

EQUIPMENT ABBREVIATIONS :

- P - PUMP
 - SP - SUMP PUMP
 - BP - BOOSTER PUMP
 - HWP - HEATING WATER PUMP
 - CHP - CHILLED WATER PUMP
 - CWP - CONDENSING WATER PUMP
 - CSP - COOLING TOWER SUMP PUMP
 - HWRP - DOM. HOT WATER RECIR
 - VFD - VARIABLE FREQUENCY DRIVE
 - CT - CONTACTOR
 - CC - CONTROL COMPRESSOR
 - CH - CHILLER
 - B - BOILER
 - EF - EXHAUST FAN
 - RF - RETURN/RELIEF FAN
 - AH - AIR HANDLER
 - VAV - VARIABLE AIR VOLUME DAMPER BOX
 - AD - AREA DAMPER
 - SD - SMOKE DAMPER
 - SFD - FIRE SMOKE COMBINATION DAMPER
 - H - HUMIDIFIER
 - V - VALVE
 - WH - WATER HEATER
 - BAS - BUILDING AUTOMATION SYSTEM
 - CW - COLD WATER
 - MZU - MULTI ZONE UNIT
 - CEU - CABINET EXH. UNIT
 - HVU - HEATING VENTILATION UNIT
 - CFU - CEILING FAN UNIT
 - REU - ROOF EXH. UNIT
 - HC - HEATING COIL
 - ST - STEAM
 - CD - CONDENSATE RETURN
 - HWS - HEATING WATER SUPPLY
 - HWR - HEATING WATER RETURN
- PLUMBING ABBREVIATIONS:**
- HWS - HEATING WATER SUPPLY
 - HWR - HEATING WATER RETURN
 - HW - DOMESTIC HOT WATER
 - CW - DOMESTIC COLD WATER
 - GPM - GALLONS PER MINUTE
 - DB - DOUBLE VALVE OPERATOR
- AIR FLOW ABBREVIATIONS:**
- OSA - OUTSIDE AIR
 - RA - RETURN AIR
 - SA - SUPPLY AIR
 - EXH - EXHAUSTED AIR

CONTROL SUBSCRIPTS AND SUPERSCRIPTS:

- E - ELECTRIC/ELECTRONIC CONTROL DEVICE MAYBE RE-USED AT CONTRACTOR'S OPTION. OR REPLACE WITH DIGITAL CONTROL SYSTEM COMPATIBLE DEVICE, UNLESS NOTED OTHERWISE.
- N - NEW, IF DEVICE HAS NO SUPERSCRIPT DEVICE IS NEW

DAMPER/VALVE ACTUATORS:

ALL DAMPER/VALVE ACTUATORS (OUTSIDE AIR INTAKE, MIXING, EXHAUST AND STEAM VALVE) ARE TO BE REPLACED, AS NOTED ON THE PLANS AND CONTROL DIAGRAMS. EACH DAMPER ACTUATOR IS FIELD SPECIFIC AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING ANY EQUIPMENT. THE BALANCING AGENT IS RESPONSIBLE FOR ADJUSTING THESE DEVICES TO PROVIDE THE AIR FLOWS LISTED ON THE ORIGINAL DESIGN DOCUMENTS.

GENERAL CONTROLS

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
OUTSIDE AIR TEMP - GLOBAL		X			
OUTSIDE AIR HUMIDITY - GLOBAL		X			
BUILDING PRESSURE (PER BUILDING)		X			
NORMAL POWER	X				

REFERENCE DRAWINGS:

SEE ASSOCIATED REFERENCE PDF DRAWINGS (ORIGINAL DESIGN DOCUMENTS) FOR ADDITIONAL INFO ON HVAC EQUIPMENT TYPES, LOCATIONS, THERMOSTAT LOCATIONS AND ALL REQUIRED INFORMATION ABOUT ORIGINAL DESIGN AIR FLOWS AND STEAM FLOW RATES.

BALANCING SCOPE OF WORK:

CONTRACTOR RESPONSIBLE FOR HIRING A BALANCING FIRM TO RE-BLANCE ALL EQUIPMENT MODIFIED DURING CONTROLS UPGRADE TO THE ORIGINAL VALUES LISTED ON THE REFERENCE DRAWINGS. ITEMS TO INCLUDE, BUT NOT LIMITED TO, AIR HANDLER FLOW RATES, OUTSIDE AIR FLOW RATES, WATER/STEAM FLOW RATES, DAMPER MINIMUM AND MAXIMUM POSITIONS, AND VFD MINIMUM AND MAXIMUM VALUES. REPORT ALL DISCREPANCIES TO THE OWNER FOR CLARIFICATIONS.

WIRING SCOPE OF WORK:

- CONTRACTOR RESPONSIBLE FOR PROVIDING AND ROUTING OF ALL CONTROL WIRING, INCLUDING, BUT NOT LIMITED TO:
- PROVIDING WIRE RATED FOR WET LOCATIONS FOR ALL WIRING OUTSIDE THE BUILDING ENVELOPE.
 - PROVIDING CONDUIT FOR ALL WIRING REQUIRED BY THE NEC.
 - PROVIDING WEATHER TIGHT ROOF PENETRATIONS.
 - PROVIDING WIRE SUPPORTS AND CONDUIT ANCHORS PER THE NEC.
 - REMOVAL OF ALL UNUSED CONTROL WIRING.
 - WIRING SCOPE TO INCLUDE ALL REQUIRED LOW AND LINE VOLTAGE WIRING & POWER.
 - ALL LINE VOLTAGE WORK TO BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR.
 - PROVIDE ALL REQUIRED LINE VOLTAGE POWER FOR NEW DDC PANELS.

PROJECT SCOPE OF WORK:

ACCEPTABLE MANUFACTURES/CONTRACTORS:

- THIS PROJECT IS AN OPEN BID CONTROLS UPGRADE
- ANY BACNET CONTROL SYSTEM THAT MEETS THE WRITTEN SPECIFICATIONS AND DRAWINGS IS ACCEPTABLE.
- THE FOLLOWING MANUFACTURES ARE EXPLICITLY LISTED AS EQUAL
 - SIEMENS
 - HONEYWELL
 - DELTA
 - CARRIER
 - RELIABLE
 - JOHNSON CONTROLS

CONTROLS UPGRADES & MODIFICATION:

- REPLACE EXISTING BUILDING DDC/BAS SYSTEM WITH NEW BACNET DDC/BAS SYSTEM.
- REPLACE VALVE OR DAMPER ACTUATOR WITH NEW ELECTRIC ACTUATOR - SEE REFERENCE PLANS FOR ORIGINAL EQUIPMENT INFO.
- PROVIDE ALL NEW THERMOSTATS AND COORDINATE ALL LOCATIONS WITH OWNER.

ADD ALTERNATE LINE ITEM COSTS:

- PROVIDE LINE ITEM COST TO REPLACE STEAM CONTROL VALVE BODDIES THAT ARE DAMAGED BEYOND REPAIR BY ODOC. SEE REFERENCE DRAWINGS FOR ORIGINAL EQUIPMENT INFO.

DEMOLITION WORK:

- REMOVE ALL EXISTING CONTROLS WIRING AND ASSOCIATED PANELS.
- CAP & SEAL ALL PNEUMATIC TUBING TO REMOVED ACTUATORS. PNEUMATIC SYSTEM TO REMAIN OPERATIONAL FOR EXISTING STEAM RADIATORS.

Date: 7-13-20	Proj No: 10039	Drawn By: MD	Chkd By: MD	DSGN By: MD	Acad File: 10039-M10
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OREGON DEPT OF CORRECTIONS
 SALEM
 OREGON
 SCOPE OF WORK



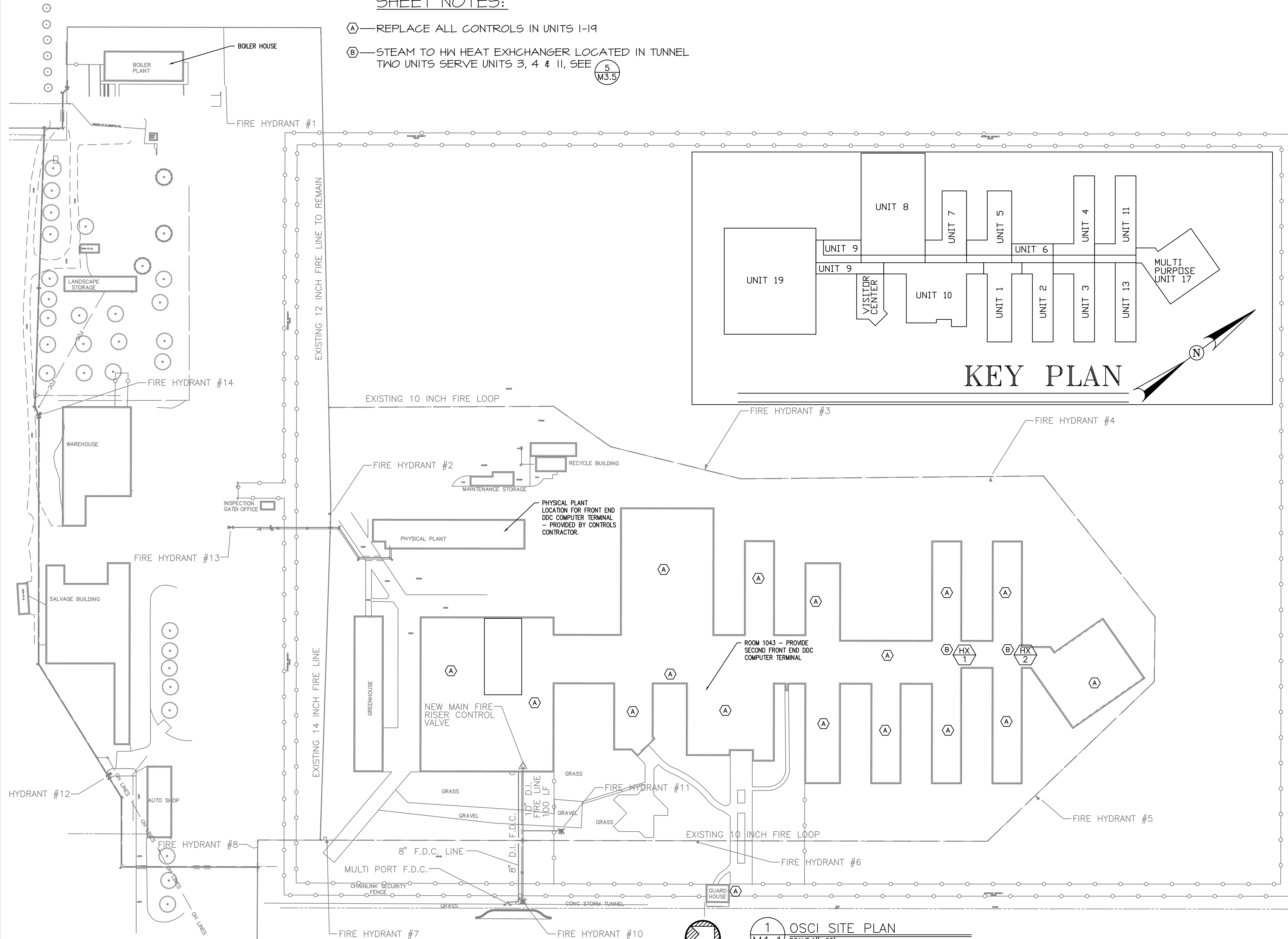
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SHEET

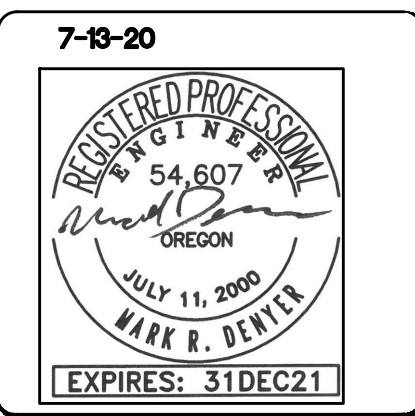
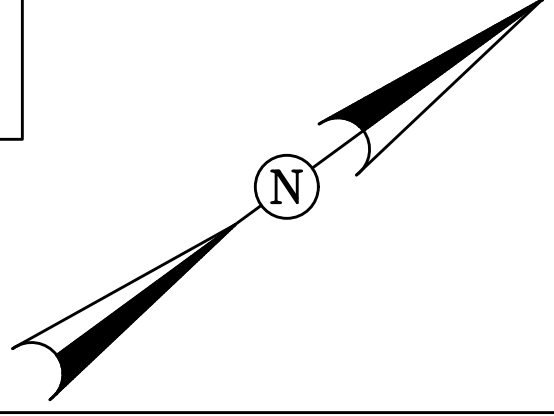
M1.1

SHEET NOTES:

- (A) — REPLACE ALL CONTROLS IN UNITS 1-19
- (B) — STEAM TO HW HEAT EXCHANGER LOCATED IN TUNNEL
TWO UNITS SERVE UNITS 3, 4 & 11, SEE 5
M3.5



KEY PLAN



Date:	7-13-21
Proj No:	10039
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Chkd By:	MD
DSGN By:	MD
Acad File:	0039-M11

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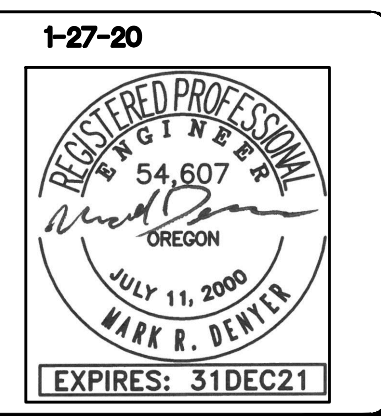
SITE PLAN



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SHEET
M1.2
 2 OF 21

1 OSCI SITE PLAN
 M1.1 SCALE: 1"=60'



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SHEET
M2.1
 4 OF 21

1 UNIT 4, 5 & 6-- 2ND FLOOR PLAN
 M2.1 SCALE: 1/8"=1'-0"

EQUIPMENT NOTES:
 EQUIPMENT NUMBERS REFERENCE ORIGINAL CONTROL DRAWINGS AND 1951 EQUIPMENT

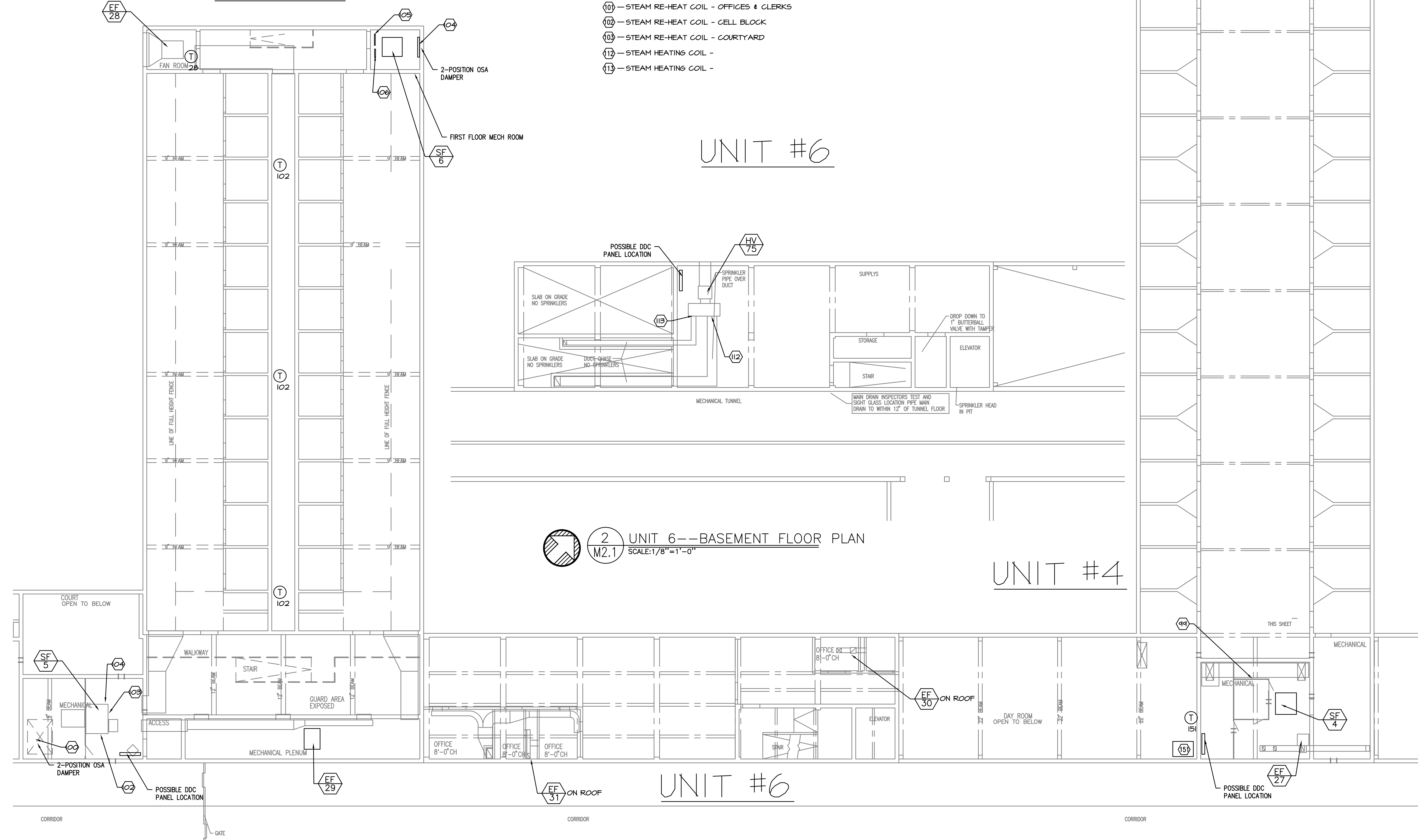
- ⑨⑨-⑨⑨ - STEAM HEATING COIL - HOUSING
- ⑮ - CABINET UNIT HEATER - DAY ROOM
- ⑩④ - STEAM PRE HEAT COIL SF-6
- ⑩⑤ - STEAM RE-HEAT COIL - FIRST FLOOR
- ⑩⑥ - STEAM RE-HEAT COIL - GUARD
- ⑩⑦ - STEAM PRE HEAT COIL SF-5
- ⑩⑧ - STEAM RE-HEAT COIL - OFFICES & CLERKS
- ⑩⑨ - STEAM RE-HEAT COIL - CELL BLOCK
- ⑩⑩ - STEAM RE-HEAT COIL - COURTYARD
- ⑩⑪ - STEAM HEATING COIL -
- ⑩⑫ - STEAM HEATING COIL -
- ⑩⑬ - STEAM HEATING COIL -

