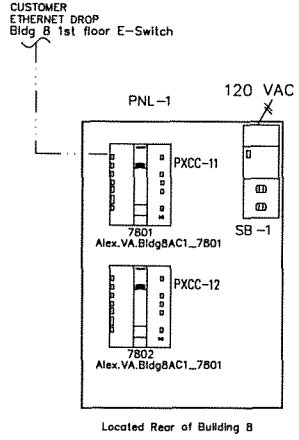
SIEMENS

BUILDING 8: AS-BUILT



REVISION HISTORY

1	4/30/2012	DMP	AS BUILT DRAWING

SIEMENS

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VA MEDICAL CTR RETRO
ALEXANDRIA, LA

ENGINEER	DRAFTER	CHECKED BY	INITIAL RELEASE	LAST EDIT DATE
			05/01/11	04/30/12

BLDG 8: RISER

440P-081912
0

B8

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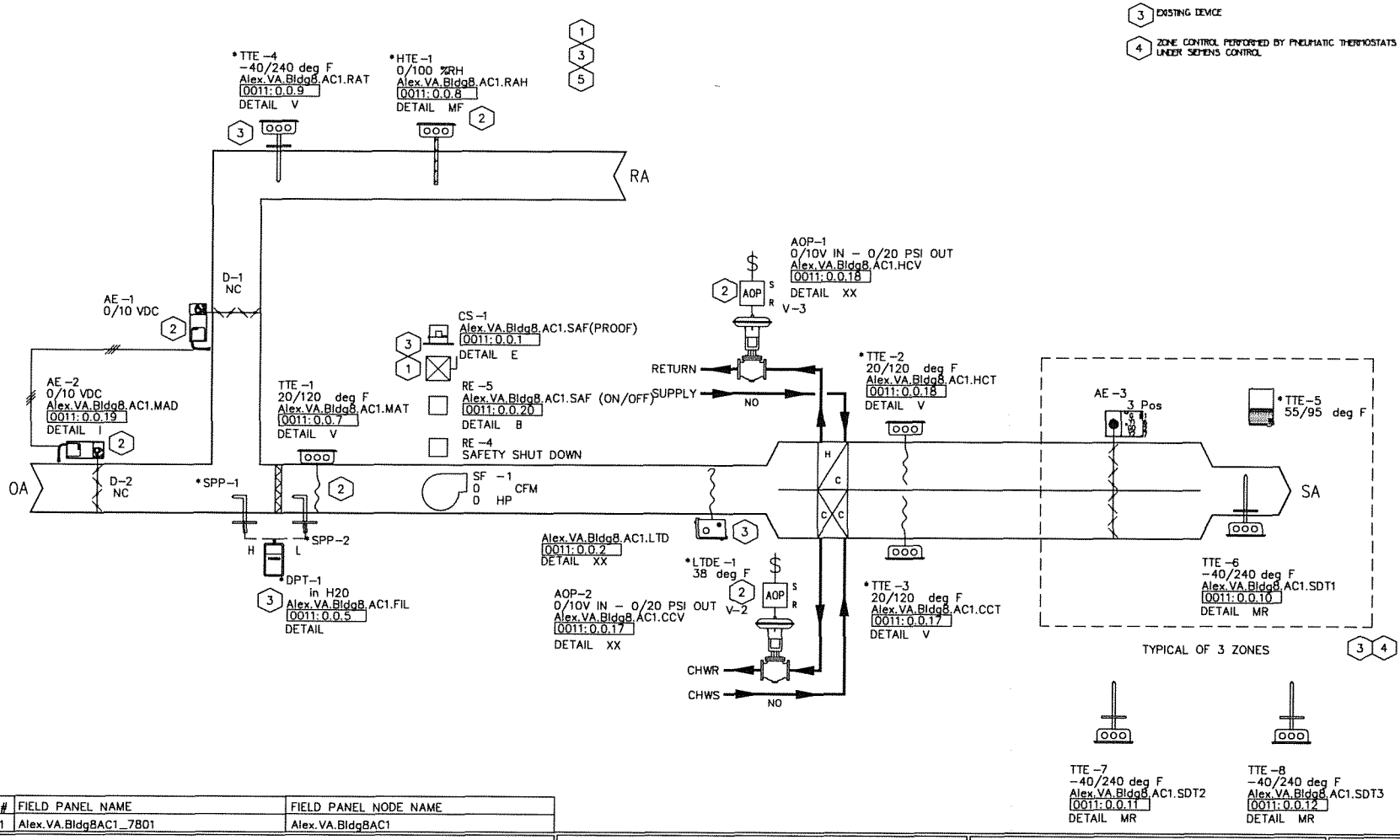
INSTALLATION NOTES:

