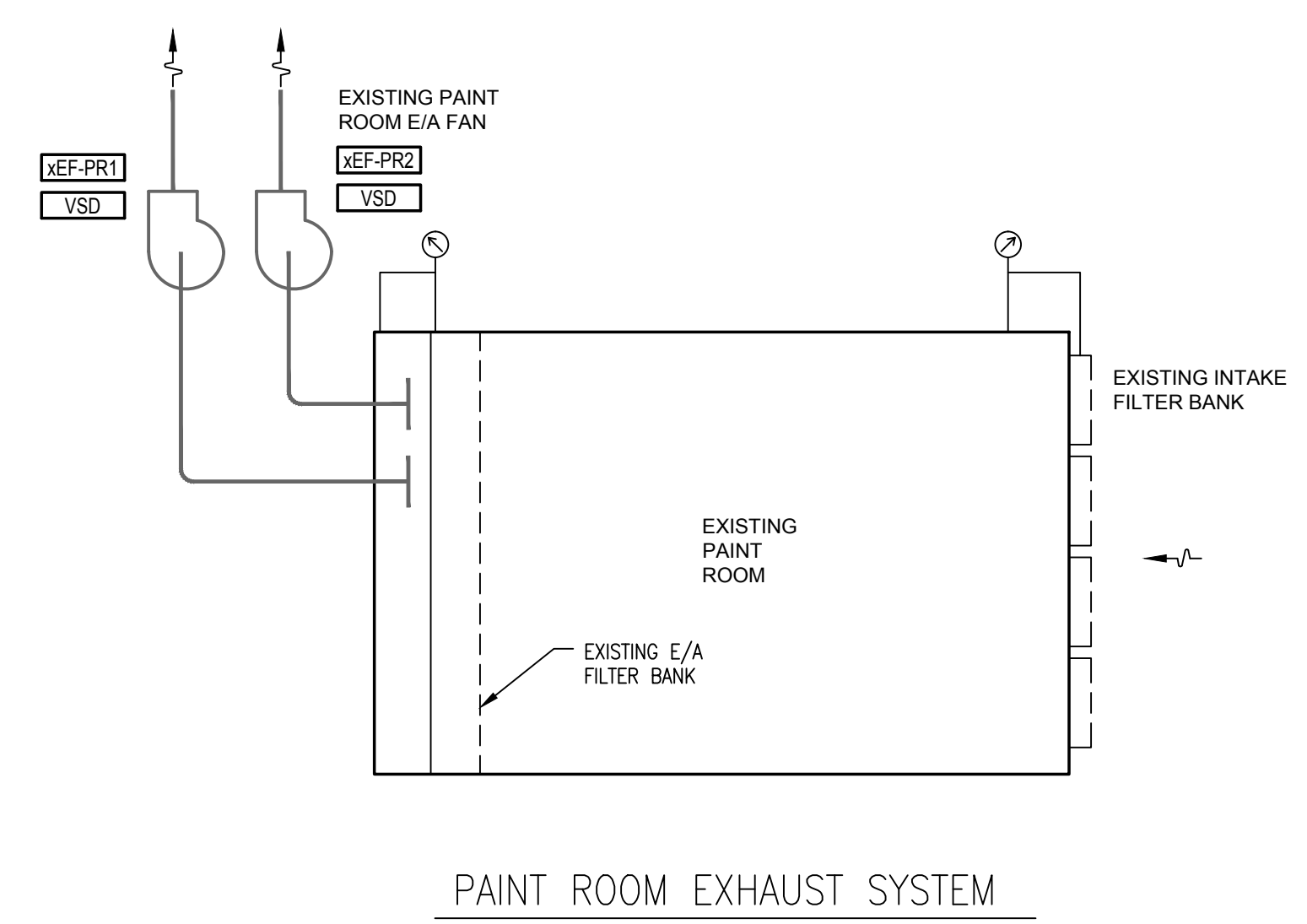
SCALE AS NOTED  
DATE MARCH 7, 2019  
DRAWING NUMBER ME-4