UNIT #5

UNIT #6

UNIT #4

UNIT #6



2 UNIT 6--BASEMENT FLOOR PLAN
 M2.1 SCALE: 1/8"=1'-0"



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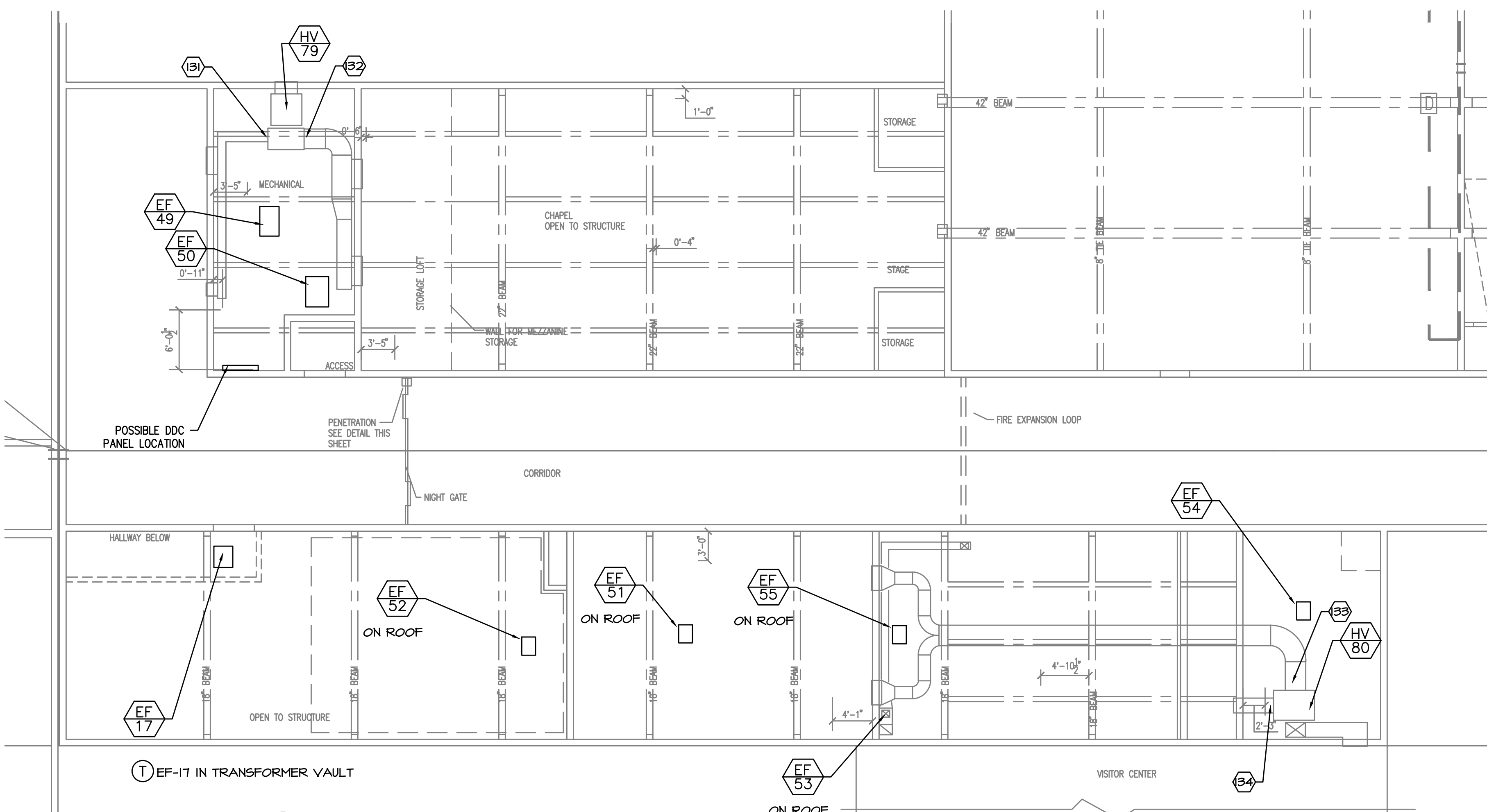
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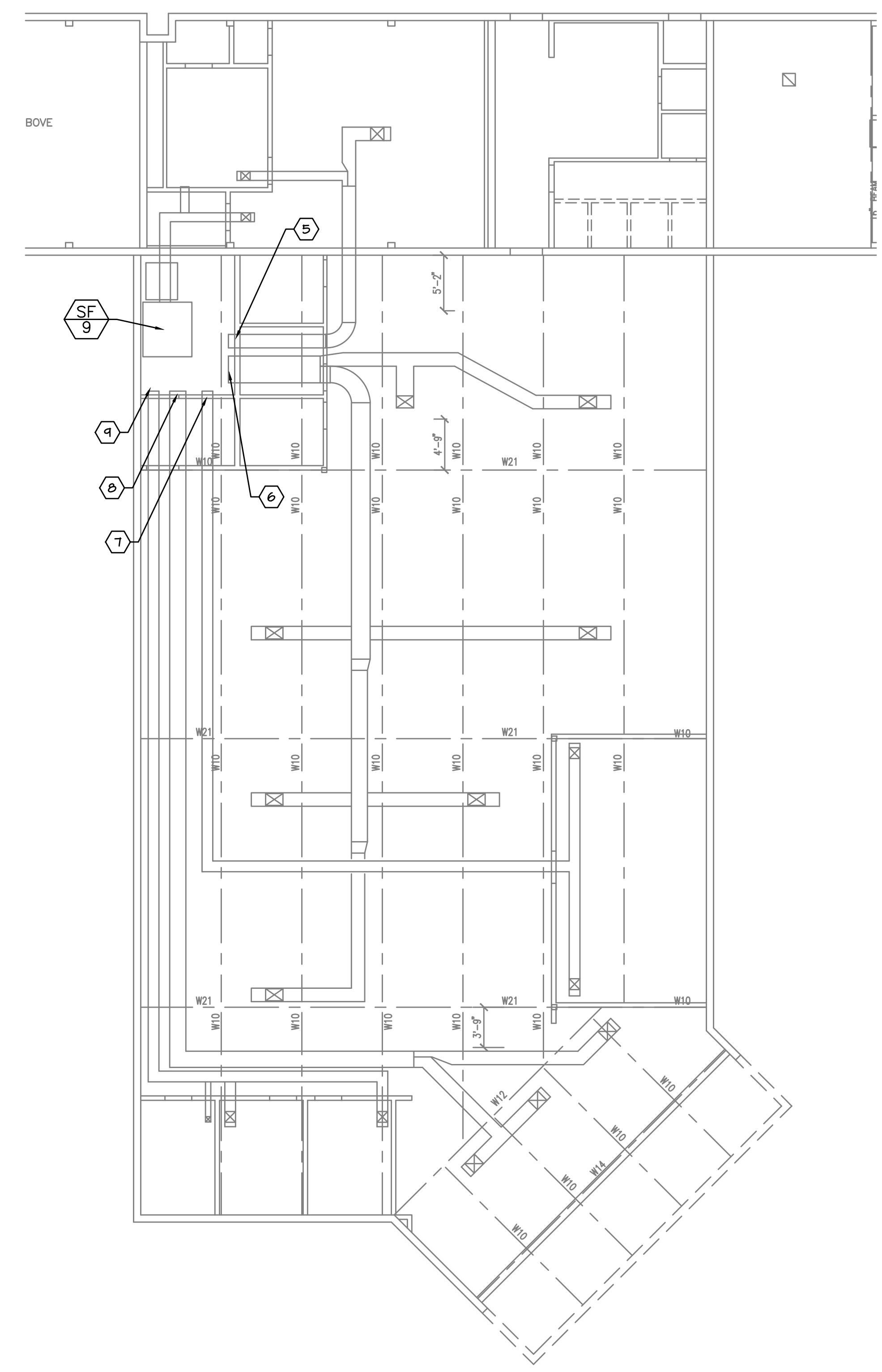
FLOOR PLANS



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2 UNIT 9 - 1ST FLOOR
 M2.3 SCALE: 1/8" = 1'-0"



1 UNIT 9 - 2ND FLOOR
 M2.3 SCALE: 1/8" = 1'-0"

EQUIPMENT NOTES:

EQUIPMENT NUMBERS REFERENCE ORIGINAL CONTROL DRAWINGS AND 1951 EQUIPMENT

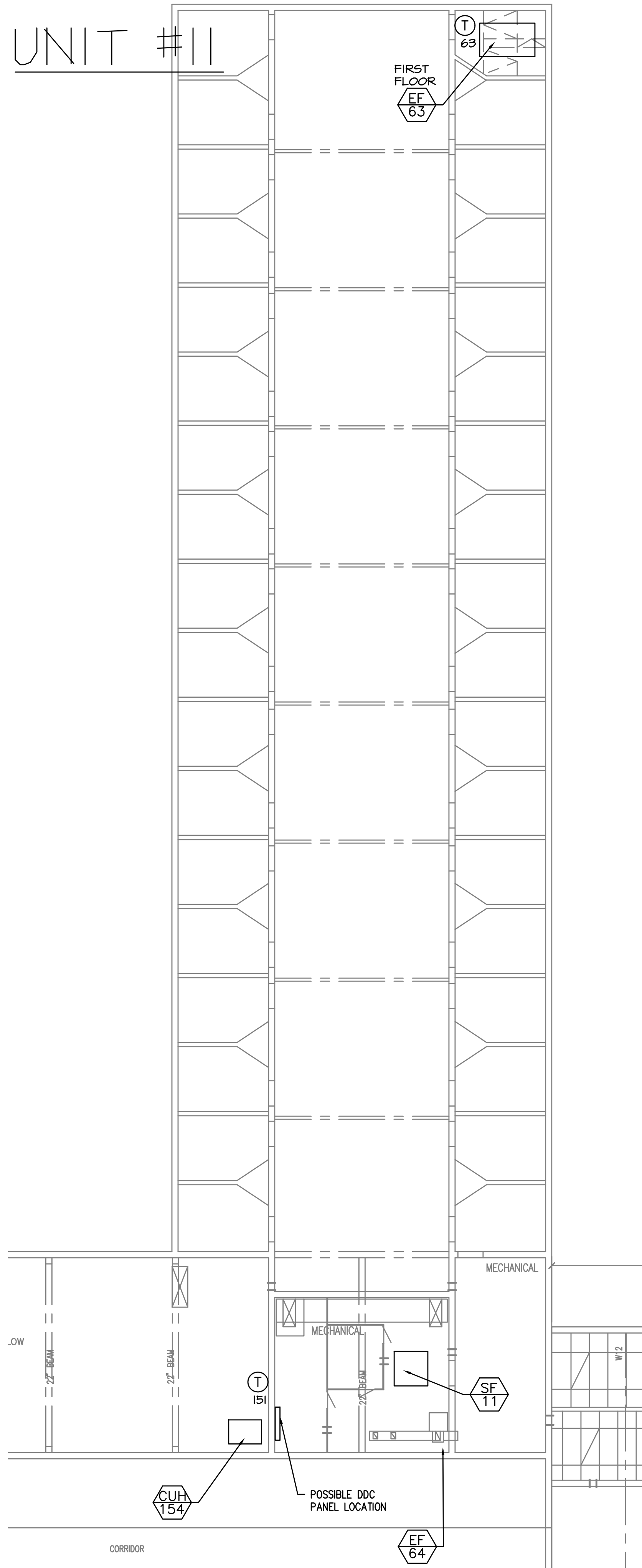
- (13) - STEAM RE HEAT COIL - HV-79
- (132) - STEAM RE HEAT COIL - HV-79
- (133) - STEAM RE HEAT COIL - HV-80
- (134) - STEAM RE HEAT COIL - HV-80

EQUIPMENT NOTES:

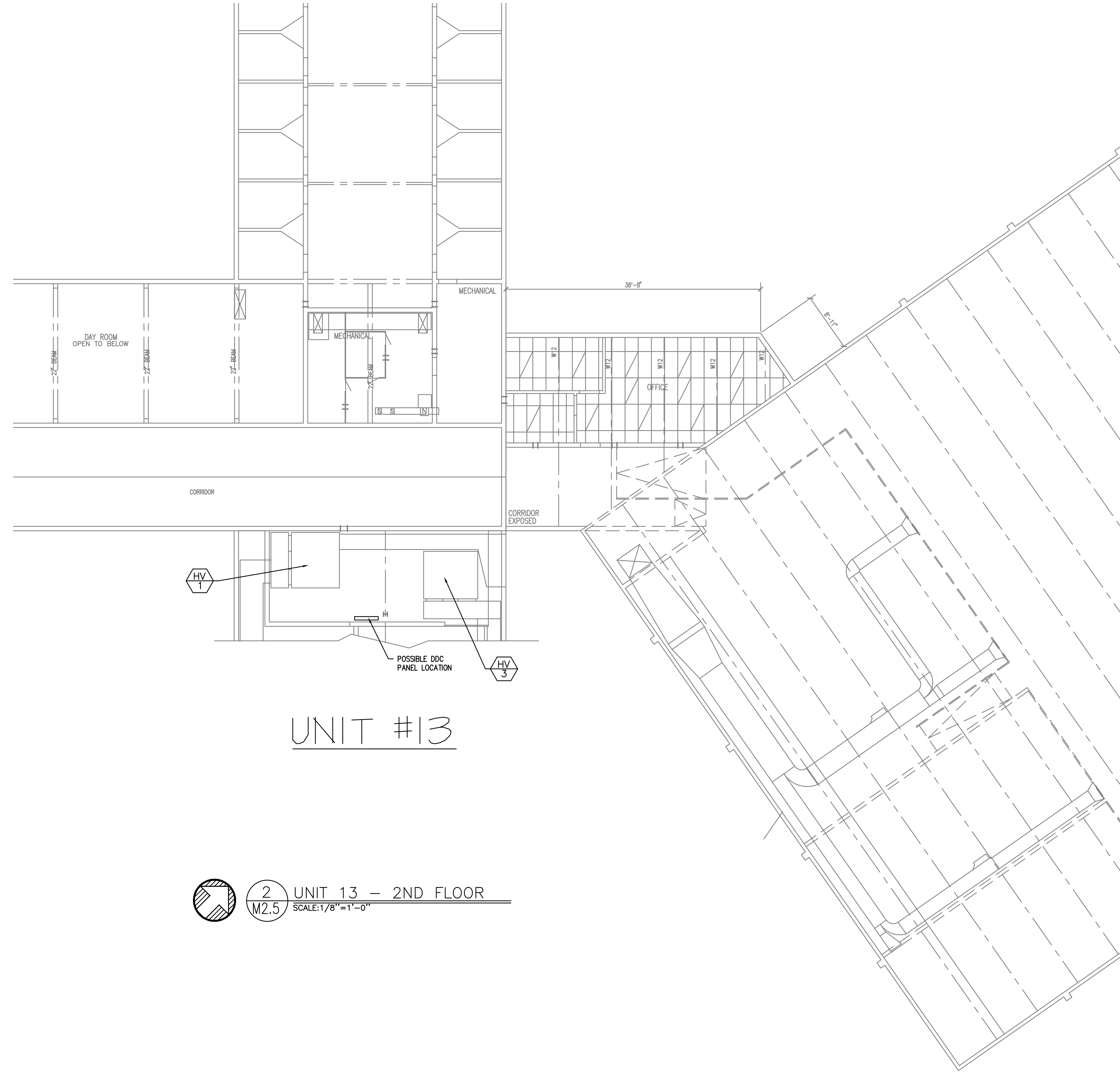
EQUIPMENT NUMBERS REFERENCE ORIGINAL CONTROL DRAWINGS AND 1973 EQUIPMENT

- (1) - STEAM RE HEAT COIL - SF-1
- (2) - STEAM RE HEAT COIL - SF-1
- (3) - STEAM RE HEAT COIL - SF-1
- (4) - STEAM RE HEAT COIL - SF-1
- (5) - STEAM RE HEAT COIL - SF-1

UNIT #11



1 UNIT 11 - 2ND FLOOR
M2.5 SCALE: 1/8" = 1'-0"



2 UNIT 13 - 2ND FLOOR
M2.5 SCALE: 1/8" = 1'-0"

UNIT #17



Date:	7-13-20
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M2.5
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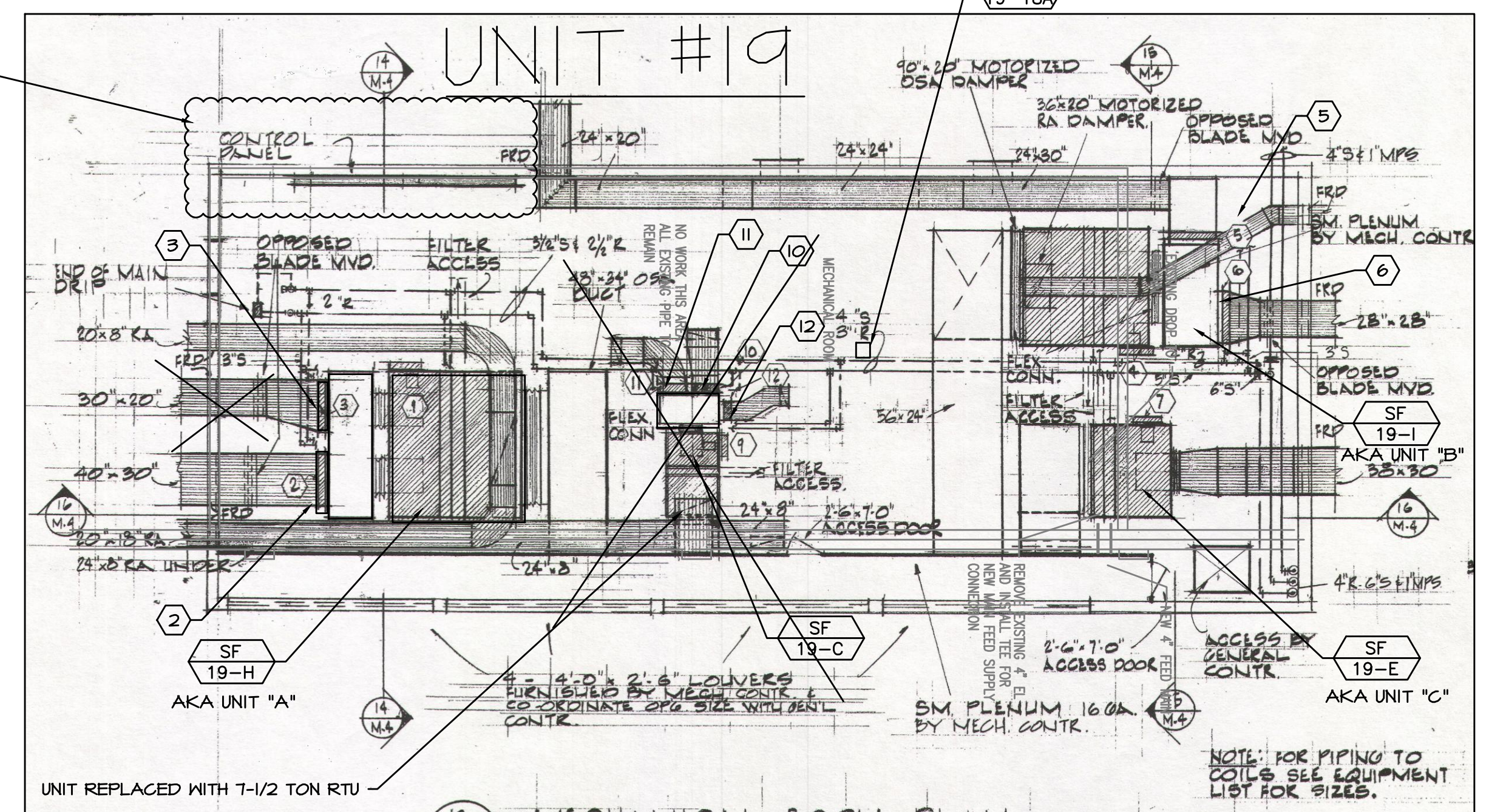
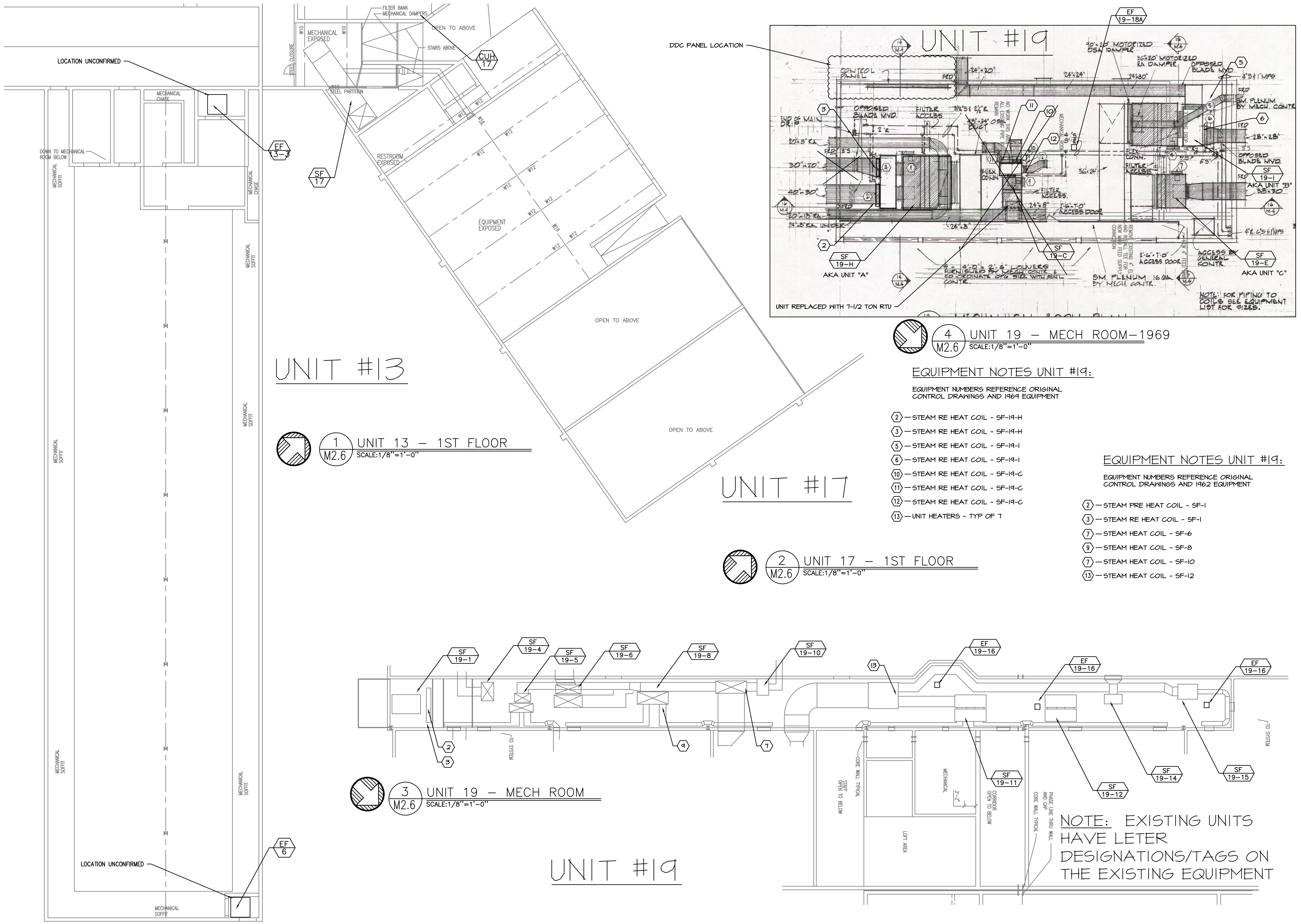
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SHEET

M2.6



UNIT #13

1 UNIT 13 - 1ST FLOOR
M2.6 SCALE: 1/8" = 1'-0"

UNIT #17

2 UNIT 17 - 1ST FLOOR
M2.6 SCALE: 1/8" = 1'-0"

UNIT #19

3 UNIT 19 - MECH ROOM
M2.6 SCALE: 1/8" = 1'-0"

4 UNIT 19 - MECH ROOM-1969
M2.6 SCALE: 1/8" = 1'-0"

EQUIPMENT NOTES UNIT #19:

EQUIPMENT NUMBERS REFERENCE ORIGINAL CONTROL DRAWINGS AND 1969 EQUIPMENT

- 2 - STEAM RE HEAT COIL - SF-19-H
- 3 - STEAM RE HEAT COIL - SF-19-I
- 5 - STEAM RE HEAT COIL - SF-19-1
- 6 - STEAM RE HEAT COIL - SF-19-1
- 10 - STEAM RE HEAT COIL - SF-19-C
- 11 - STEAM RE HEAT COIL - SF-19-C
- 12 - STEAM RE HEAT COIL - SF-19-C
- 13 - UNIT HEATERS - TYP OF 7