1. ENSURE DEVICE IS WIRED TO SAFETY CIRCUIT OF FAN/UNIT.
2. NEW DEVICE.
3. EXISTING DEVICE
4. ZONE CONTROL PERFORMED BY PNEUMATIC THERMOSTATS NOT UNDER SIEMENS CONTROL



REF#	FIELD PANEL NAME	FIELD PANEL NODE NAME
0011	Alex.VA.Bldg8AC1_7801	Alex.VA.Bldg8AC1

REVISION HISTORY

1	4/30/2012	DMP	AS BUILT DRAWING

SIEMENS

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VA MEDICAL CTR RETRO
ALEXANDRIA, LA

ENGINEER	DRAFTER	CHECKED BY	INITIAL RELEASE	LAST EDIT DATE
			05/01/11	04/30/12

BLDG 8: AC-1

440P-081912

800

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Control Device		Qty	Product Number	Manufacturer	Document Number	Description
Field Mounted Devices						
AE	1-2	2	GCA161.1U	SIEMENS	154001	MOD(V) SR,24V, MED.
AE	3	1	GCA131.1U	SIEMENS	154001	3PT, SR,24V,ACT.MED.
AOP	1	1	PXP23LG	ACT	1002cut025	TRANSDUCR E/P 1400 SCIM IN/OUT
AOP	2	1	545-113	SIEMENS	149 277	AOP -TRANSDUCER(SHORT BRACKET)
CS	1	1	H609	VERIS	1006cut016	Current Switch,Split-Core,Adj,N.O.,120V
D						SEE DAMPER SUBMITTAL
RE	4-5	2	RIBU1C	FUNCTIONAL DEVICES	1208cut013	RIB 120VAC 24VAC/DC SPDT
SF	1	1	N/A	N/A	N/A	N/A
TTE	1	1	544-342-24	SIEMENS	149261	FLEX AVER SNSR, PT 1K OHM, 24FT PROBE
TTE	6-8	3	544-339	SIEMENS	149 261	*OBS/BY 544-339-18* D/PT TEMP SENSOR,
V						SEE VALVE SUBMITTAL

The constant volume air handling unit consists of a mixed air section with outdoor air and return air dampers, pre-filter, hot water hot deck heating coil, chilled water cold deck cooling coil, supply fan and multi-zone dampers. The unit is DDC controlled using electric actuation.

The air handling unit is scheduled for automatic operation on a time of day basis for Occupied and Unoccupied modes. Within the Occupied mode, the system can enter the Warm-Up mode when the space temperature is below set point or the Cool-Down mode when the space temperature is above set point. The system stays in the Warm-Up or Cool-Down mode until the mode set point is satisfied. Within the Unoccupied mode, Night Heating is available when the space temperature drops below 65 degrees F (18 degrees C). The latest start time is the scheduled occupancy for the space.

The air handling unit operates in Warm-Up, Cool-Down, Occupied, Unoccupied, Night Heating and Safety modes as follows (All suggested set points and settings are adjustable.):

Warm-Up
The supply fan starts. The mixing dampers are positioned for 100% return air and the cold deck cooling coil valve remains closed. The hot deck heating coil valve modulates to maintain the hot deck supply air temperature set point. If time reaches the latest start time during the Warm-Up mode, the outdoor air damper opens to its minimum position. The system is prevented from entering the Warm-Up mode more than once per day.

Cool-Down
The supply fan starts. The hot deck heating coil valve remains closed. The cold deck cooling coil valve and the mixing dampers modulate to maintain the cold deck supply air temperature set point. When the outside air dry bulb temperature is above the economizer changeover value, the mixing dampers are positioned for 100% return air. If time reaches the latest start time during the Cool-Down mode, the outdoor air damper opens to its minimum position or is controlled in economizer operation. The system is prevented from entering the Cool-Down mode more than once per day.

Occupied
The supply air temperature set point is reset based on the room temperature set point.

The fan starts or continues to run and the unit is controlled as follows:

The hot deck heating coil valve modulates to maintain the hot deck supply air temperature set point.

When the outside air dry bulb temperature is below the economizer changeover value, the mixing dampers and cold deck cooling coil valve modulate to maintain the cold deck supply air temperature set point with a low limit of 48 degrees F (9 degrees C) at the mixed air sensor. The mixing dampers ramp open slowly to minimize overshooting.

When the outside air dry bulb temperature is above the economizer changeover value, the mixing dampers are placed in the minimum outdoor air position. The cold deck cooling coil valve modulates to maintain the cold deck supply air temperature set point.

Unoccupied
The fan is off, the cold deck cooling coil valve closes, and mixing dampers close to the outdoor air. The hot deck heating coil valve opens.

Night Heating
The supply fan starts with the hot deck heating coil valve open to maintain a minimum space temperature of 65 degrees F (18 degrees C) in any of the zones. The cold deck cooling coil valve remains closed and the mixing dampers remain closed to outdoor air.