NO.	DATE	REVISIONS	DESIGNED PW
4	05/27/2019	ISSUED FOR TENDER	DESIGNED PW
3	03/11/2019	ISSUED FOR TENDER REVIEW	DRAWN PAN
2	11/28/2018	ISSUED FOR TENDER REVIEW	CHECKED DS
1	11/22/2018	ISSUED FOR TENDER REVIEW	RECOMMENDED
0	11/05/2018	ISSUED FOR PROGRESS REVIEW	APPROVED PW

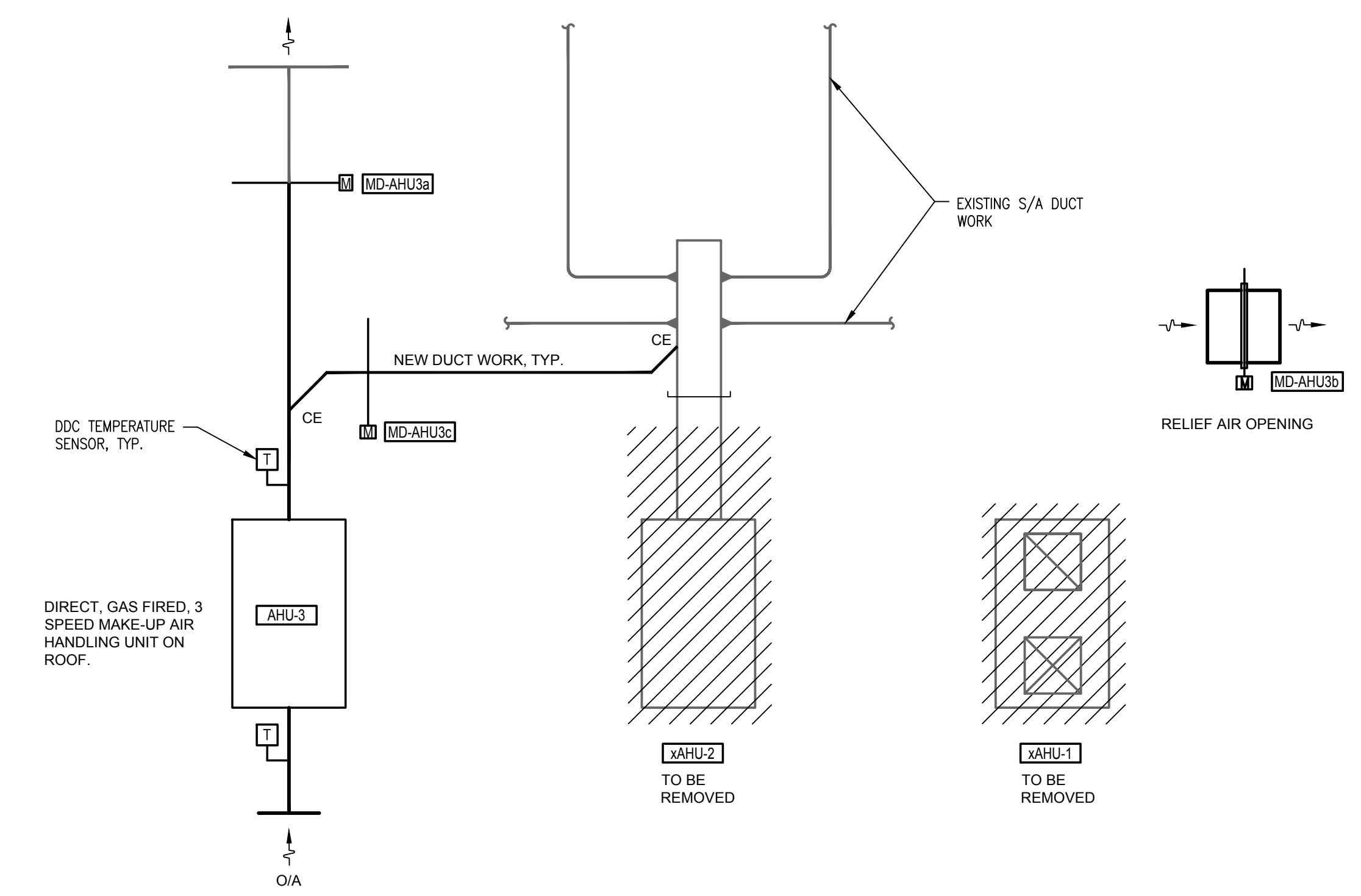
Project No: 2018446