EQUIPMENT NOTES UNIT #19:

EQUIPMENT NUMBERS REFERENCE ORIGINAL CONTROL DRAWINGS AND 1962 EQUIPMENT

- 2 - STEAM PRE HEAT COIL - SF-1
- 3 - STEAM RE HEAT COIL - SF-1
- 7 - STEAM HEAT COIL - SF-6
- 9 - STEAM HEAT COIL - SF-8
- 7 - STEAM HEAT COIL - SF-10
- 13 - STEAM HEAT COIL - SF-12

NOTE: EXISTING UNITS HAVE LETTER DESIGNATIONS/TAGS ON THE EXISTING EQUIPMENT



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M2.7
 9 OF 19

1 UNIT 19 - 1ST FLOOR
M2.7
 SCALE: 1/8" = 1'-0"

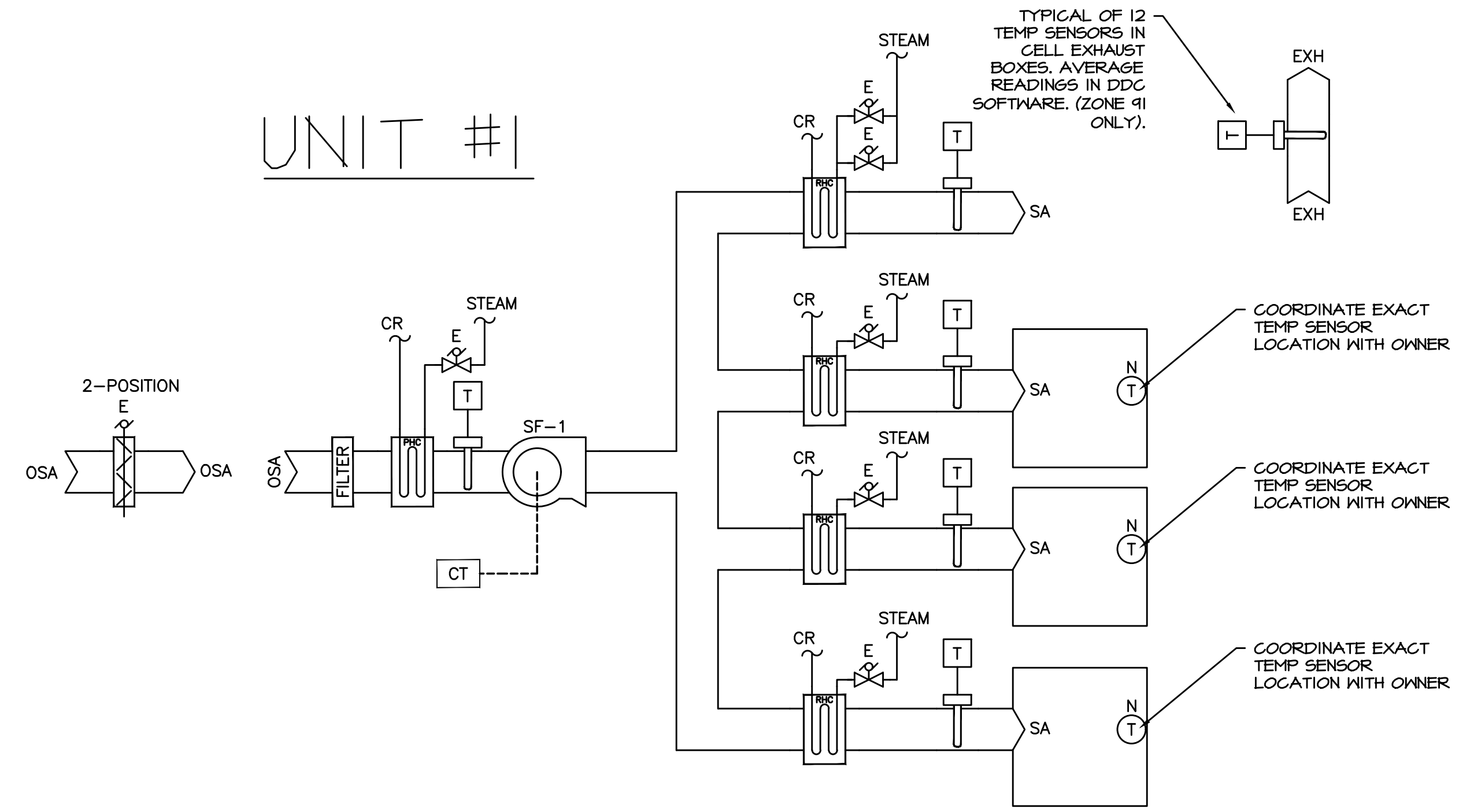


1969 ADDITION
 ↑
 ↓
 1961 ADDITION

COORDINATE ALL STAT LOCATIONS WITH OWNER

EXISTING 1\"/>

UNIT #1

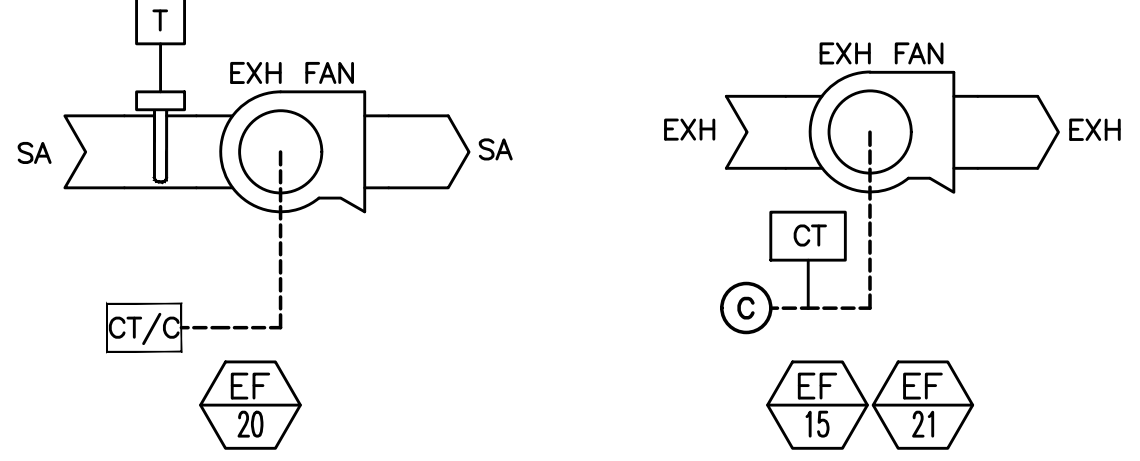


1 SUPPLY FAN - UNIT 1
M3.0 SCALE: DETAIL

CONTROLS FOR FCU, SEE 1/M3.0

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
OSA DAMPER POSITION *			X		
90 STEAM HEATING VALVE (PRE HEAT COIL) * +				X	
PREHEAT DISCHARGE AIR TEMP		X			
FAN START/STOP			X		
FAN STATUS - CT	X				X
91A STEAM HEATING VALVE (REHEAT COIL) * +				X	
91B STEAM HEATING VALVE (REHEAT COIL) * +				X	
92 STEAM HEATING VALVE (REHEAT COIL) * +				X	
93 STEAM HEATING VALVE (REHEAT COIL) * +				X	
94 STEAM HEATING VALVE (REHEAT COIL) * +				X	
91 DISCHARGE AIR TEMP		X			
92 DISCHARGE AIR TEMP		X			
93 DISCHARGE AIR TEMP		X			
94 DISCHARGE AIR TEMP		X			
91 EXH TEMP (TYPICAL OF 12 - AVERAGE TEMPS)		X			
92 SPACE TEMP		X			
93 SPACE TEMP		X			
94 SPACE TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS.
+ STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.

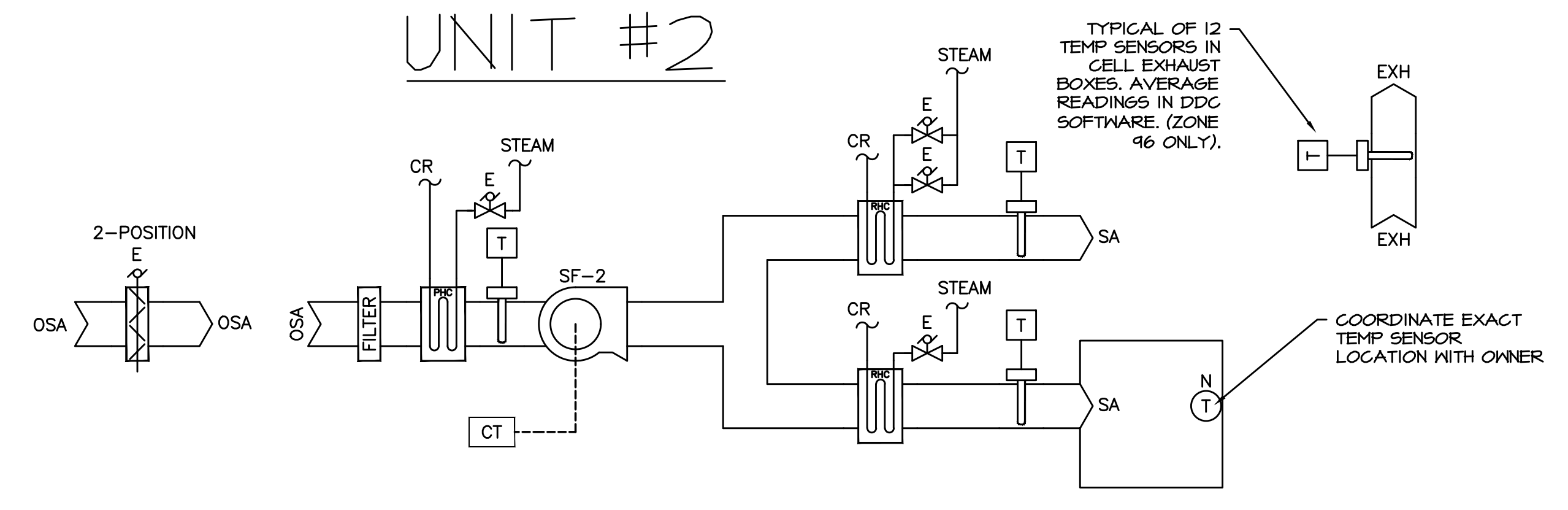


2 EXHAUST FANS
M3.0 SCALE: DETAIL

CONTROLS FOR EXHAUST FANS, SEE 2/M3.0

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		
EXH AIR TEMP (EF-20)		X			

UNIT #2

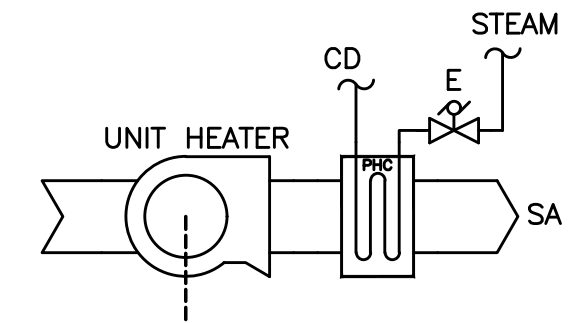


4 SUPPLY FAN - UNIT 2
M3.0 SCALE: DETAIL

CONTROLS FOR FCU, SEE 4/M3.0

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
OSA DAMPER POSITION *			X		
95 STEAM HEATING VALVE (PRE HEAT COIL) * +				X	
PREHEAT DISCHARGE AIR TEMP		X			
FAN START/STOP			X		
FAN STATUS - CT	X				X
96A STEAM HEATING VALVE (REHEAT COIL) * +				X	
96B STEAM HEATING VALVE (REHEAT COIL) * +				X	
97 STEAM HEATING VALVE (REHEAT COIL) * +				X	
95 DISCHARGE AIR TEMP		X			
96 DISCHARGE AIR TEMP		X			
97 DISCHARGE AIR TEMP		X			
96 EXH TEMP (TYPICAL OF 12 - AVERAGE TEMPS)		X			
97 SPACE TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS.
+ STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.

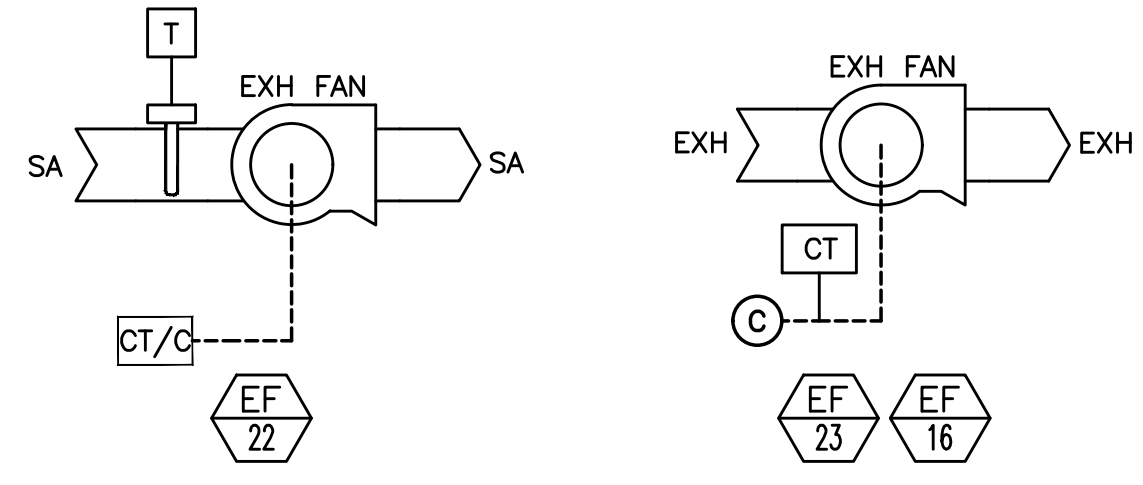


5 STEAM UNIT HEATERS
M3.0 SCALE: DETAIL

CONTROLS FOR UNIT HEATERS, SEE 5/M3.0

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		
SPACE TEMP		X			
STEAM HEATING VALVE (PRE HEAT COIL) * +				X	

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS.
+ STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.



6 EXHAUST FANS
M3.0 SCALE: DETAIL

CONTROLS FOR EXHAUST FANS, SEE 6/M3.0

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		
EXH AIR TEMP (EF-22)		X			

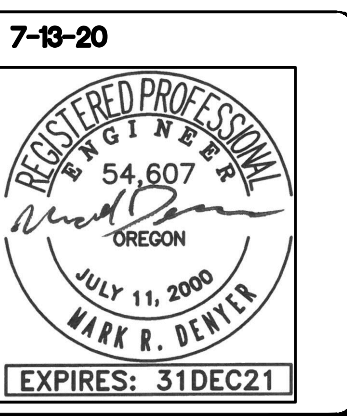
LOCATE DDC PANEL IN UNIT #1 MECH ROOM. LOCATE IN SPOT NOT SUBJECT TO RADIANT HEAT FROM STEAM COILS. PANEL TO HAVE MIN OF 40% SPARE POINT CAPACITY. FACILITY ETHERNET BACKBONE LOCATED IN MECHANICAL TUNNEL BELOW MAIN FLOOR.

3 STEAM UNIT HEATERS
M3.0 SCALE: DETAIL

CONTROLS FOR UNIT HEATERS, SEE 3/M3.0

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		
SPACE TEMP		X			
STEAM HEATING VALVE (PRE HEAT COIL) * +				X	

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS.
+ STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.



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CONTROL DIAGRAMS

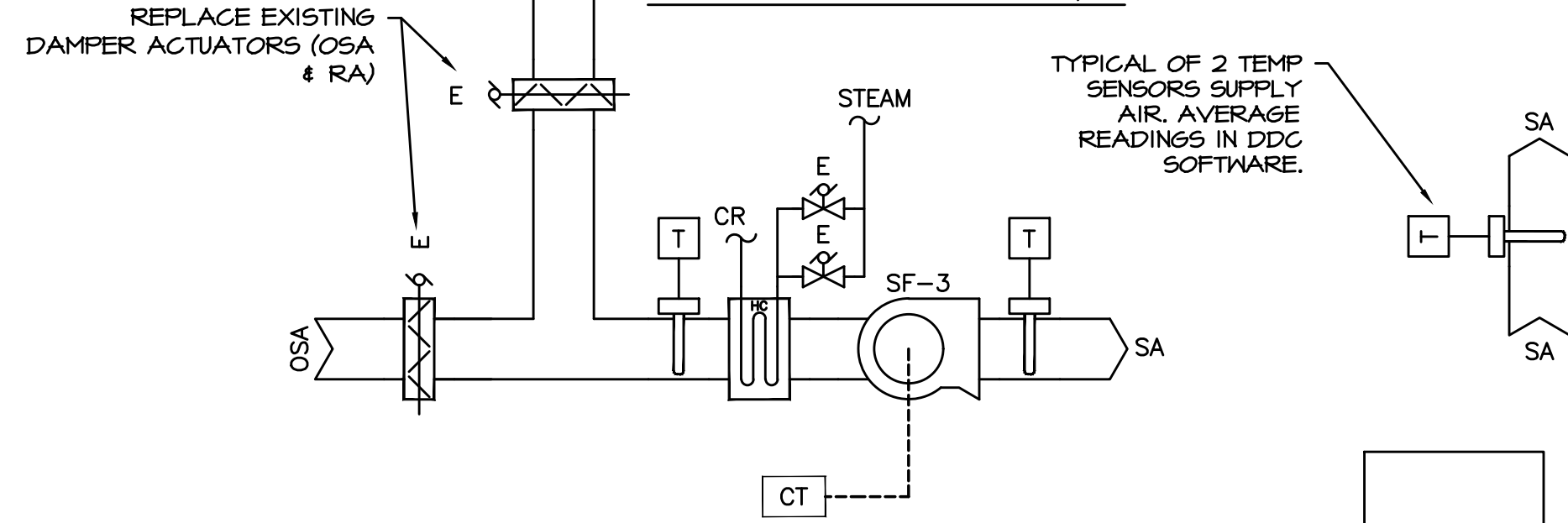


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SHEET

M3.0

UNIT #3 (TYPICAL OF UNIT #4)

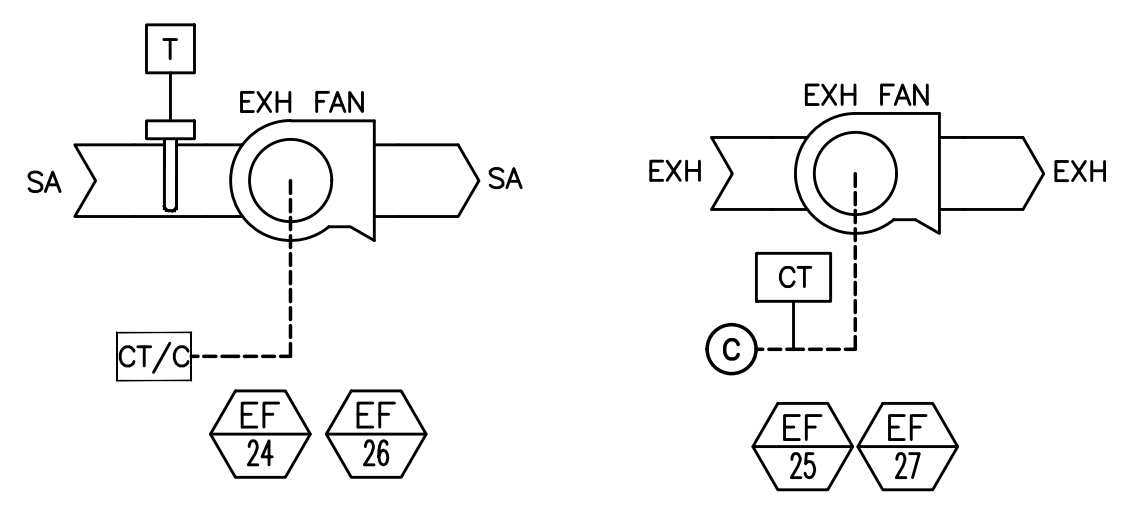


1 SUPPLY FAN - UNIT 3
M3.1 SCALE: DETAIL

CONTROLS FOR FCU, SEE 4/M3.0

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
SMOKE DETECTOR	X				X
RETURN AIR TEMP		X			
RA DAMPER POSITION - **				X	
OSA DAMPER POSITION - **				X	
MIXED AIR TEMP		X			
98A STEAM HEATING VALVE (HEATING COIL) * +				X	
98B STEAM HEATING VALVE (HEATING COIL) * +				X	
FAN START/STOP			X		
FAN STATUS - CT	X				X
98 DISCHARGE AIR TEMP		X			
98 SPACE SUPPLY TEMP (TYP OF 2)		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 ** - PROVIDE NEW DAMPER ACTUATOR TO CONTROL RETURN AND OSA DAMPERS, CONTRACTOR RESPONSIBLE TO COORDINATE EXACT STYLE REQUIRED TO FUNCTION WITH EACH UNIT. PROVIDE ALL MOUNTING BRACKETS AND HARDWARE AS REQUIRED FOR ACTUATOR OPERATION.
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.