**Prism**  
ENGINEERING  
saving you energy

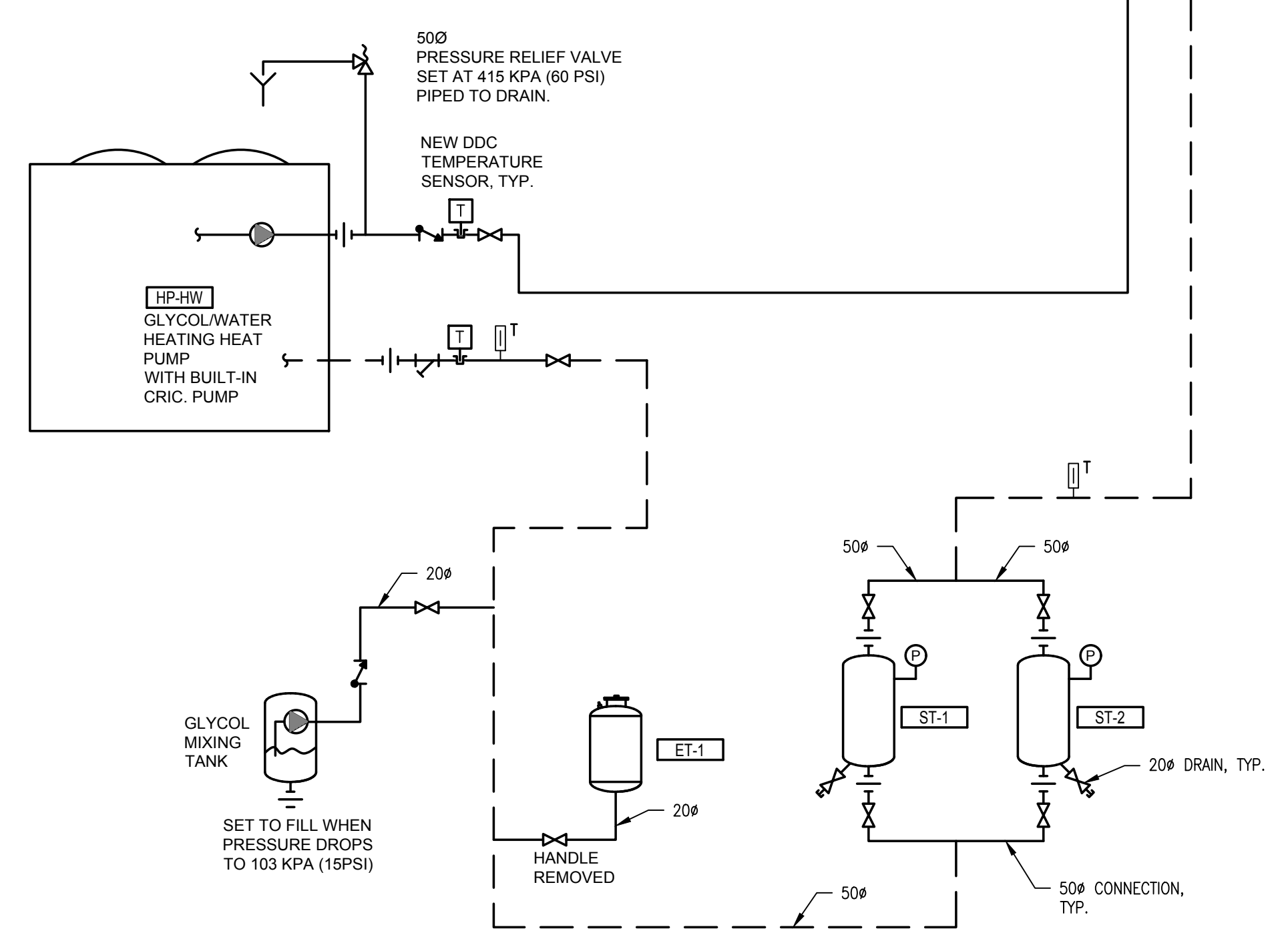
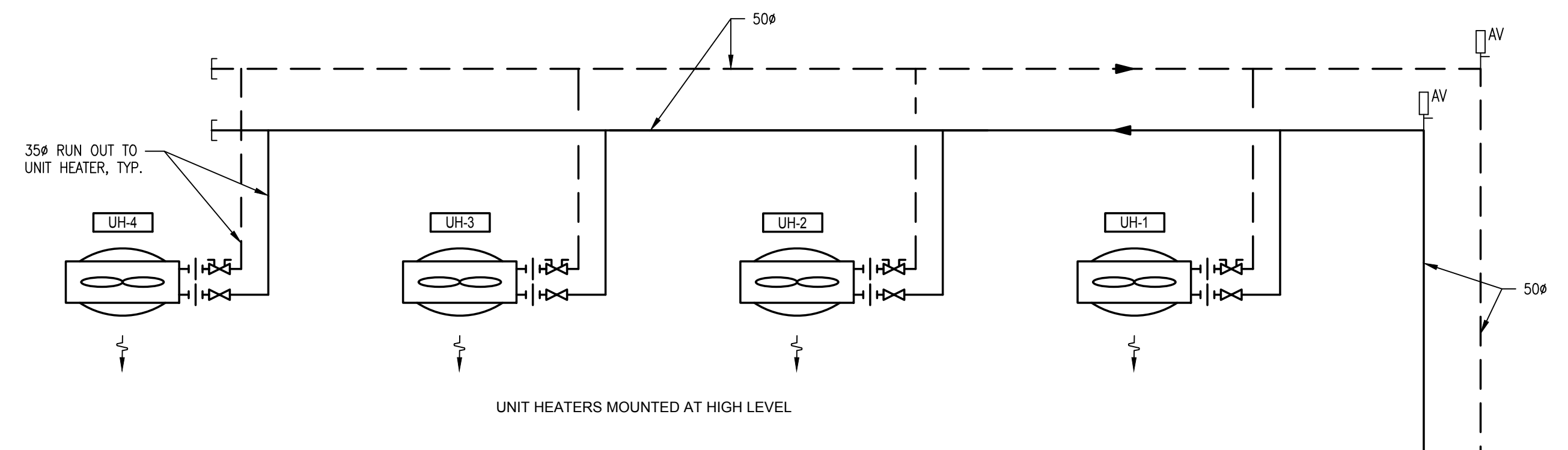
DWG. NO.	DRAWING REFERENCES	NOTES



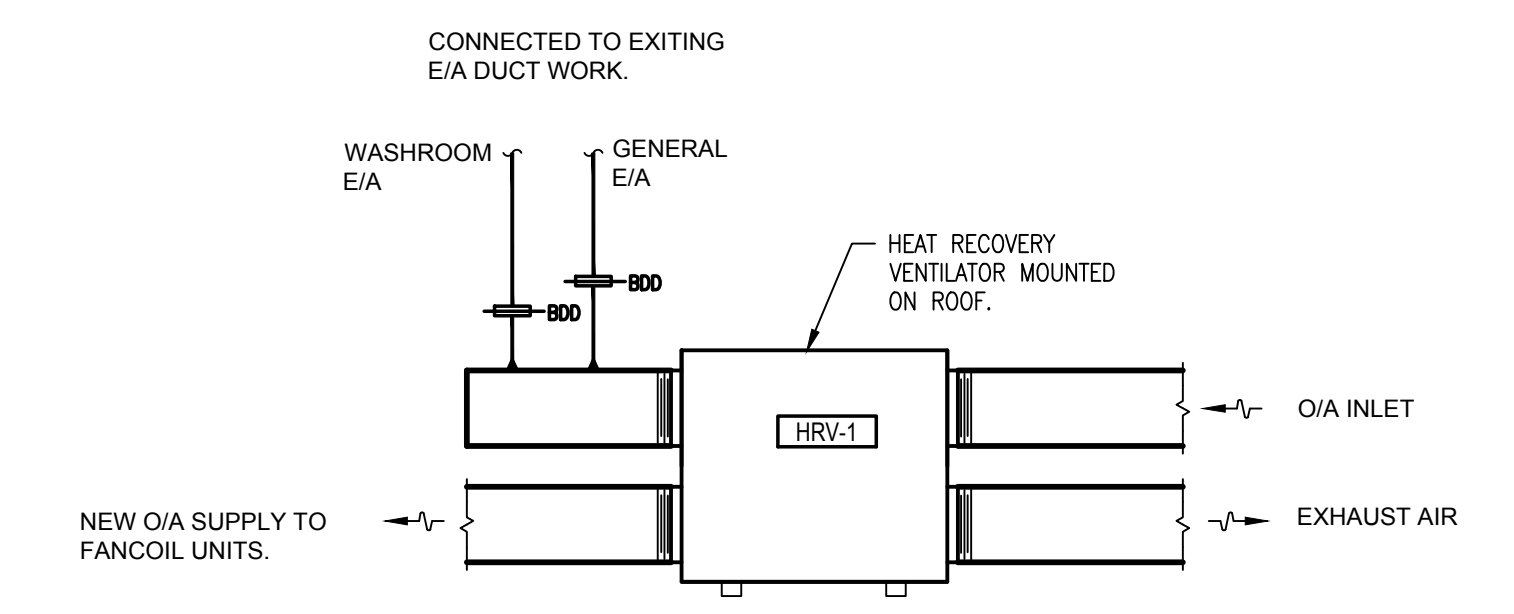
PAINT ROOM EXHAUST SYSTEM



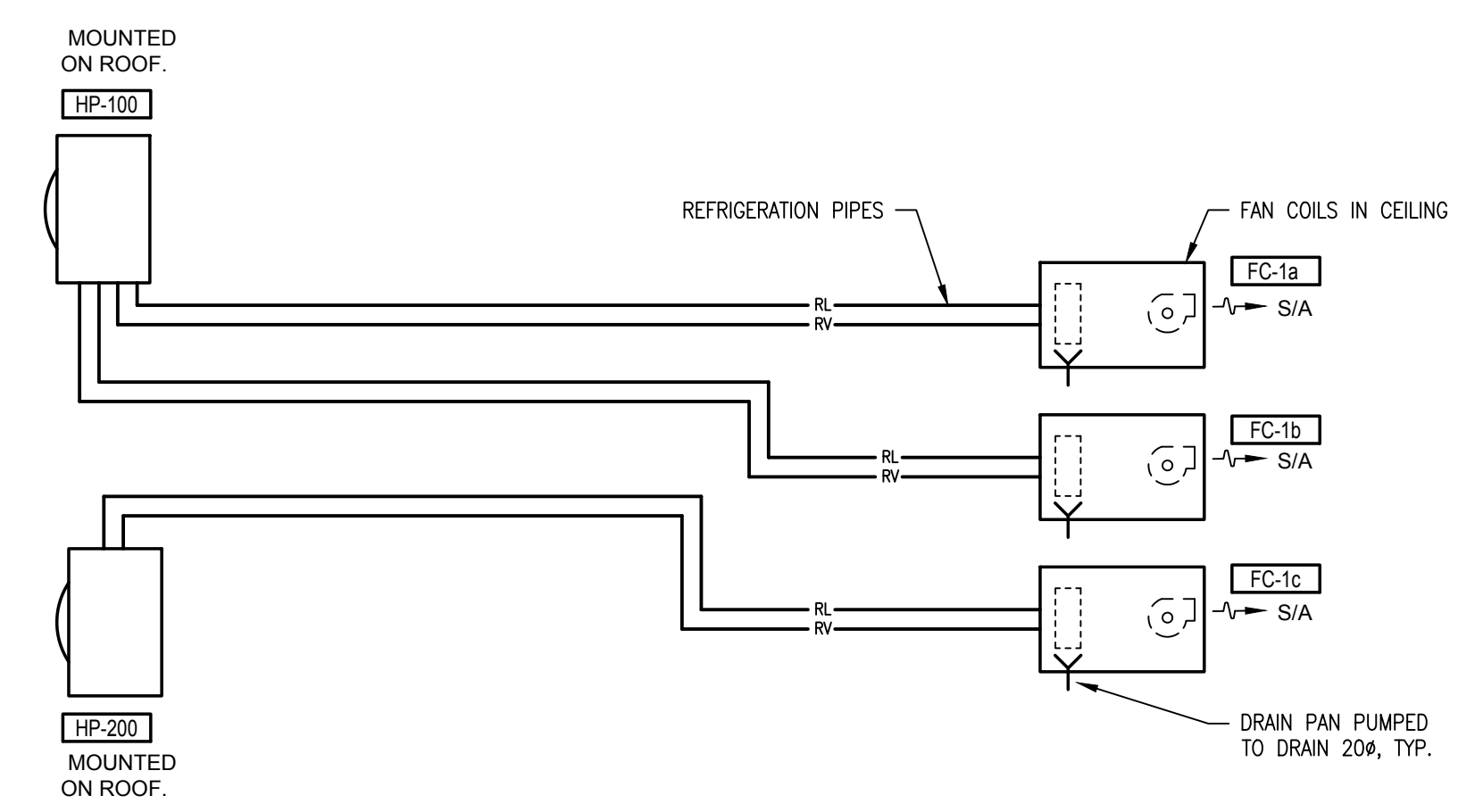
PAINT BOOTH MAKE-UP AIR



SUPPLEMENTAL HEAT PUMP GLYCOL HEATING SYSTEM



HEAT RECOVERY VENTILATOR



OFFICE HEAT PUMPS

DWG. NO.	DRAWING REFERENCES
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Project No: 2018446		4	05/27/2019	ISSUED FOR TENDER	DESIGNED PW
		3	03/11/2019	ISSUED FOR TENDER REVIEW	DRAWN PAN
		2	11/28/2018	ISSUED FOR TENDER REVIEW	CHECKED DS
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		NO.	DATE	REVISIONS	