2 EXHAUST FANS
M3.1 SCALE: DETAIL

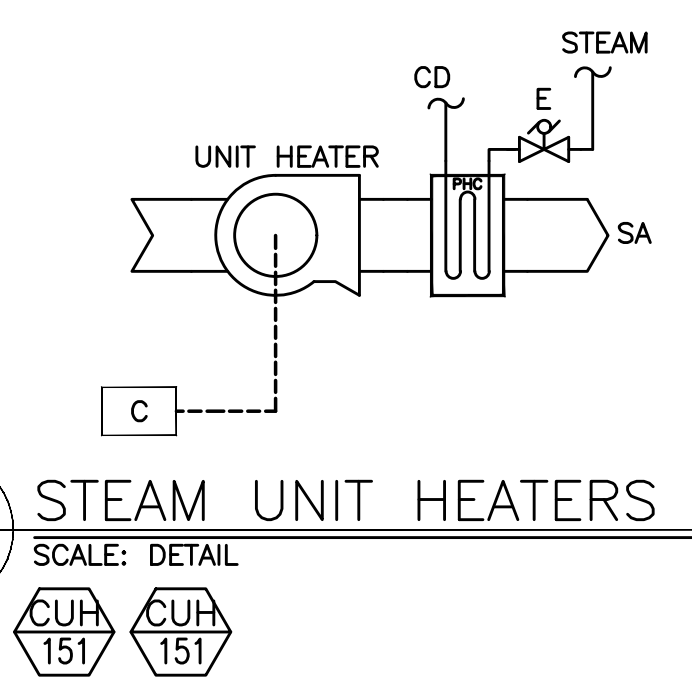
CONTROLS FOR EXHAUST FANS, SEE 2/M3.1

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		
EXH AIR TEMP (EF-24)		X			

CONTROLS FOR UNIT HEATERS, SEE 3/M3.1

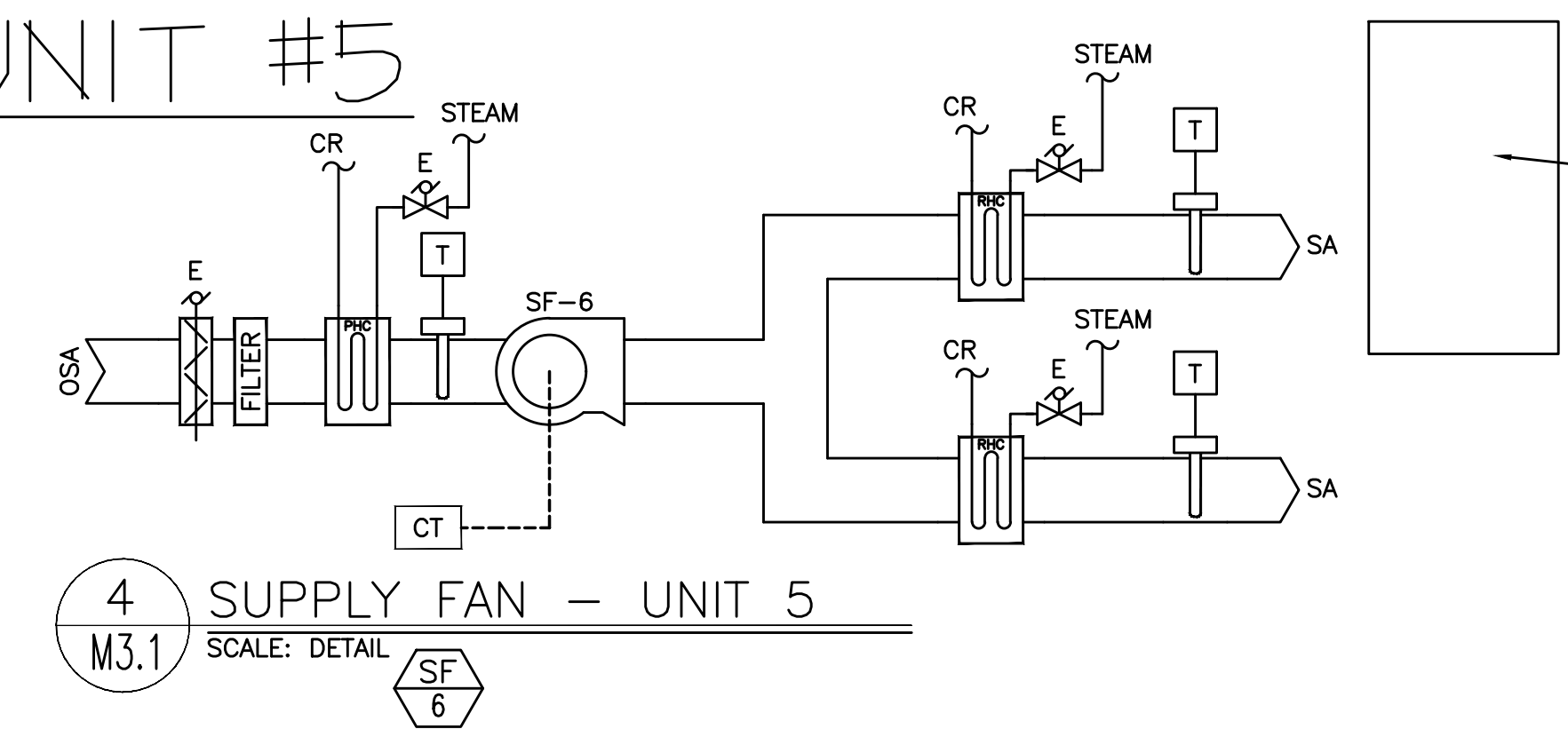
POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		
SPACE TEMP		X			
STEAM HEATING VALVE (PRE HEAT COIL) * +				X	

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.



3 STEAM UNIT HEATERS
M3.1 SCALE: DETAIL

UNIT #5



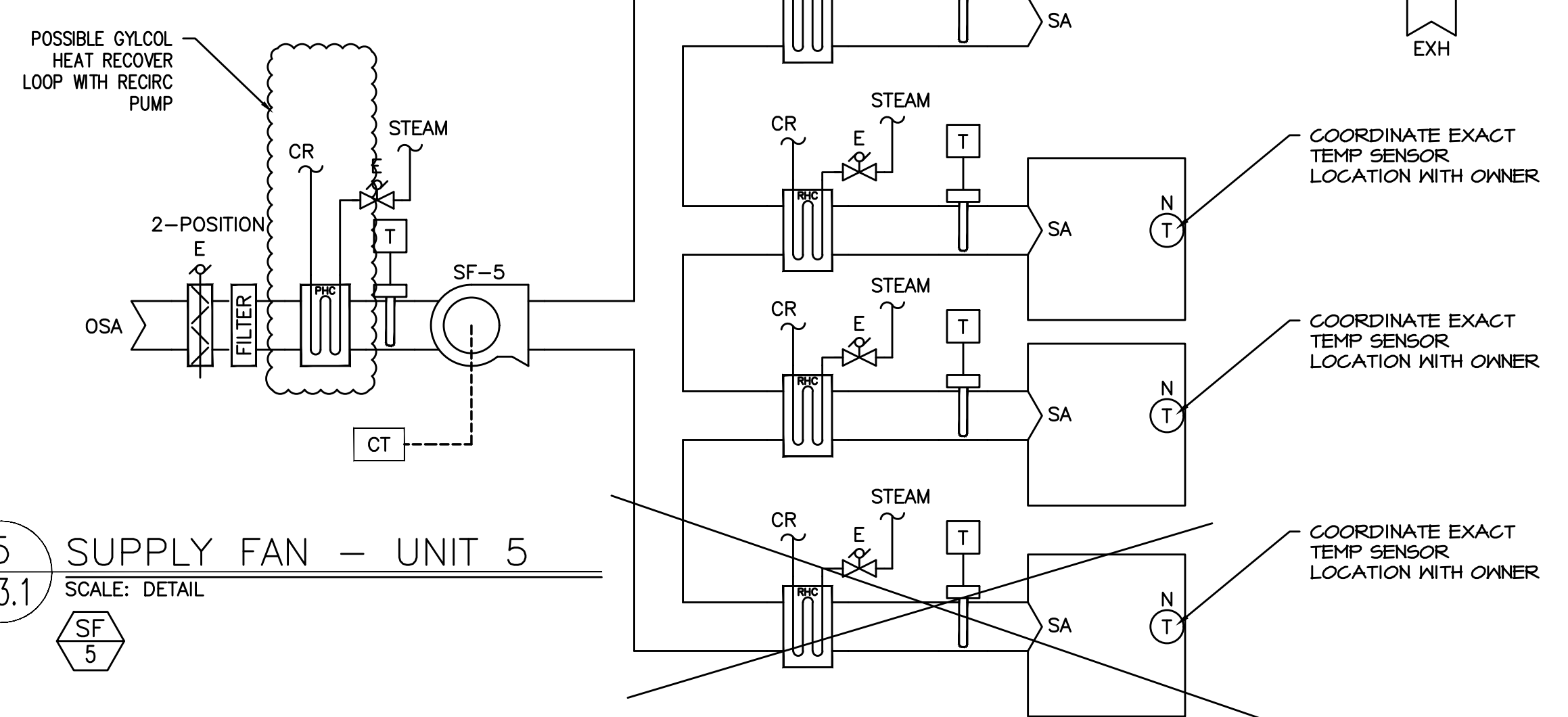
4 SUPPLY FAN - UNIT 5
M3.1 SCALE: DETAIL

CONTROLS FOR FCU, SEE 4/M3.1

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
OSA DAMPER POSITION *			X		
104 STEAM HEATING VALVE (PRE HEAT COIL) * +				X	
PREHEAT DISCHARGE AIR TEMP		X			
FAN START/STOP			X		
FAN STATUS - CT	X				X
105 STEAM HEATING VALVE (REHEAT COIL) * +				X	
106 STEAM HEATING VALVE (REHEAT COIL) * +				X	
105 DISCHARGE AIR TEMP		X			
106 DISCHARGE AIR TEMP		X			
105 SPACE TEMP		X			
106 SPACE TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.

UNIT #5

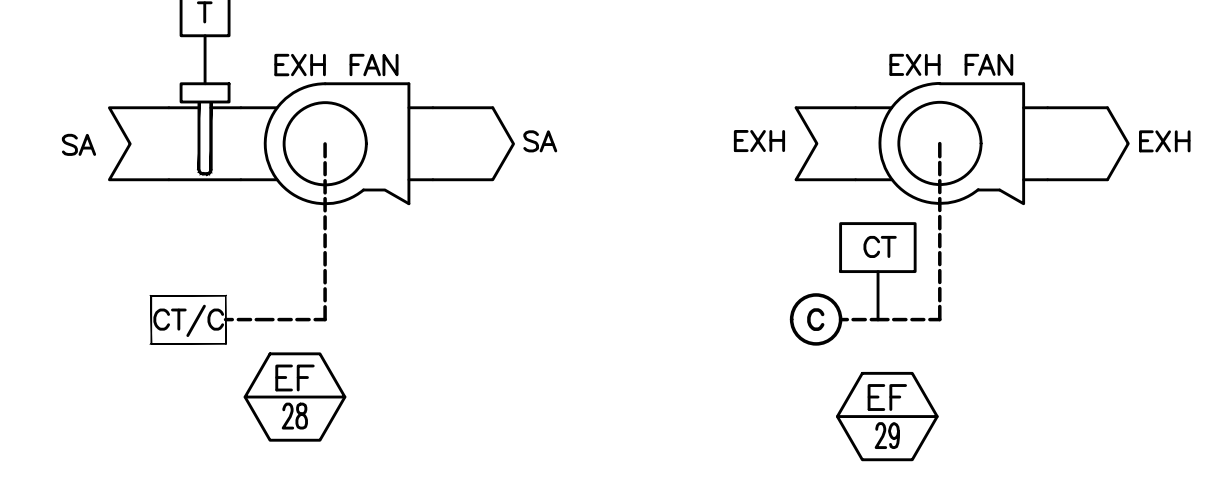


5 SUPPLY FAN - UNIT 5
M3.1 SCALE: DETAIL

CONTROLS FOR FCU, SEE 5/M3.1

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
OSA DAMPER POSITION *			X		
100 STEAM HEATING VALVE (PRE HEAT COIL) * +				X	
PREHEAT DISCHARGE AIR TEMP		X			
FAN START/STOP			X		
FAN STATUS - CT	X				X
101 STEAM HEATING VALVE (REHEAT COIL) * +				X	
102 STEAM HEATING VALVE (REHEAT COIL) * +				X	
103 STEAM HEATING VALVE (REHEAT COIL) * +				X	
101 DISCHARGE AIR TEMP		X			
102 DISCHARGE AIR TEMP		X			
103 DISCHARGE AIR TEMP		X			
102 SPACE TEMP		X			
103 SPACE TEMP		X			
104 SPACE TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.



6 EXHAUST FANS
M3.1 SCALE: DETAIL

CONTROLS FOR EXHAUST FANS, SEE 6/M3.1

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		
EXH AIR TEMP (EF-24)		X			



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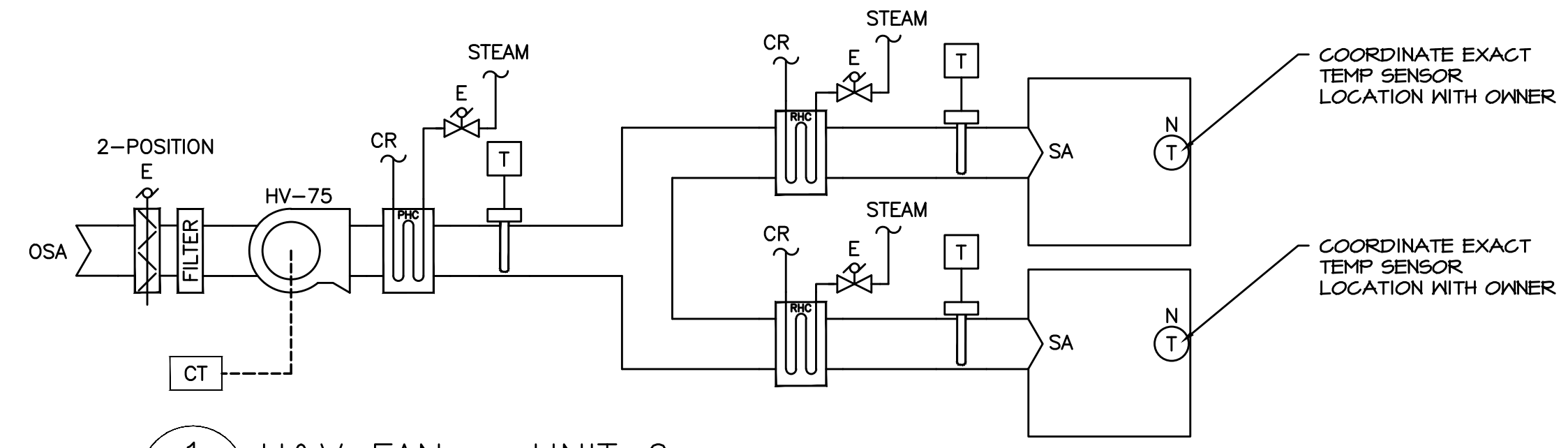
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UNIT #6



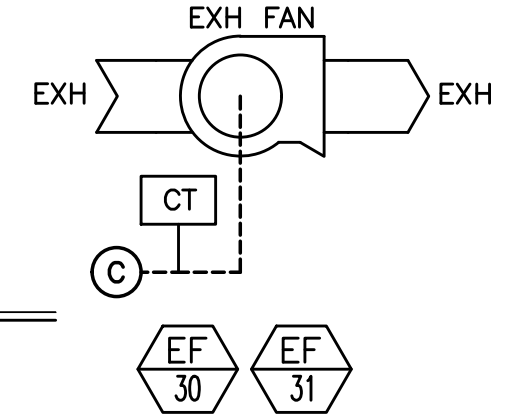
1 H&V FAN - UNIT 6
M3.2 SCALE: DETAIL



CONTROLS FOR FCU, SEE 1/M3.2

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
OSA DAMPER POSITION *			X		
FAN START/STOP			X		
FAN STATUS - CT	X				X
DISCHARGE-PREHEAT AIR TEMP		X			
75 STEAM HEATING VALVE (PREHEAT COIL) * +				X	
112 STEAM HEATING VALVE (REHEAT COIL) * +				X	
113 STEAM HEATING VALVE (REHEAT COIL) * +				X	
112 DISCHARGE AIR TEMP		X			
113 DISCHARGE AIR TEMP		X			
112 SPACE TEMP		X			
113 SPACE TEMP		X			

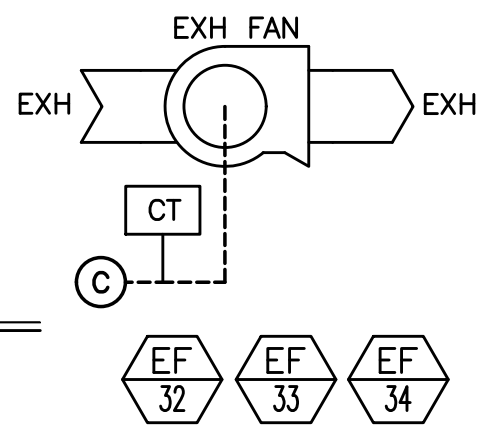
* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.



2 EXHAUST FANS
M3.2 SCALE: DETAIL

CONTROLS FOR EXHAUST FANS, SEE 2/M3.2

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		

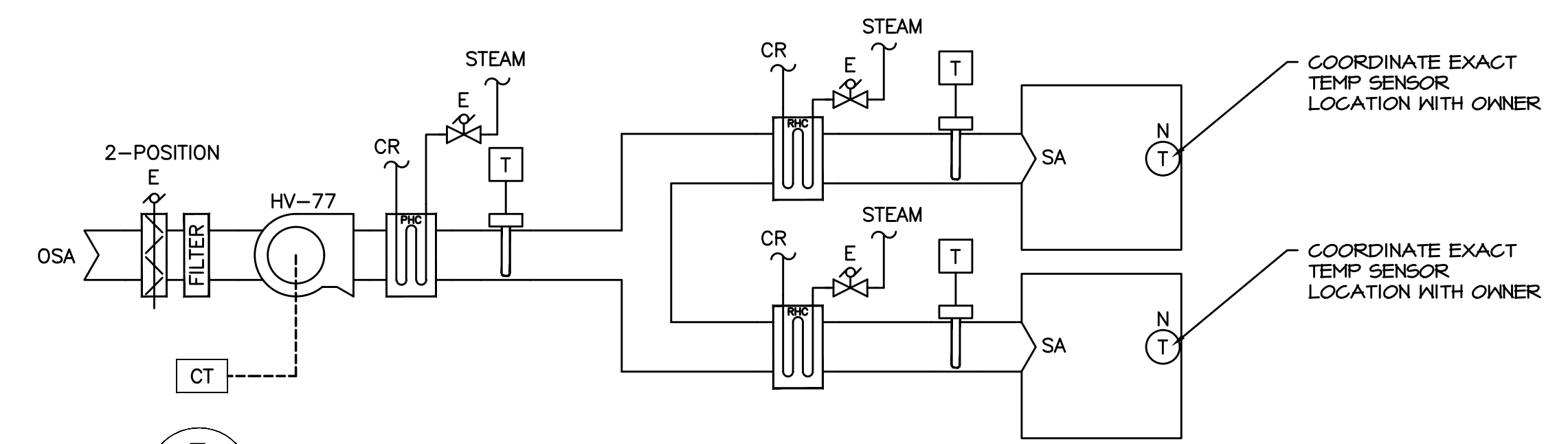


5 EXHAUST FANS
M3.2 SCALE: DETAIL

CONTROLS FOR EXHAUST FANS, SEE 5/M3.2

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		

UNIT #7



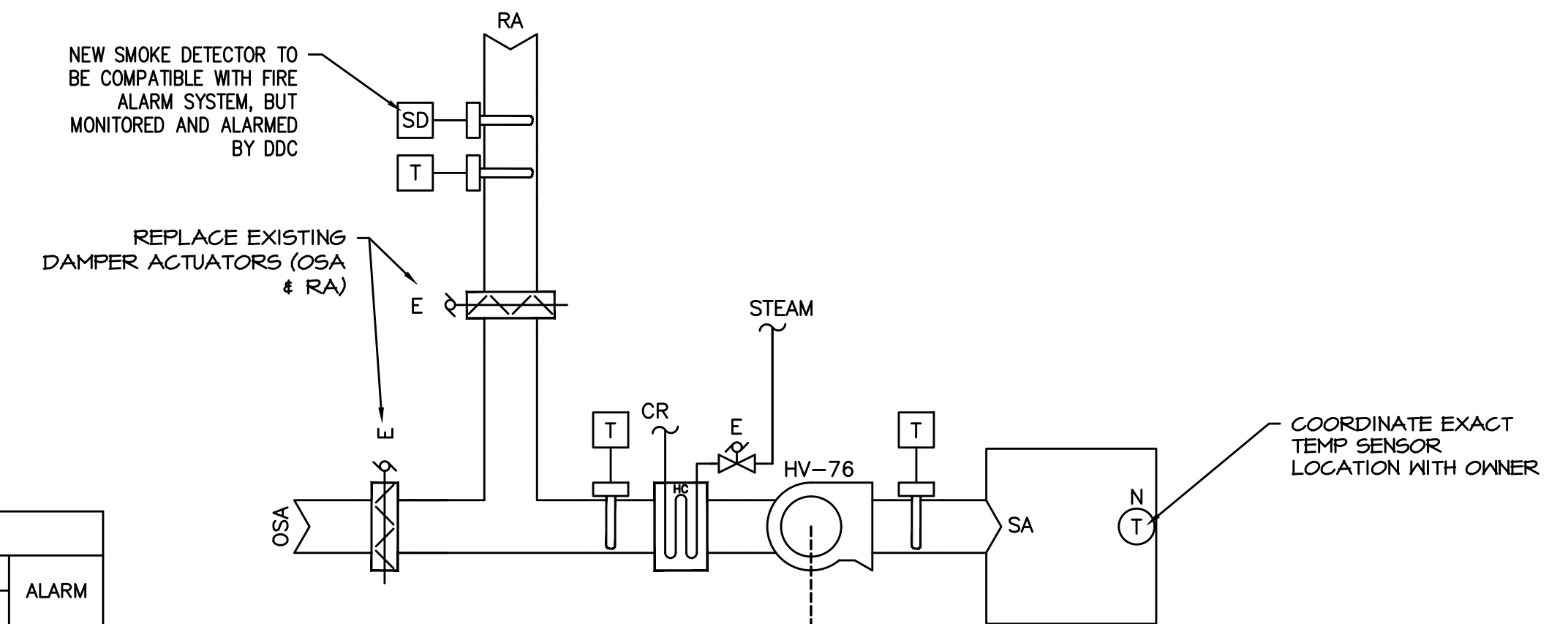
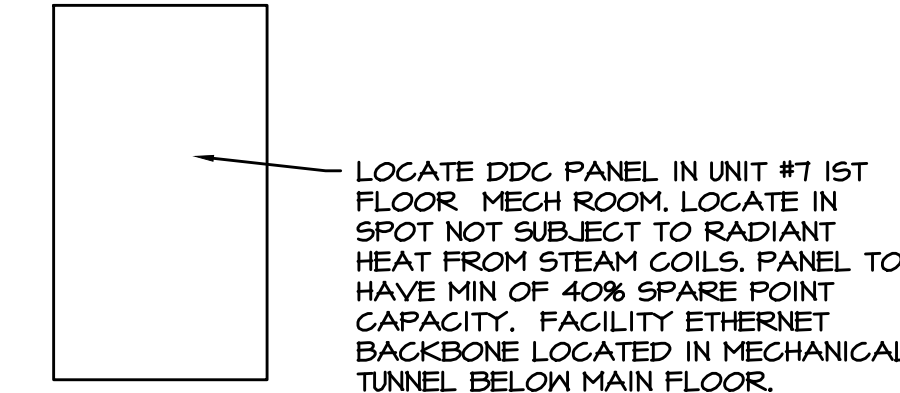
3 H&V FAN - UNIT 8
M3.2 SCALE: DETAIL



CONTROLS FOR FCU, SEE 3/M3.2

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
OSA DAMPER POSITION *			X		
FAN START/STOP			X		
FAN STATUS - CT	X				X
DISCHARGE-PREHEAT AIR TEMP		X			
77 STEAM HEATING VALVE (PREHEAT COIL) * +				X	
114 STEAM HEATING VALVE (REHEAT COIL) * +				X	
115 STEAM HEATING VALVE (REHEAT COIL) * +				X	
114 DISCHARGE AIR TEMP		X			
115 DISCHARGE AIR TEMP		X			
114 SPACE TEMP		X			
115 SPACE TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.