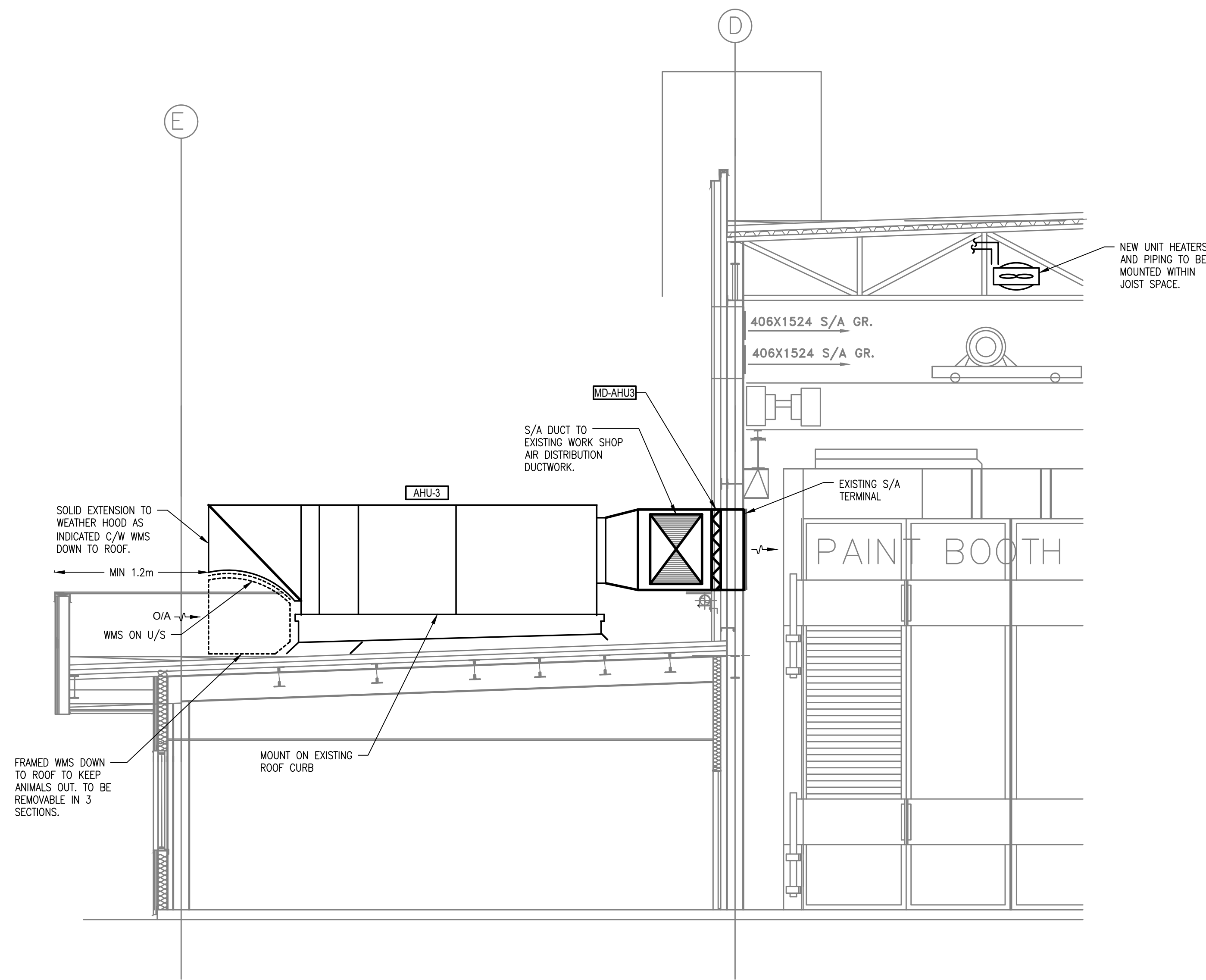
NO.	DATE	REVISIONS
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**FISHERIES AND OCEANS CANADA**  
REAL PROPERTY AND SAFETY AND SECURITY