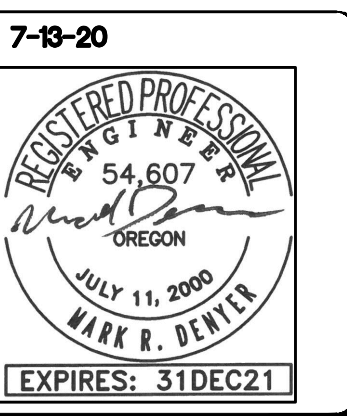
4 H&V FAN - UNIT 7
M3.2 SCALE: DETAIL



CONTROLS FOR FCU, SEE 4/M3.2

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
SMOKE DETECTOR	X				X
RETURN AIR TEMP		X			
RA DAMPER POSITION - **				X	
OSA DAMPER POSITION - **				X	
MIXED AIR TEMP		X			
76 STEAM HEATING VALVE (HEATING COIL) * +				X	
FAN START/STOP			X		
FAN STATUS - CT	X				X
76 DISCHARGE AIR TEMP		X			
SPACE TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 ** - PROVIDE NEW DAMPER ACTUATOR TO CONTROL RETURN AND OSA DAMPERS, CONTRACTOR RESPONSIBLE TO COORDINATE EXACT STYLE REQUIRED TO FUNCTION WITH EACH UNIT. PROVIDE ALL MOUNTING BRACKETS AND HARDWARE AS REQUIRED FOR ACTUATOR OPERATION.
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.



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 Chkd By: MD
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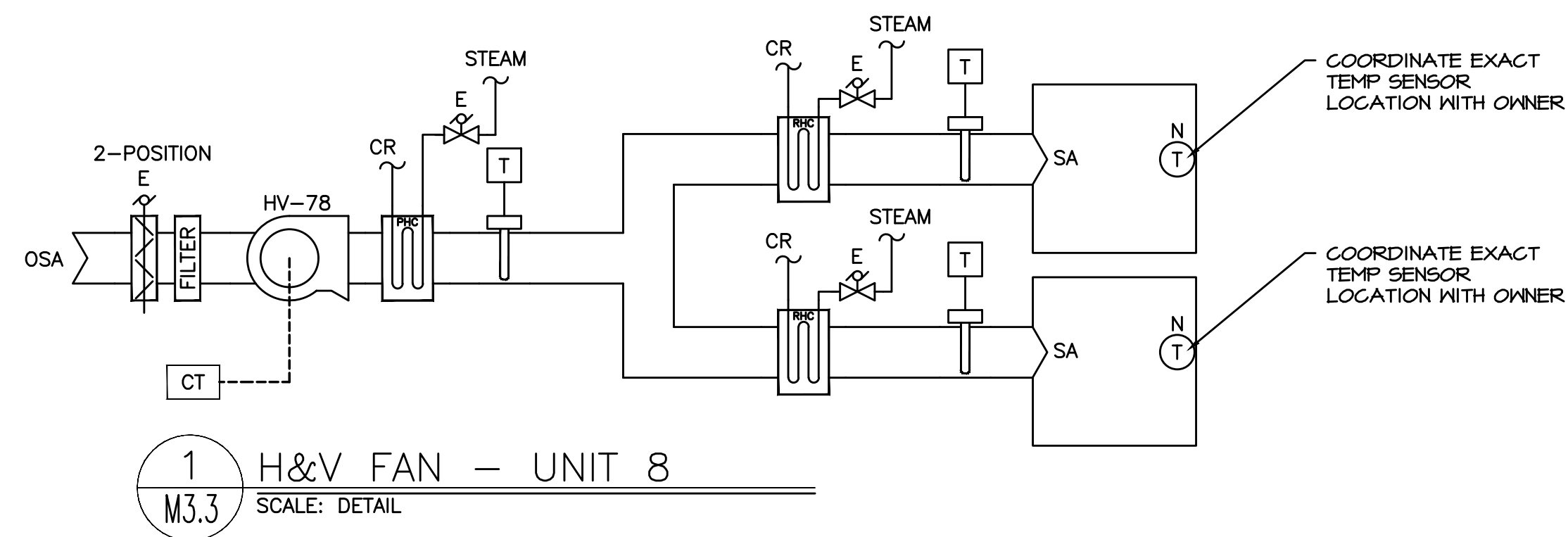


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M3.2

UNIT #8



1 H&V FAN - UNIT 8
M3.3 SCALE: DETAIL



CONTROLS FOR FCU, SEE 1/M3.3

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
OSA DAMPER POSITION *			X		
FAN START/STOP			X		
FAN STATUS - CT	X				X
DISCHARGE-PREHEAT AIR TEMP		X			
78 STEAM HEATING VALVE (PREHEAT COIL) * +				X	
129 STEAM HEATING VALVE (REHEAT COIL) * +				X	
130 STEAM HEATING VALVE (REHEAT COIL) * +				X	
129 DISCHARGE AIR TEMP		X			
130 DISCHARGE AIR TEMP		X			
129 SPACE TEMP		X			
130 SPACE TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
+ STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.

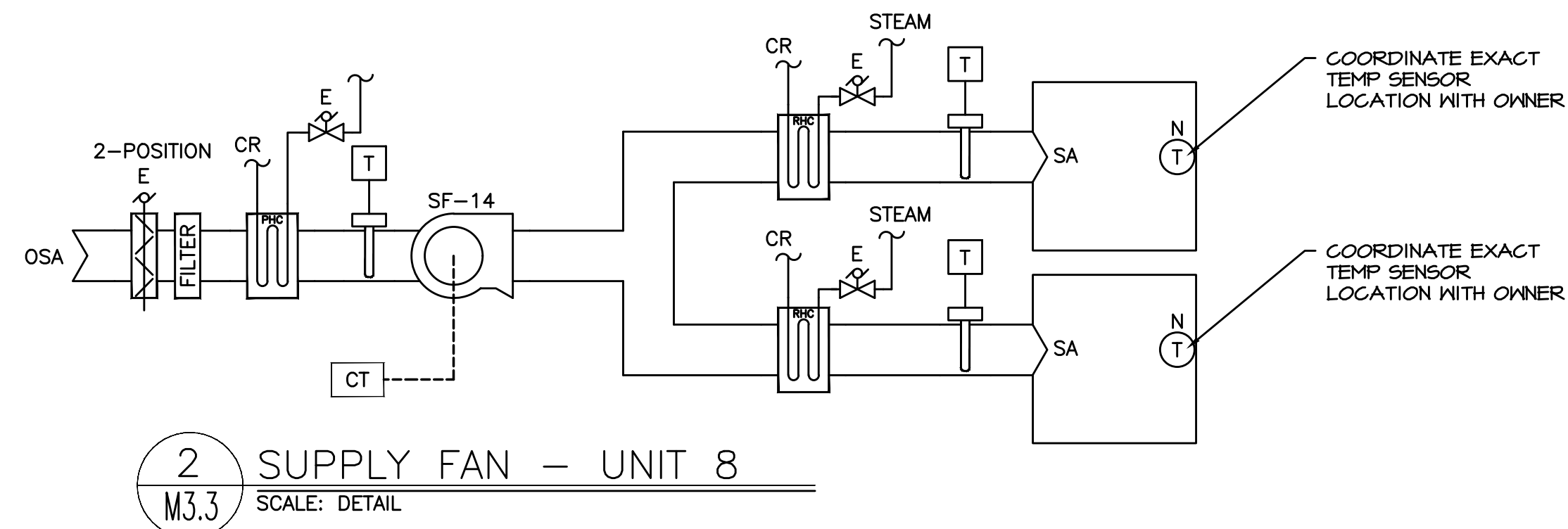
3 SUPPLY FAN - UNIT 8
M3.3 SCALE: DETAIL



CONTROLS FOR FCU, SEE 3/M3.3

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
OSA DAMPER POSITION *			X		
120 STEAM HEATING VALVE (PRE HEAT COIL) * +				X	
PREHEAT DISCHARGE AIR TEMP		X			
FAN START/STOP			X		
FAN STATUS - CT	X				X
121 STEAM HEATING VALVE (REHEAT COIL) * +				X	
124 STEAM HEATING VALVE (REHEAT COIL) * +				X	
125 STEAM HEATING VALVE (REHEAT COIL) * +				X	
121 DISCHARGE AIR TEMP		X			
124 DISCHARGE AIR TEMP		X			
125 DISCHARGE AIR TEMP		X			
121 SPACE TEMP		X			
124 SPACE TEMP		X			
125 SPACE TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
+ STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.



2 SUPPLY FAN - UNIT 8
M3.3 SCALE: DETAIL

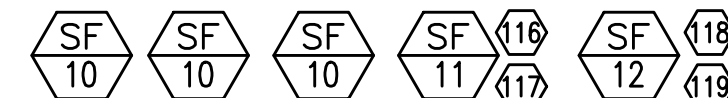


CONTROLS FOR FCU, SEE 2/M3.3

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
OSA DAMPER POSITION *			X		
FAN START/STOP			X		
FAN STATUS - CT	X				X
DISCHARGE-PREHEAT AIR TEMP		X			
126 STEAM HEATING VALVE (PREHEAT COIL) * +				X	
127 STEAM HEATING VALVE (REHEAT COIL) * +				X	
128 STEAM HEATING VALVE (REHEAT COIL) * +				X	
127 DISCHARGE AIR TEMP		X			
128 DISCHARGE AIR TEMP		X			
127 SPACE TEMP		X			
128 SPACE TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
+ STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.

4 SUPPLY FAN - UNIT 8
M3.3 SCALE: DETAIL

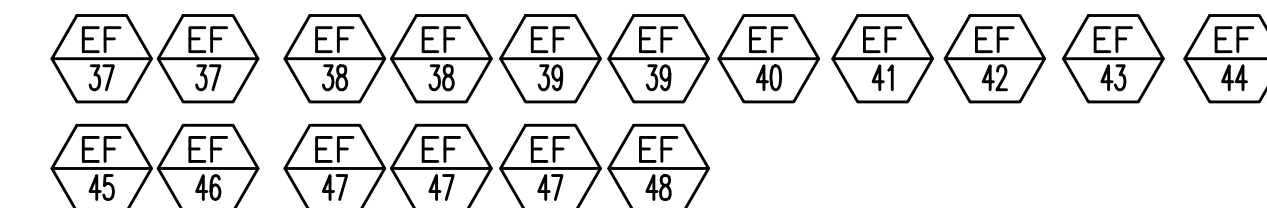


CONTROLS FOR FCU, SEE 4/M3.3

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
OSA DAMPER POSITION *			X		
122 STEAM HEATING VALVE (PREHEAT COIL) * +				X	
DISCHARGE-PREHEAT AIR TEMP		X			
FAN START/STOP			X		
FAN STATUS - CT	X				X
123A STEAM HEATING VALVE (REHEAT COIL) * +				X	
123B STEAM HEATING VALVE (REHEAT COIL) * +				X	
123 DISCHARGE AIR TEMP		X			
123 SPACE TEMP		X			

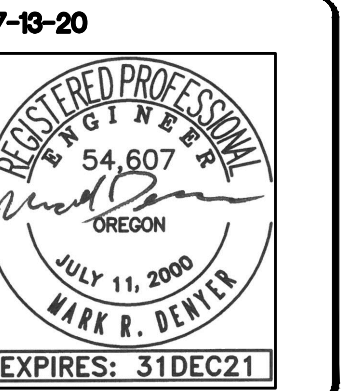
* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
+ STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.

5 EXHAUST FANS
M3.3 SCALE: DETAIL



CONTROLS FOR EXHAUST FANS, SEE 5/M3.3

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		



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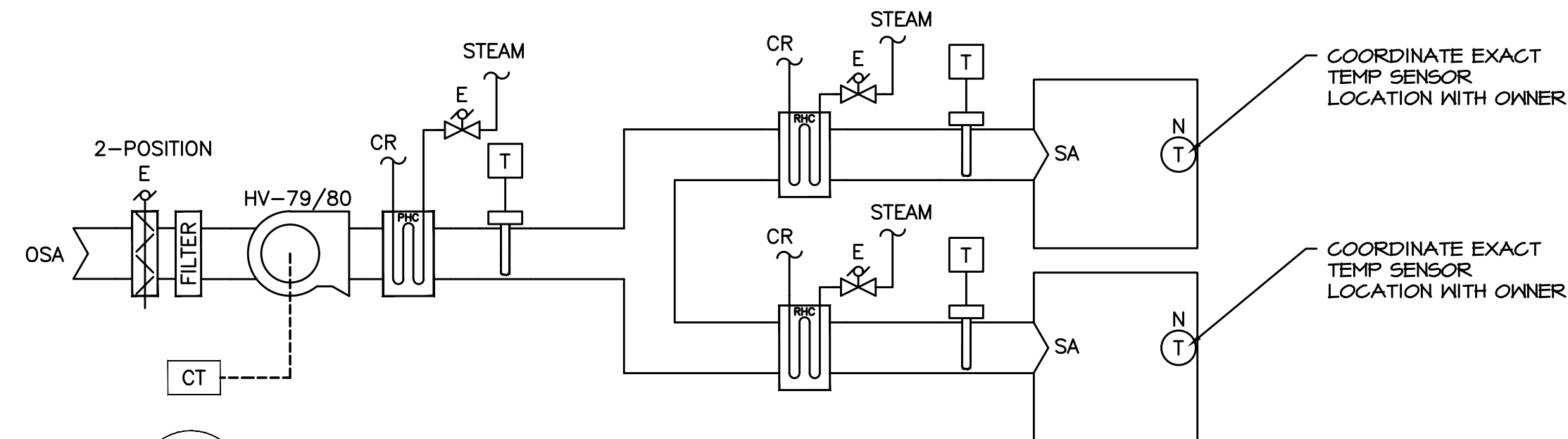


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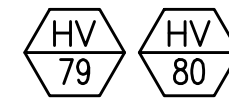
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M3.3

UNIT #9



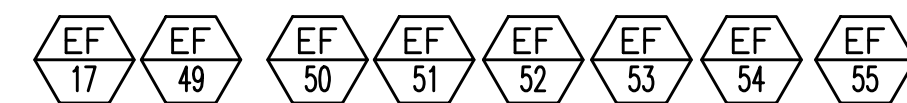
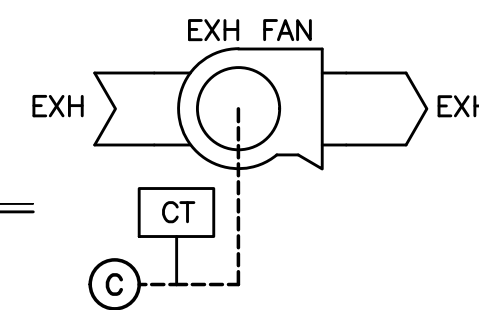
1 H&V FAN - UNIT 9
M3.4 SCALE: DETAIL



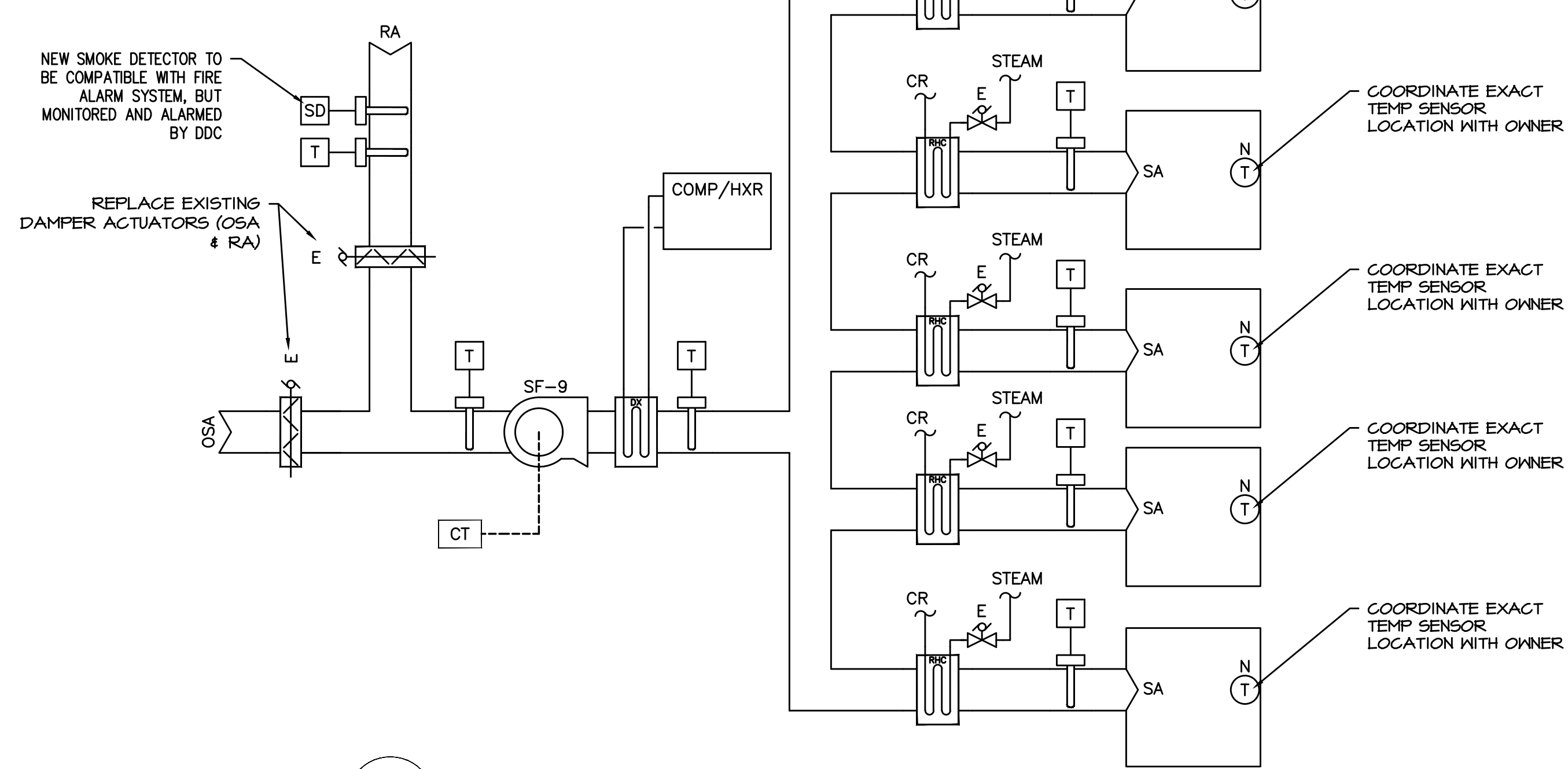
POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
OSA DAMPER POSITION *			X		
FAN START/STOP			X		
FAN STATUS - CT	X				X
DISCHARGE-PREHEAT AIR TEMP		X			
79/80 STEAM HEATING VALVE (PREHEAT COIL) * +				X	
131/133 STEAM HEATING VALVE (REHEAT COIL) * -				X	
132/134 STEAM HEATING VALVE (REHEAT COIL) * -				X	
131/133 DISCHARGE AIR TEMP		X			
132/134 DISCHARGE AIR TEMP		X			
131/133 SPACE TEMP		X			
132/134 SPACE TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.

2 EXHAUST FANS
M3.4 SCALE: DETAIL



POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		

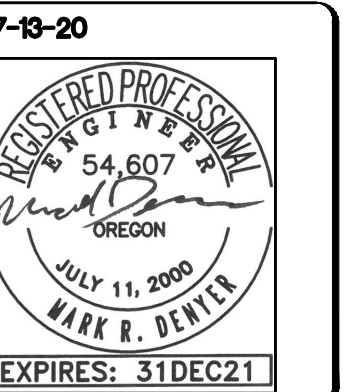


3 SUPPLY FAN - UNIT 9
M3.4 SCALE: DETAIL



POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
SMOKE DETECTOR	X				X
RETURN AIR TEMP		X			
RA DAMPER POSITION - **				X	
OSA DAMPER POSITION - **				X	
MIXED AIR TEMP		X			
FAN START/STOP			X		
FAN STATUS - CT	X				X
COOLING ENABLE (DX coil-CONDENSING UNIT)			X		
SF-9 DISCHARGE AIR TEMP		X			
5-1973 STEAM HEATING VALVE (REHEAT COIL) * +				X	
6-1973 STEAM HEATING VALVE (REHEAT COIL) * +				X	
7-1973 STEAM HEATING VALVE (REHEAT COIL) * +				X	
8-1973 STEAM HEATING VALVE (REHEAT COIL) * +				X	
9-1973 STEAM HEATING VALVE (REHEAT COIL) * +				X	
5-1973 DISCHARGE AIR TEMP		X			
6-1973 DISCHARGE AIR TEMP		X			
7-1973 DISCHARGE AIR TEMP		X			
8-1973 DISCHARGE AIR TEMP		X			
9-1973 DISCHARGE AIR TEMP		X			
5-1973 SPACE TEMP		X			
6-1973 SPACE TEMP		X			
7-1973 SPACE TEMP		X			
8-1973 SPACE TEMP		X			
9-1973 SPACE TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 ** - PROVIDE NEW DAMPER ACTUATOR TO CONTROL RETURN AND OSA DAMPERS. CONTRACTOR RESPONSIBLE TO COORDINATE EXACT STYLE REQUIRED TO FUNCTION WITH EACH UNIT. PROVIDE ALL MOUNTING BRACKETS AND HARDWARE AS REQUIRED FOR ACTUATOR OPERATION.
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.



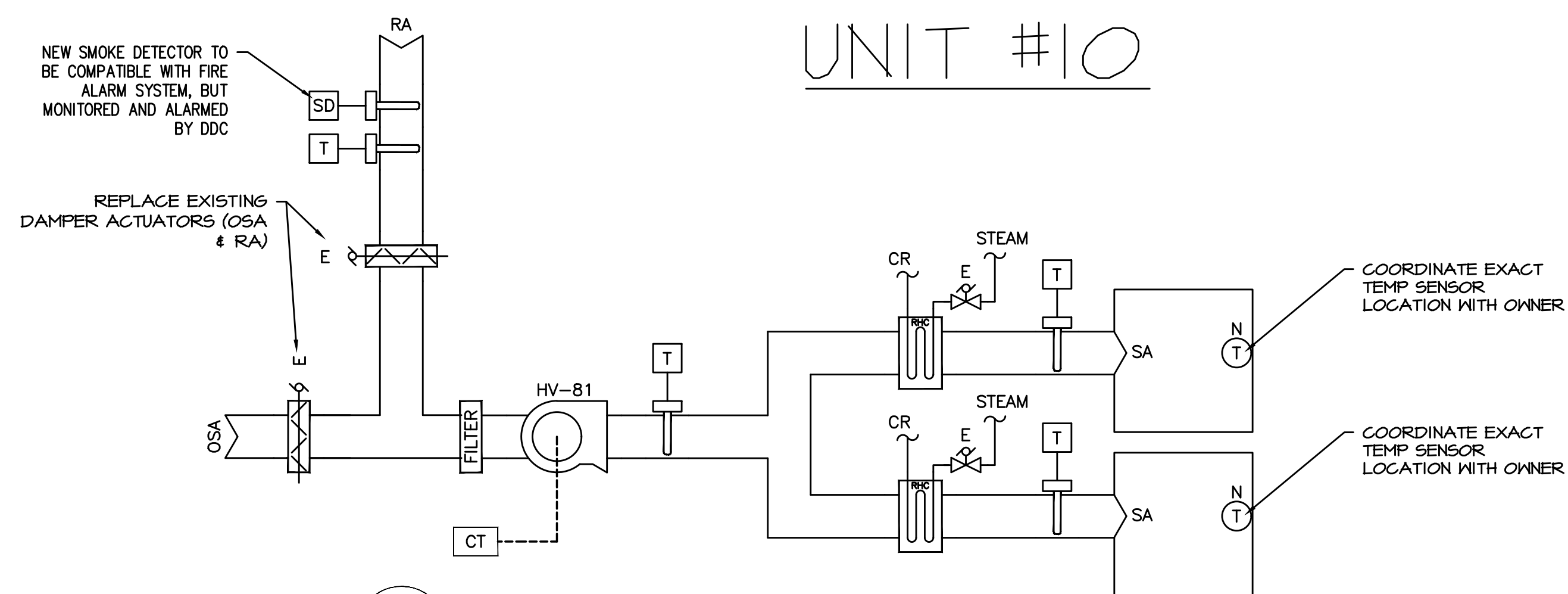
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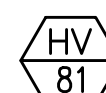


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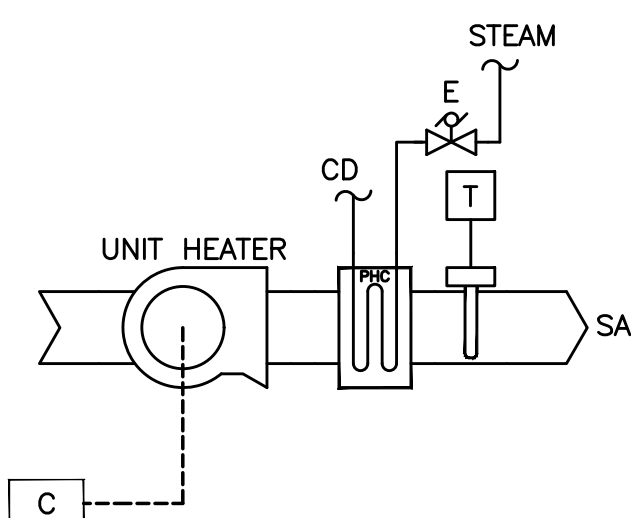


1 H&V FAN - UNIT 10
M3.5 SCALE: DETAIL



POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
SMOKE DETECTOR	X				X
RETURN AIR TEMP		X			
RA DAMPER POSITION - **				X	
OSA DAMPER POSITION - **				X	
FAN START/STOP			X		
FAN STATUS - CT	X				X
DISCHARGE- AIR TEMP		X			
135 STEAM HEATING VALVE (REHEAT COIL) * +				X	
136 STEAM HEATING VALVE (REHEAT COIL) * +				X	
135 DISCHARGE AIR TEMP		X			
136 DISCHARGE AIR TEMP		X			
135 SPACE TEMP		X			
136 SPACE TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.

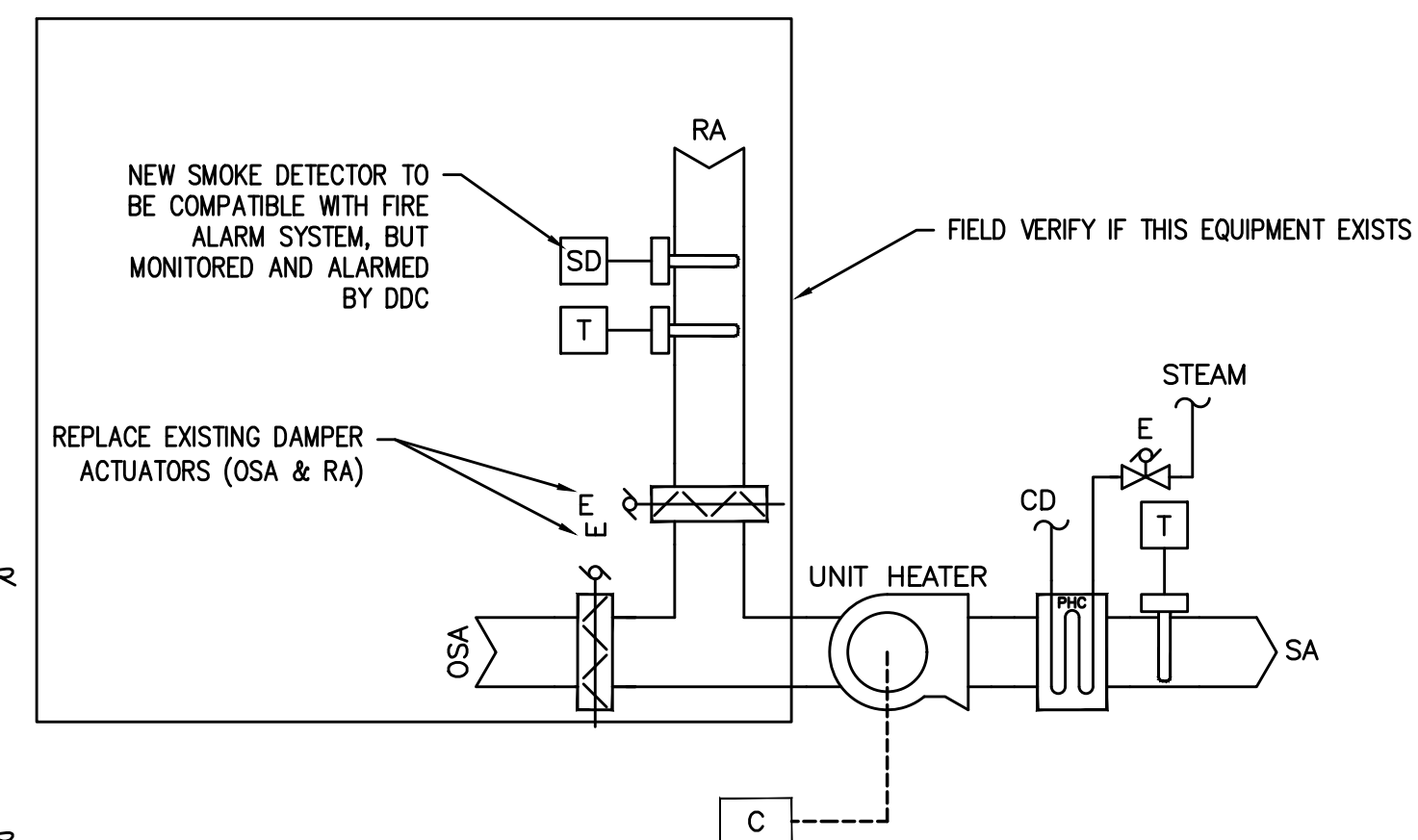


2 STEAM UNIT HEATERS
M3.5 SCALE: DETAIL



POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		
SPACE TEMP		X			
STEAM HEATING VALVE (PRE HEAT COIL) * +				X	
152 DISCHARGE AIR TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.



3 STEAM UNIT HEATERS
M3.5 SCALE: DETAIL



POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
SMOKE DETECTOR	X				X
RETURN AIR TEMP		X			
RA DAMPER POSITION - **				X	
OSA DAMPER POSITION - **				X	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		
SPACE TEMP		X			
STEAM HEATING VALVE (PRE HEAT COIL) * +				X	
153 DISCHARGE AIR TEMP		X			

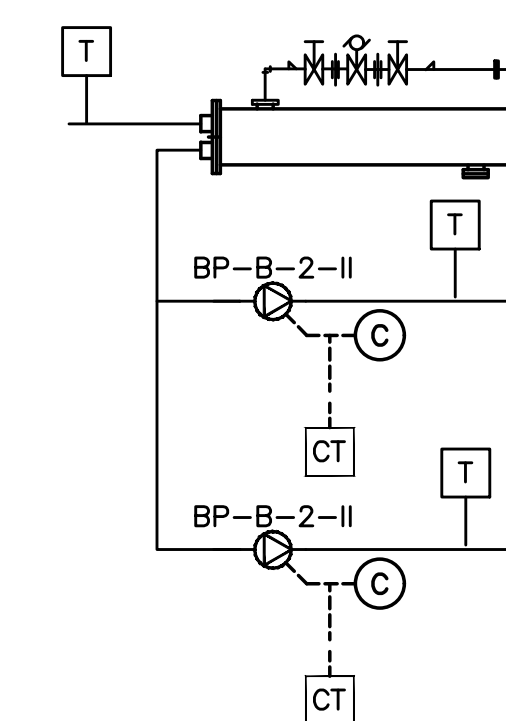
* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.

4 EXHAUST FANS
M3.5 SCALE: DETAIL

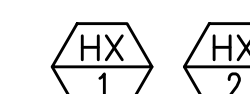


POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		

TUNNEL SYSTEM



5 STEAM TO HW CONVERTOR
M3.5 SCALE: DETAIL



CONTROLS FOR HW CONVERTOR, SEE X/M3.X

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
STEAM HEATING VALVE (HEAT EXHANGER) * +				X	
P1 PUMP START/STOP TYP OF ALL			X		
P1 PUMP MOTOR STATUS (CURRENT SENSOR)	X				X
P2 PUMP START/STOP TYP OF ALL			X		
P2 PUMP MOTOR STATUS (CURRENT SENSOR)	X				X
RETURN WATER TEMP		X			
ZONE 1 SUPPLY WATER TEMP		X			
ZONE 2 SUPPLY WATER TEMP		X			

NOTE UNIT II (HX-2) HAS ONLY ONE PUMP AND ONE HEATING ZONE



Date: 7-13-20
 Proj No: 10039
 Drawn By: MD
 Chkd By: MD
 DSGN By: MD
 Acad File: 10039-M30

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 Proj No: 10039
 Drawn By: MD
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 DSGN By: MD
 Acad File #0039-M30

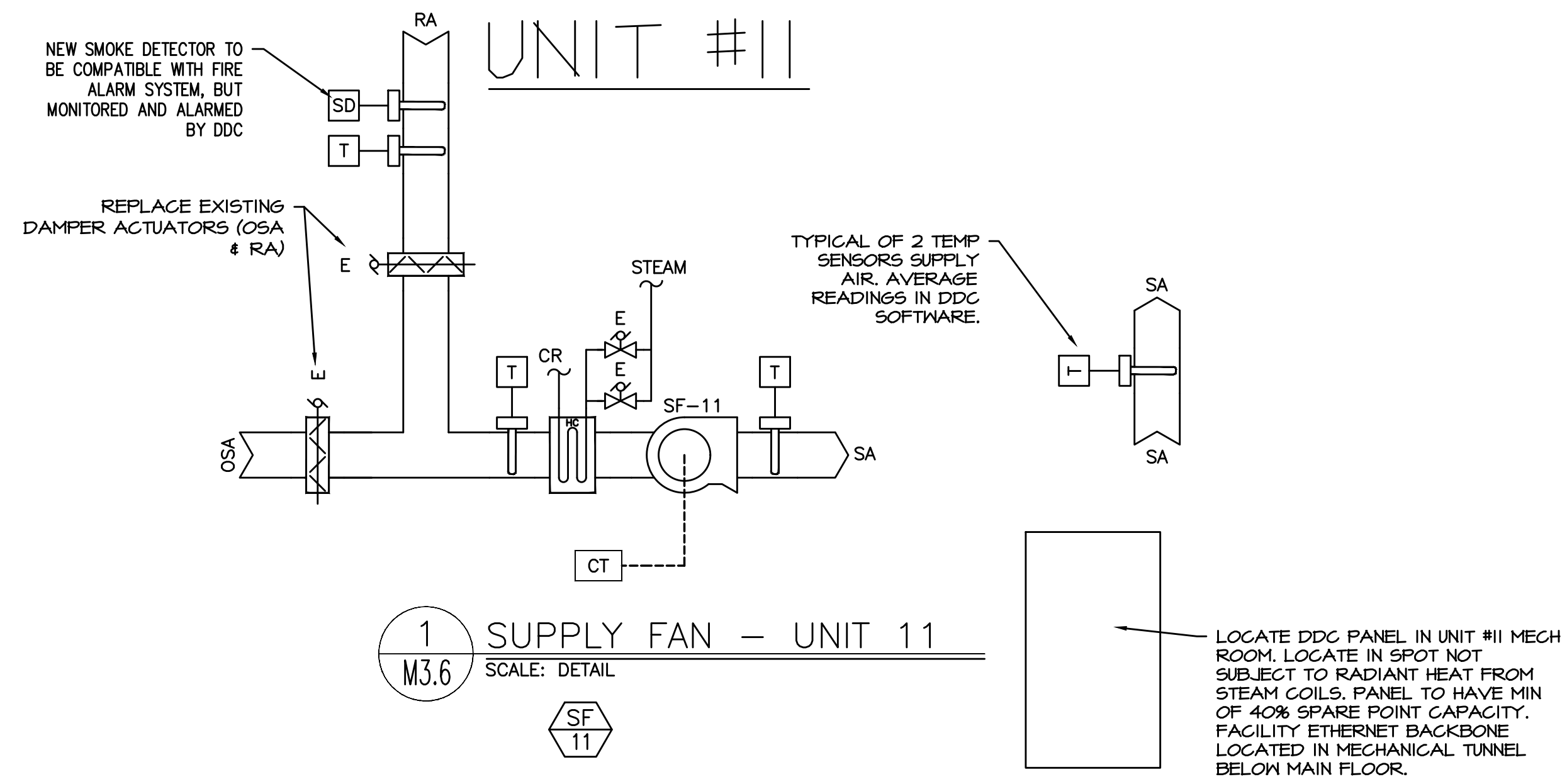
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SHEET

M3.6

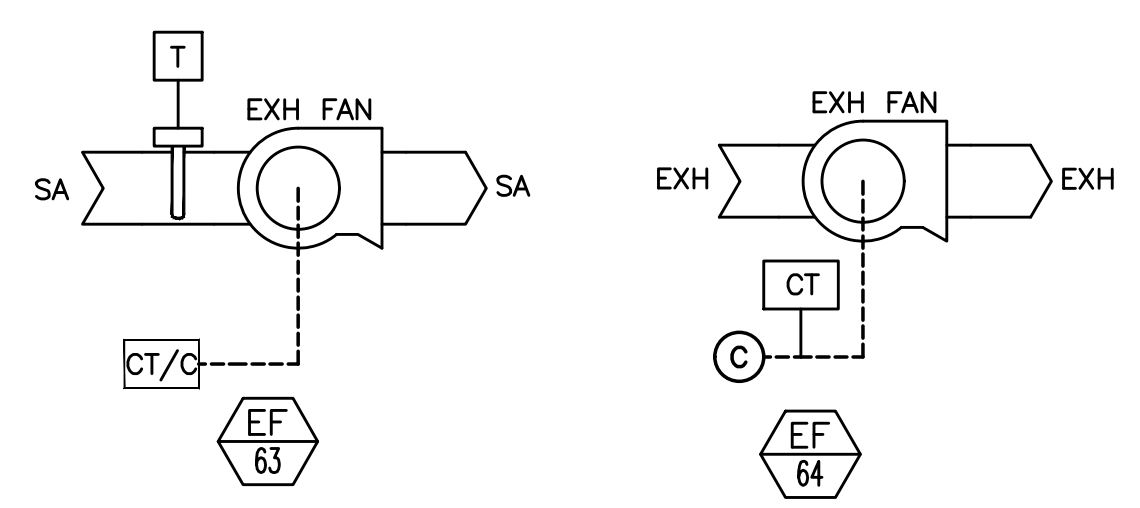


1 SUPPLY FAN - UNIT 11
 M3.6 SCALE: DETAIL
 SF 11

CONTROLS FOR FCU, SEE 1/M3.6

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
SMOKE DETECTOR	X				X
RETURN AIR TEMP		X			
RA DAMPER POSITION - **					X
OSA DAMPER POSITION - **					X
MIXED AIR TEMP		X			
2A STEAM HEATING VALVE (HEATING COIL) * +					X
2B STEAM HEATING VALVE (HEATING COIL) * +					X
FAN START/STOP			X		
FAN STATUS - CT	X				X
DISCHARGE AIR TEMP		X			
SPACE SUPPLY TEMP (TYP OF 2)		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 ** - PROVIDE NEW DAMPER ACTUATOR TO CONTROL RETURN AND OSA DAMPERS, CONTRACTOR RESPONSIBLE TO COORDINATE EXACT STYLE REQUIRED TO FUNCTION WITH EACH UNIT. PROVIDE ALL MOUNTING BRACKETS AND HARDWARE AS REQUIRED FOR ACTUATOR OPERATION.
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.