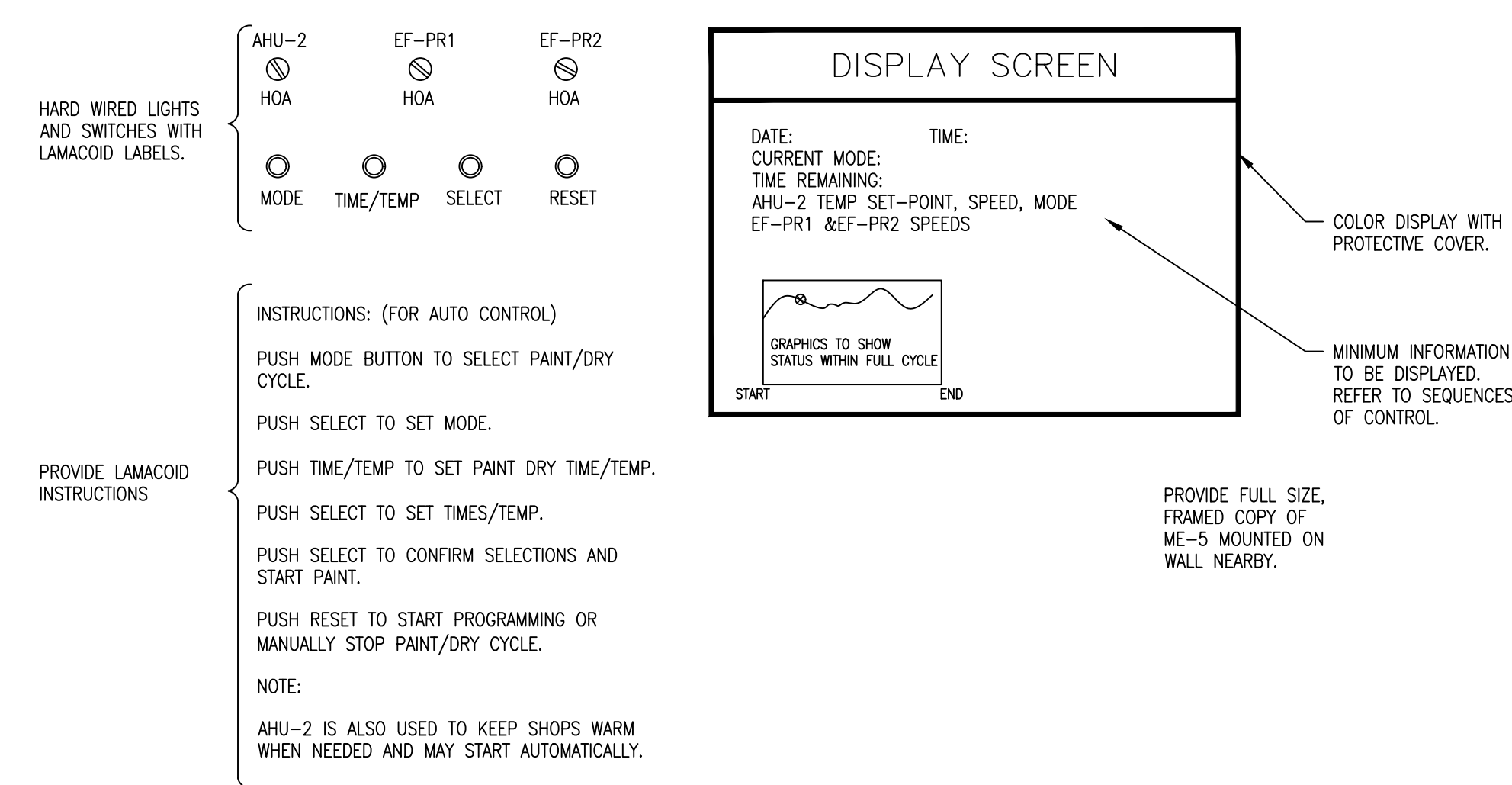
CANADIAN COAST GUARD  
VICTORIA BASE  
BUOY MAINTENANCE BUILDING  
HVAC UPGRADES  
SCHEMATIC DIAGRAMS

SCALE  
NTS  
DATE  
MARCH 7, 2019  
DRAWING NUMBER  
ME-5

4



1 SECTION  
SCALE: NTS



2 PAINT ROOM CONTROLS- DETAILS  
SCALE: NTS

DWG. NO.	DRAWING REFERENCES	NOTES	4	05/27/2019	ISSUED FOR TENDER	DESIGNED PW
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			NO.	DATE	REVISIONS	



Project No: 2018446