2 EXHAUST FANS
 M3.6 SCALE: DETAIL
 EF 63 EF 64

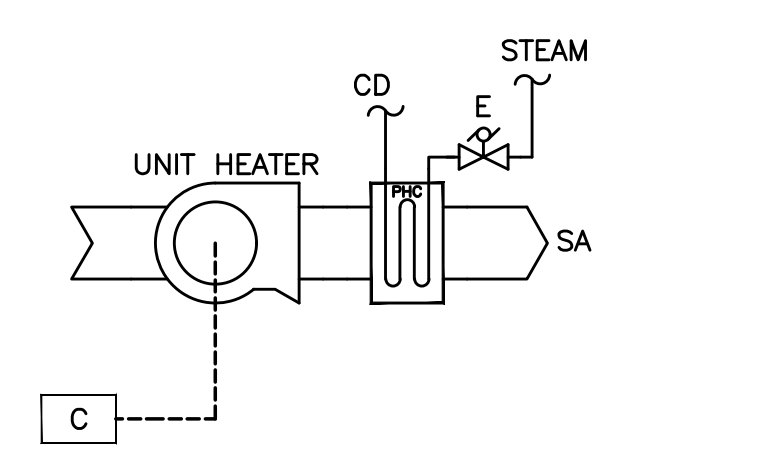
CONTROLS FOR EXHAUST FANS, SEE 2/M3.6

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		
EXH AIR TEMP (EF-63)		X			

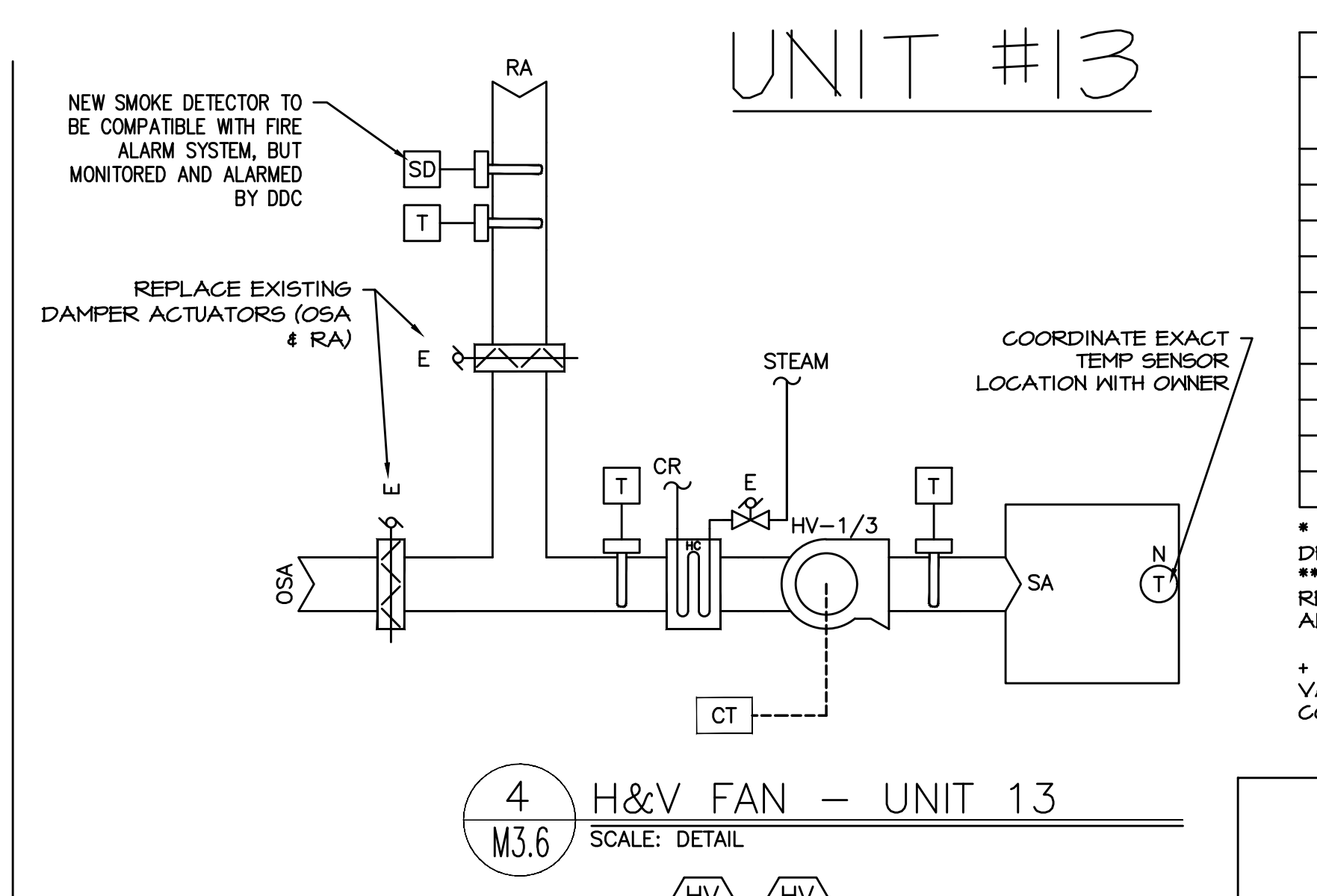
CONTROLS FOR UNIT HEATERS, SEE 3/M3.6

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		
SPACE TEMP		X			
STEAM HEATING VALVE (PRE HEAT COIL) * +					X

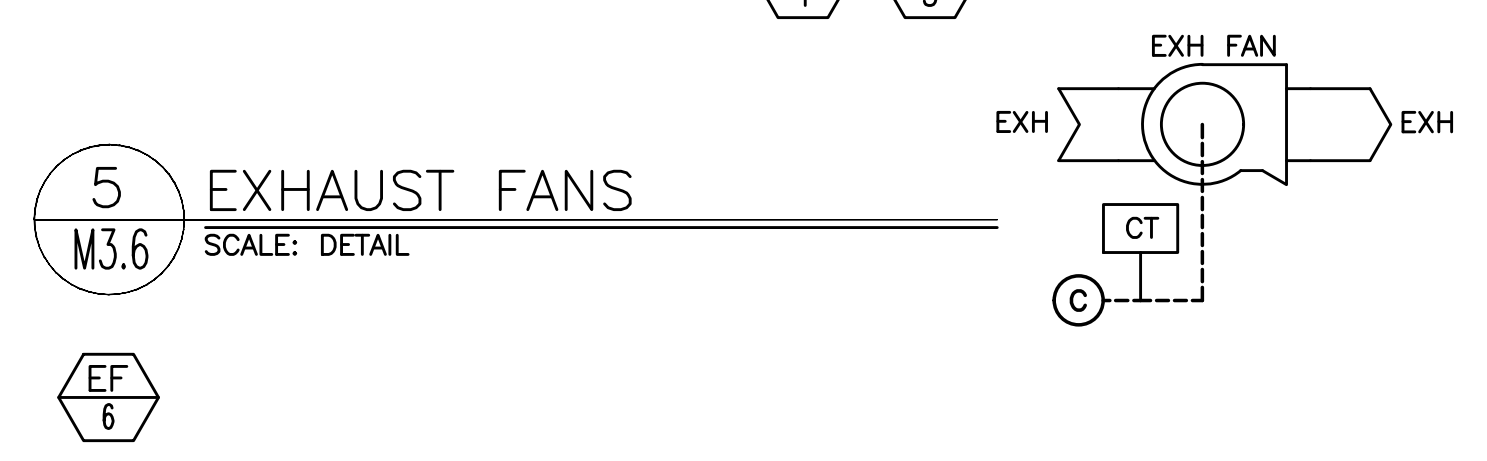
* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.



3 STEAM UNIT HEATERS
 M3.6 SCALE: DETAIL
 CUH 154



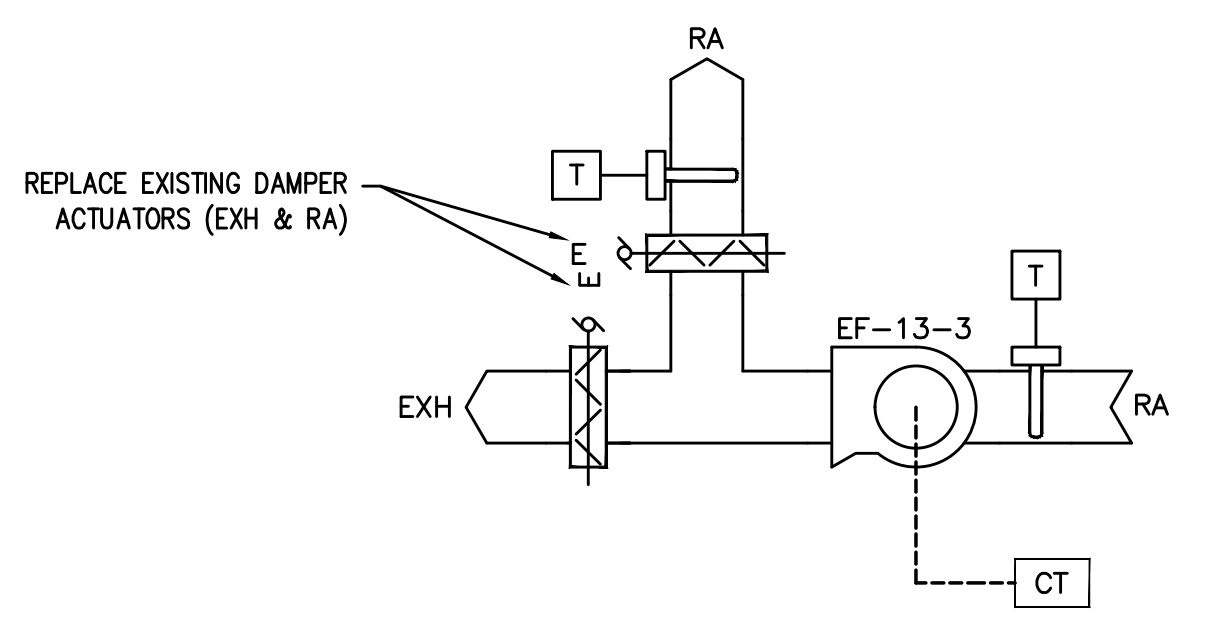
4 H&V FAN - UNIT 13
 M3.6 SCALE: DETAIL
 HV 1 HV 3



5 EXHAUST FANS
 M3.6 SCALE: DETAIL
 EF 6

CONTROLS FOR EXHAUST FANS, SEE 2/M3.4

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		

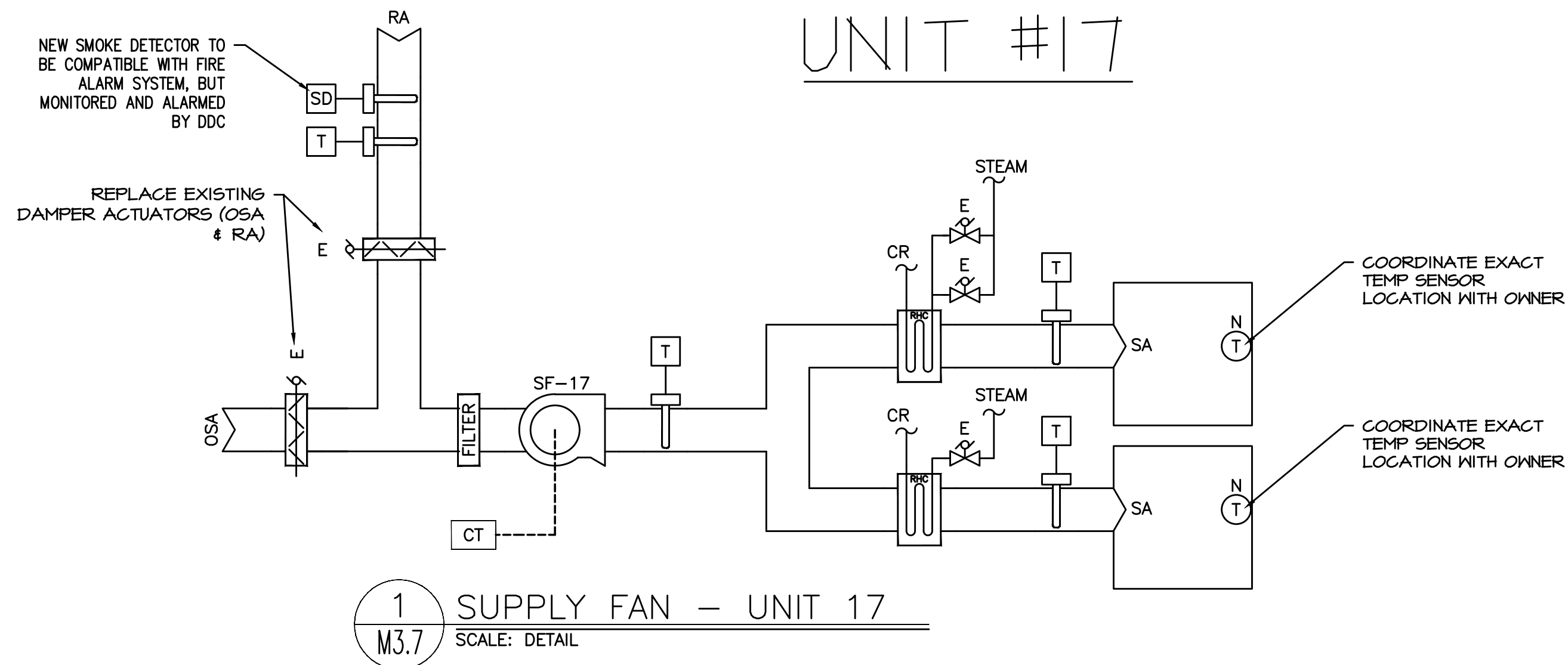


6 EXHAUST/RETURN FANS
 M3.6 SCALE: DETAIL
 EF 13-3

CONTROLS FOR FCU, SEE 1/M3.6

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
RETURN AIR TEMP		X			
FAN START/STOP			X		
FAN STATUS - CT	X				X
RA DAMPER POSITION - **					X
EXH DAMPER POSITION - **					X
RETURN AIR TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 ** - PROVIDE NEW DAMPER ACTUATOR TO CONTROL RETURN AND OSA DAMPERS, CONTRACTOR RESPONSIBLE TO COORDINATE EXACT STYLE REQUIRED TO FUNCTION WITH EACH UNIT. PROVIDE ALL MOUNTING BRACKETS AND HARDWARE AS REQUIRED FOR ACTUATOR OPERATION.
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.



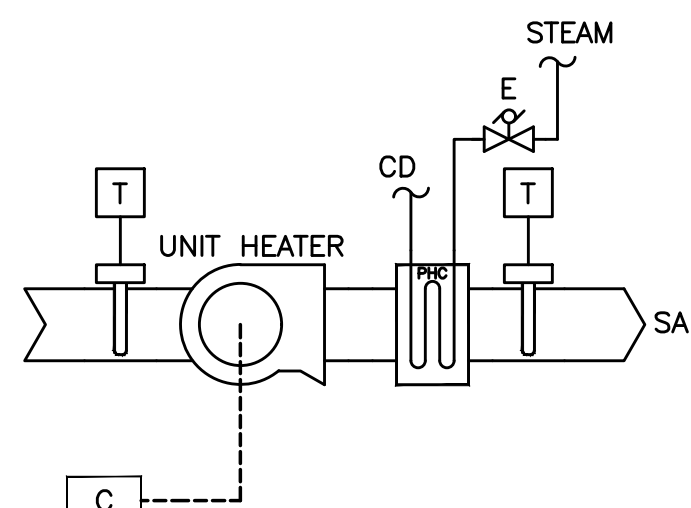
1 SUPPLY FAN - UNIT 17
M3.7 SCALE: DETAIL



CONTROLS FOR FCU, SEE 1/M3.7

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
SMOKE DETECTOR	X				X
RETURN AIR TEMP		X			
RA DAMPER POSITION - **				X	
OSA DAMPER POSITION - **				X	
FAN START/STOP			X		
FAN STATUS - CT	X				X
DISCHARGE- AIR TEMP		X			
17A-1 STEAM HEATING VALVE (REHEAT COIL) * +				X	
17B-1 STEAM HEATING VALVE (REHEAT COIL) * +				X	
17-2 STEAM HEATING VALVE (REHEAT COIL) * +				X	
17-1 DISCHARGE AIR TEMP		X			
17-2 DISCHARGE AIR TEMP		X			
17-1 SPACE TEMP		X			
17-2 SPACE TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 ** - PROVIDE NEW DAMPER ACTUATOR TO CONTROL RETURN AND OSA DAMPERS, CONTRACTOR RESPONSIBLE TO COORDINATE EXACT STYLE REQUIRED TO FUNCTION WITH EACH UNIT. PROVIDE ALL MOUNTING BRACKETS AND HARDWARE AS REQUIRED FOR ACTUATOR OPERATION.
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.



2 STEAM UNIT HEATERS
M3.7 SCALE: DETAIL

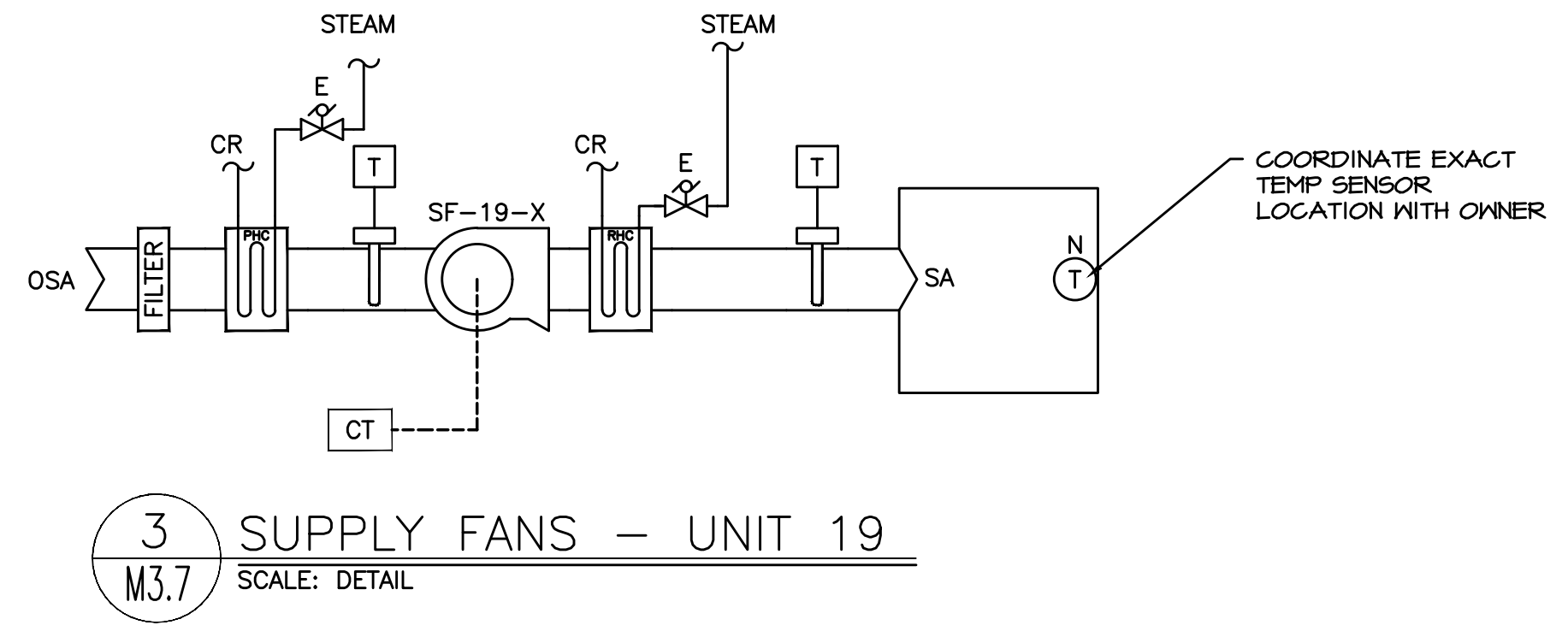


CONTROLS FOR UNIT HEATERS, SEE 2/M3.7

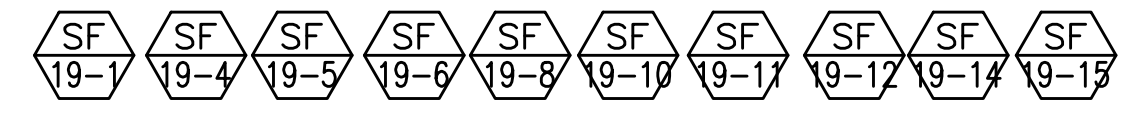
POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
RETURN AIR TEMP		X			
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		
SPACE TEMP		X			
STEAM HEATING VALVE (PRE HEAT COIL) * +				X	
DISCHARGE AIR TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.

UNIT #19 1962



3 SUPPLY FANS - UNIT 19
M3.7 SCALE: DETAIL



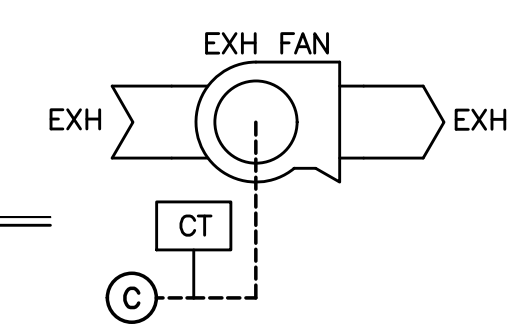
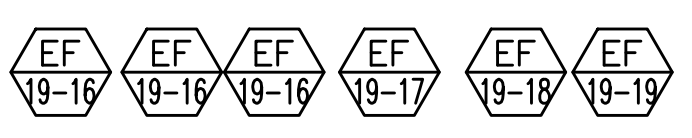
NOTE: EXISTING UNITS HAVE LETTER DESIGNATIONS/TAGS ON THE EXISTING EQUIPMENT

CONTROLS FOR FCU, SEE 3/M3.7

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
STEAM HEATING VALVE (PREHEAT COIL) * +				X	
DISCHARGE-PREHEAT AIR TEMP		X			
FAN START/STOP			X		
FAN STATUS - CT	X				X
STEAM HEATING VALVE (REHEAT COIL) * +				X	
DISCHARGE AIR TEMP		X			
SPACE TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS
 + STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.

4 EXHAUST FANS
M3.7 SCALE: DETAIL



CONTROLS FOR EXHAUST FANS, SEE 4/M3.7

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		

Date: 7-13-20
 Proj No: 10039
 Drawn By: MD
 Chkd By: MD
 DSN By: MD
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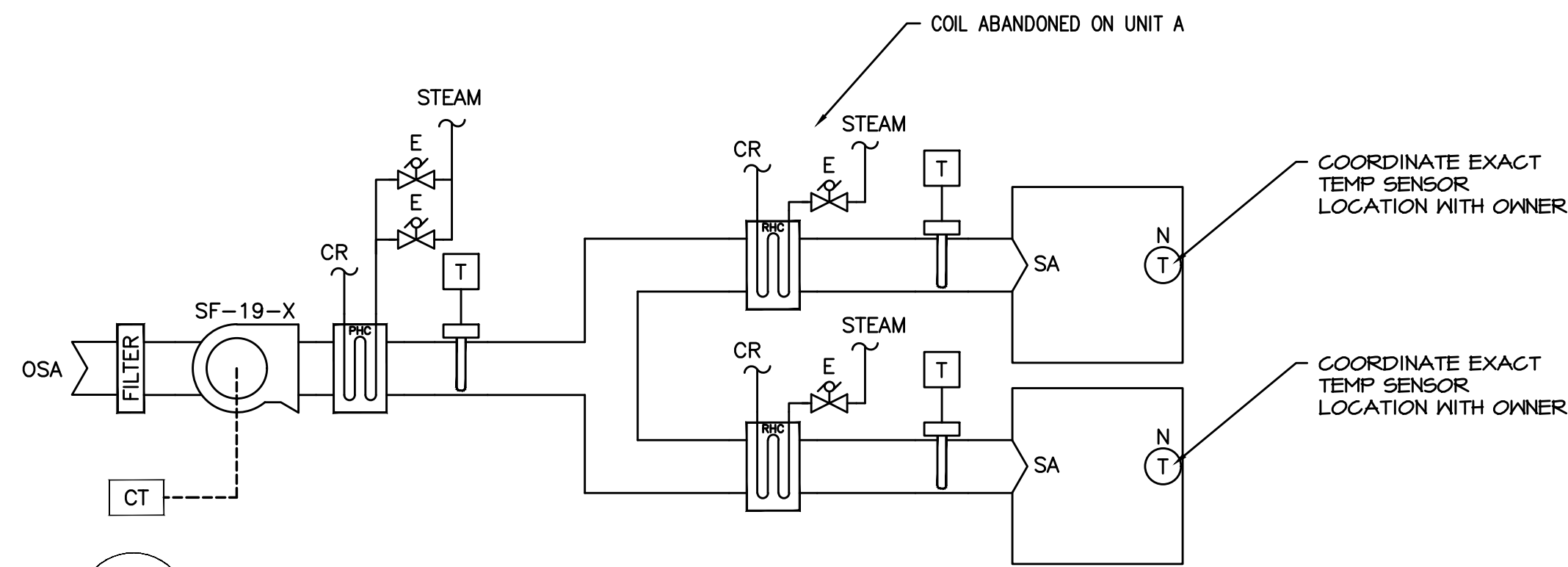


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M3.7

UNIT #19 1969



1 SUPPLY FAN - UNIT 19
M3.8 SCALE: DETAIL

SF 19-H SF 19-I AKA UNIT "B"
AKA UNIT "A" (1) (4)

CONTROLS FOR FCU, SEE 1/M3.8

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN START/STOP			X		
FAN STATUS - CT	X				X
DISCHARGE-PREHEAT AIR TEMP		X			
H/1 -A STEAM HEATING VALVE (PREHEAT COIL) * +				X	
H/1 -B STEAM HEATING VALVE (PREHEAT COIL) * +				X	
I-1 STEAM HEATING VALVE (REHEAT COIL) * +				X	
H-2/1-2 STEAM HEATING VALVE (REHEAT COIL) * +				X	
I-1 DISCHARGE AIR TEMP		X			
H-2/1-2 DISCHARGE AIR TEMP		X			
I-1 SPACE TEMP		X			
H-2/1-2 SPACE TEMP		X			

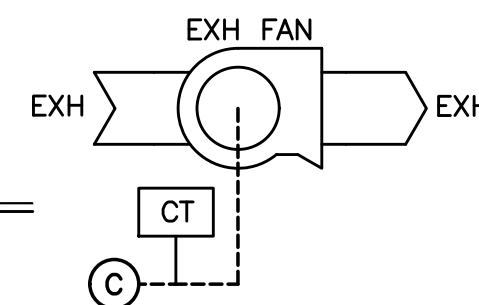
* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS.
+ STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.

3 EXHAUST FANS
M3.8 SCALE: DETAIL

EF 19-15A EF 19-16A EF 19-17A

CONTROLS FOR EXHAUST FANS, SEE 3/M3.8

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		



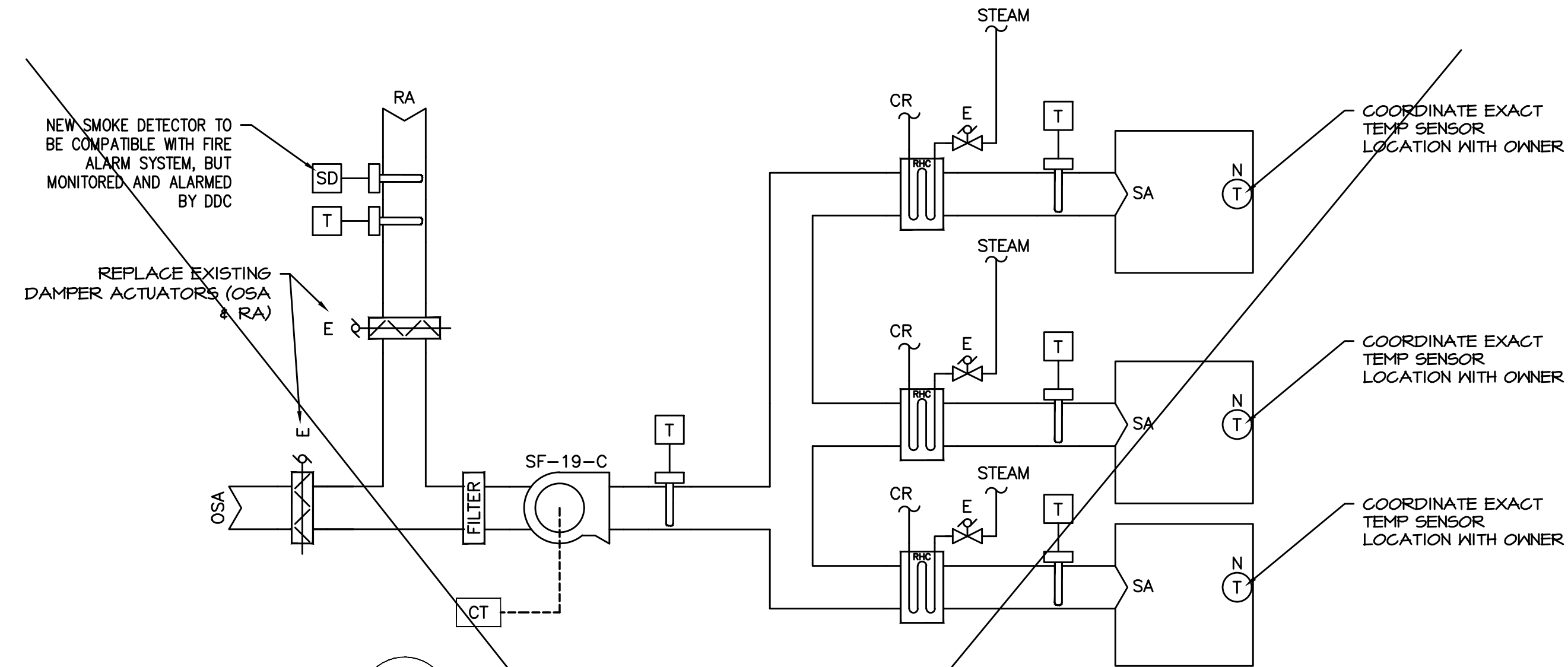
4 STEAM UNIT HEATERS
M3.8 SCALE: DETAIL

SF 19-E SF 19-F
AKA UNIT "C" (7) (8)

CONTROLS FOR UNIT HEATERS, SEE 4/M3.8

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		
SPACE TEMP		X			
A - STEAM HEATING VALVE (PRE HEAT COIL) * +				X	
B - STEAM HEATING VALVE (PRE HEAT COIL) * +				X	
DISCHARGE AIR TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS.
+ STEAM CONTROL VALVE TO REMAIN, PROVIDE ADD ALTERNATE (LINE ITEM COST) TO REPLACE VALVE IF EXISTING VALVE IS DAMAGED BEYOND REPAIR BY ODOC - SIZE PER REFERENCE CONTROL DRAWINGS.



2 SUPPLY FAN - UNIT 19
M3.8 SCALE: DETAIL

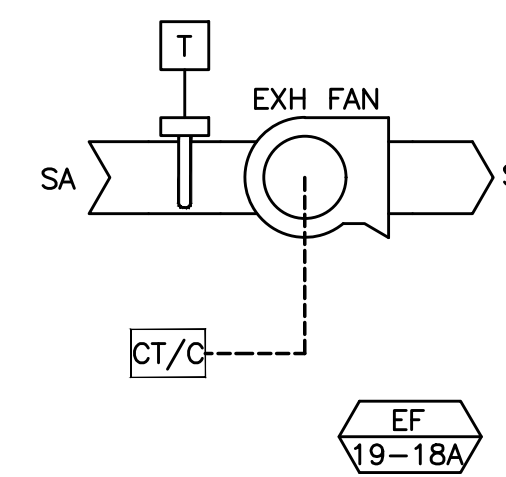
SF 19-C (9)

CONTROLS FOR FCU, SEE 2/M3.8

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
SMOKE DETECTOR	X				X
RETURN AIR TEMP		X			
RA DAMPER POSITION - **				X	
OSA DAMPER POSITION - **				X	
FAN START/STOP			X		
FAN STATUS - CT	X				X
DISCHARGE- AIR TEMP		X			
19-C-1 STEAM HEATING VALVE (REHEAT COIL) * +				X	
19-C-2 STEAM HEATING VALVE (REHEAT COIL) * +				X	
19-C-3 STEAM HEATING VALVE (REHEAT COIL) * +				X	
19-C-1 DISCHARGE AIR TEMP		X			
19-C-2 DISCHARGE AIR TEMP		X			
19-C-3 DISCHARGE AIR TEMP		X			
19-C-1 SPACE TEMP		X			
19-C-2 SPACE TEMP		X			
19-C-3 SPACE TEMP		X			

* REPLACE PNEUMATIC ACTUATOR WITH NEW ELECTRIC ACTUATOR. SEE REFERENCE CONTROL DRAWINGS.
** - PROVIDE NEW DAMPER ACTUATOR TO CONTROL RETURN AND OSA DAMPERS, CONTRACTOR RESPONSIBLE TO COORDINATE EXACT STYLE REQUIRED TO FUNCTION WITH EACH UNIT. PROVIDE ALL MOUNTING BRACKETS AND HARDWARE AS REQUIRED FOR ACTUATOR OPERATION.
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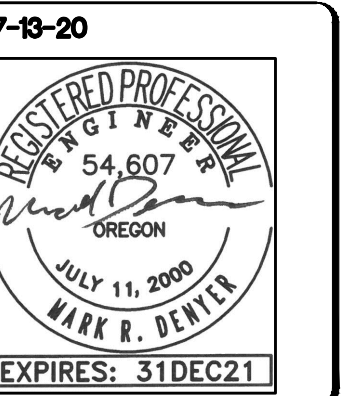
REPLACED WITH PACKAGED 7.5 TON RTU



5 EXHAUST FANS
M3.8 SCALE: DETAIL

CONTROLS FOR EXHAUST FANS, SEE 5/M3.8

POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN MOTOR STATUS (CURRENT SENSOR) TYP ALL	X				X
START/STOP TYP OF ALL			X		
EXH AIR TEMP (EF-18A)		X			



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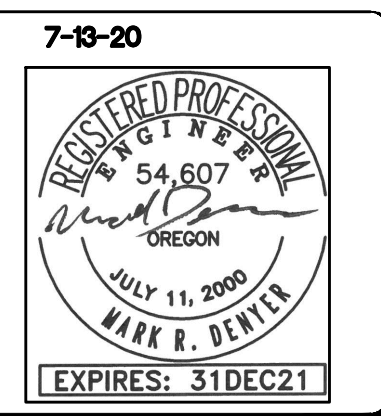


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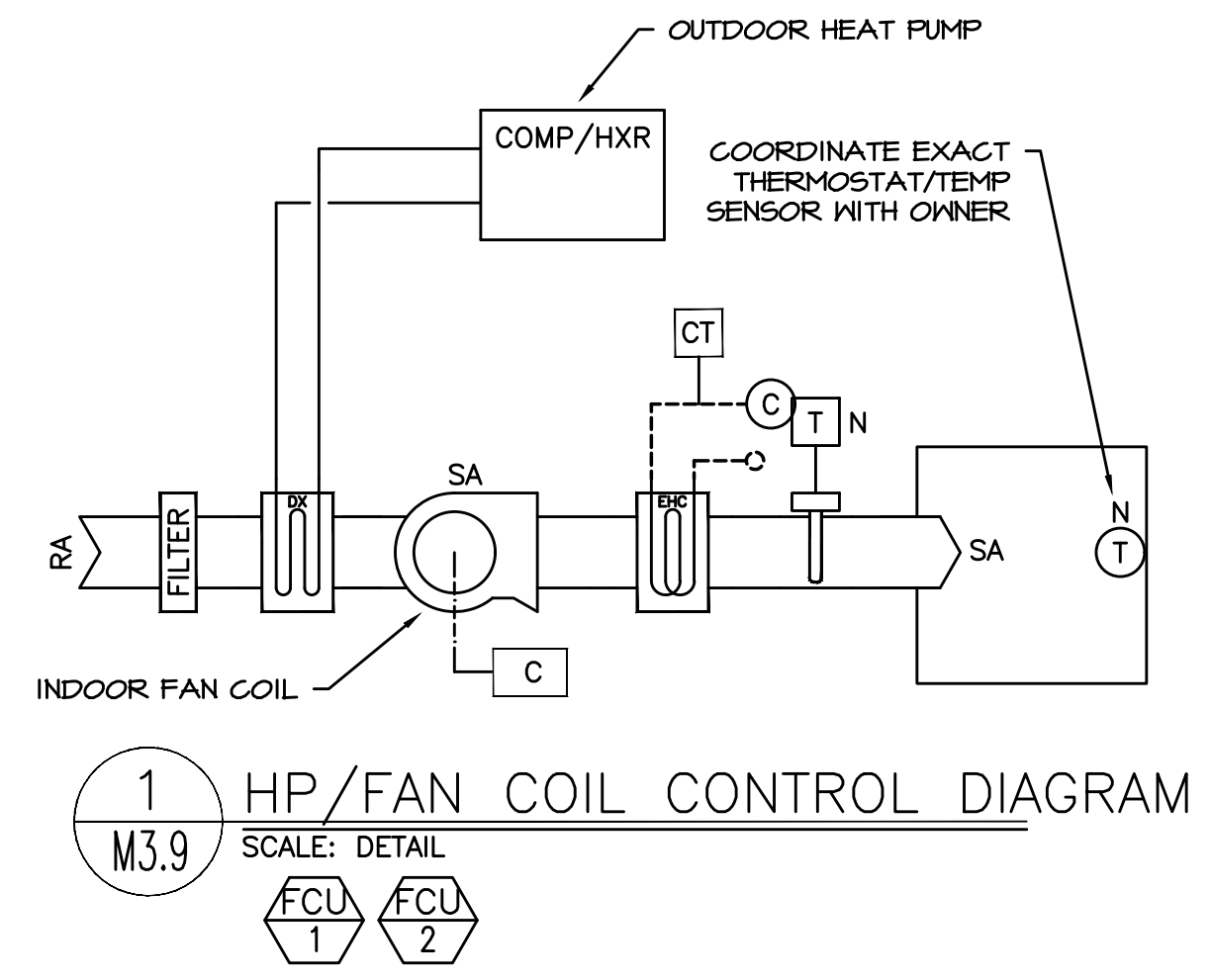
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M3.8

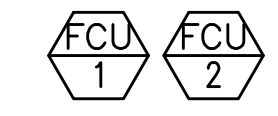
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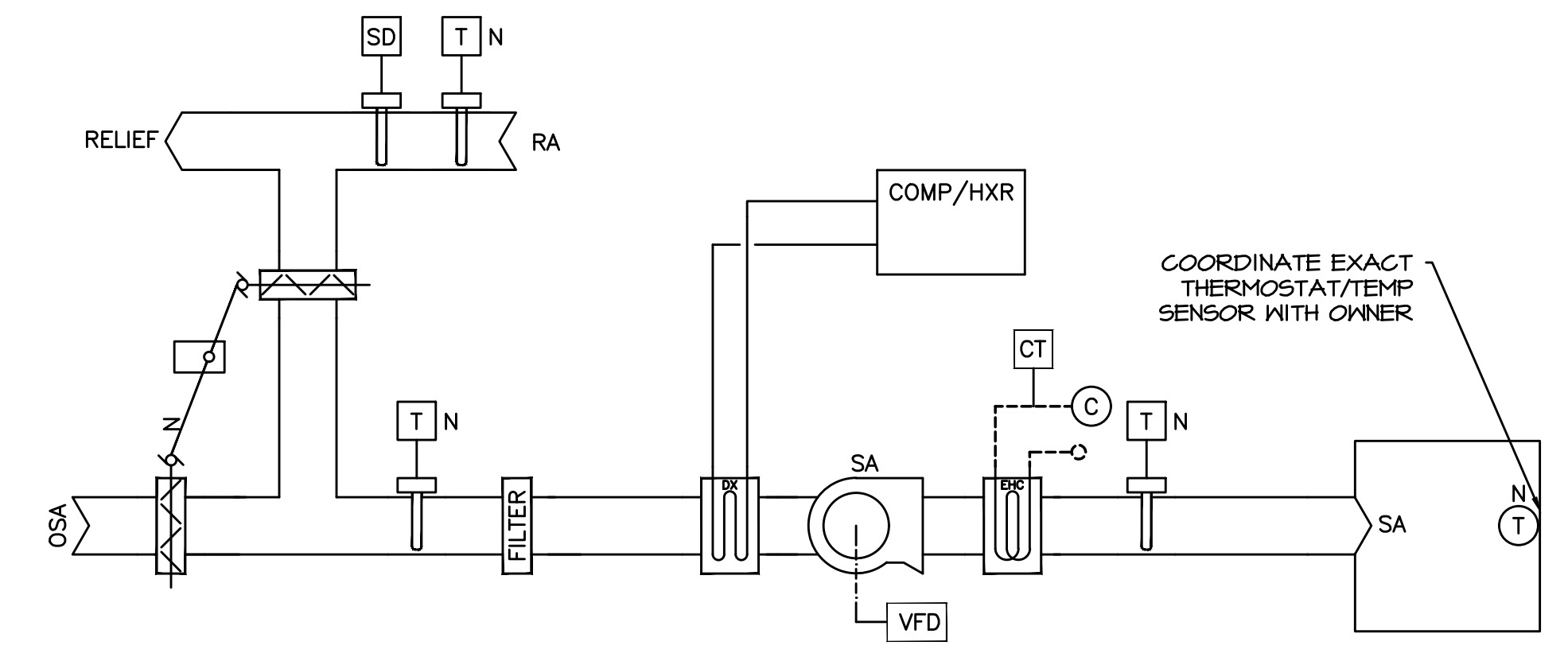
UNIT #19 POST 1969



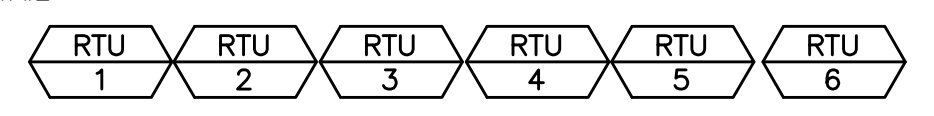
1 HP/FAN COIL CONTROL DIAGRAM
M3.9 SCALE: DETAIL



POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN START/STOP				X	
FAN STATUS - CT	X				X
SUPPLY/DISCHARGE AIR TEMP		X			
SPACE TEMP		X			
COOLING ENABLE				X	
HEATING ENABLE (HP)			X		
ELECTRIC HEATING ENABLE			X		



3 ROOF TOP UNIT CONTROL DIAGRAM
M2.10A SCALE: DETAIL



POINT DESCRIPTION	INPUT		OUTPUT		ALARM
	DIGITAL	ANALOG	DIGITAL	ANALOG	
FAN START/STOP				X	
FAN STATUS - CT	X				X
RETURN AIR TEMP		X			
SUPPLY/DISCHARGE AIR TEMP		X			
MIXED AIR TEMP		X			
SPACE TEMP		X			
COOLING ENABLE				X	
ELECTRIC HEATING ENABLE				X	

PACKAGED UNIT CONTROLS:
PROVIDE DDC ENABLE/DISABLE CONTROLS TO RTU. ALL INTERNAL CONTROLS SUCH AS ECONOMIZER FUNCTIONS, HEATING & COOLING STAGES TO BE CONTROLLED BY UNIT INTEGRAL CONTROLS. PROVIDE NEW T-STAT AT LOCATION SELECTED BY OWNER. ALL T-STAT SET POINTS AND SCHEDULING TO BE PART OF DDC SYSTEM.

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Chkd By: MD
DSGN By: MD
Acad File: 10039-M30

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