Zone Control
The zone hot and cold deck dampers modulate in sequence to maintain space temperature set point.

Safety
When the OAT is less than 45 degrees F (7 degrees C), the hot deck heating coil valve modulates to maintain the hot deck air temperature at 45 degrees F (7 degrees C) and the cold deck cooling coil valve opens. When the OAT is 45 degrees F (7 degrees C) or above, the hot deck heating coil valve and the cold deck cooling coil valve close. All other dampers and valves position to their normal position after the fan is de-energized.

A low temperature detector in the discharge of the heating coil de-energizes the supply fan when temperatures below 38 degrees F (3 degrees C) are sensed. The hot deck heating coil valve modulates to maintain the hot deck air temperature at 45 degrees F (7 degrees C) and the cold deck cooling coil valve opens. All other dampers and valves position to their normal position after the fan is de-energized.

A current switch is installed in the supply fan starter. The DDC system uses this switch to confirm the fan is in the desired state (i.e. on or off) and generates an alarm if status deviates from DDC start/stop control.

REVISION HISTORY

1	4/30/2012	DMP	AS BUILT DRAWING

SIEMENS

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VA MEDICAL CTR RETRO
ALEXANDRIA, LA

ENGINEER	DRAFTER	CHECKED BY	INITIAL RELEASE	LAST EDIT DATE
				04/24/12

BLDG 8: AC-1 BOM & SEQ

440P-081912
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800A

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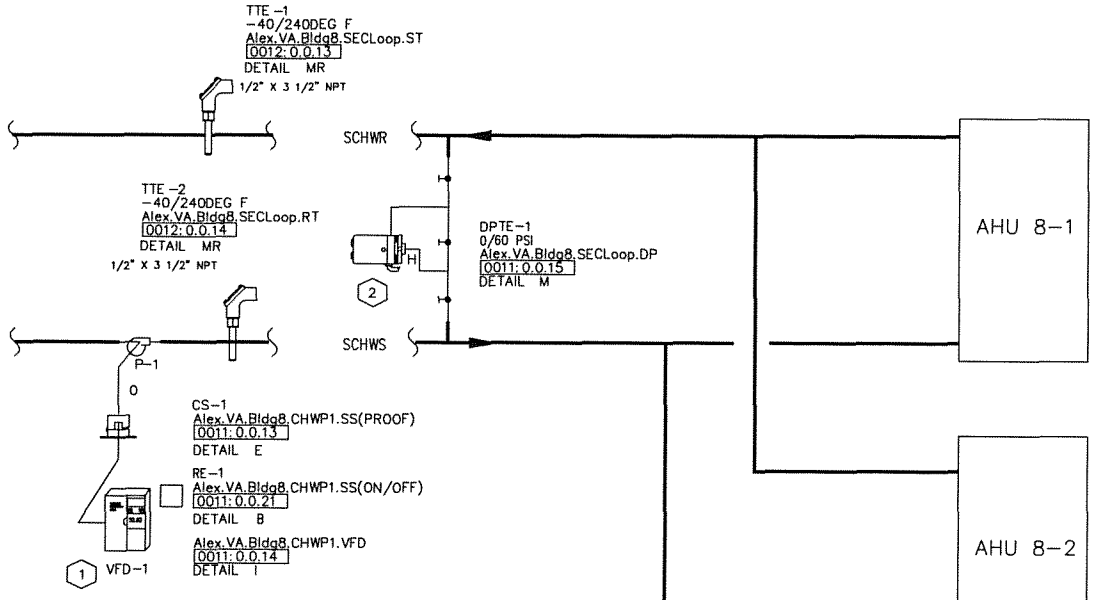

REF#	FIELD PANEL NAME	FIELD PANEL NODE NAME
0012	Alex.VA.Bldg8AC2_7802	Alex.VA.Bldg8AC2
0011	Alex.VA.Bldg8AC1_7801	Alex.VA.Bldg8AC1

REVISION HISTORY

1	4/30/2012	DMP	AS BUILT DRAWING

SIEMENS

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VA MEDICAL CTR RETRO
ALEXANDRIA, LA

ENGINEER	DRAFTER	CHECKED BY	INITIAL RELEASE	LAST EDIT DATE
			05/01/11	04/24/12

BLDG 8 CWP

44OP-081912
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801

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Control Device	Qty	Product Number	Manufacturer	Document Number	Description
Field Mounted Devices					
CS 1	1	H906	VERIS	1006cut005	Current Switch,Split-Core,Adj,N.C.
DPTE 1	1	2301050PD2F11B	SETRA	0608cut002	DP TRANS,WET,0-50PSID,4-20MA
P 1	1	N/A	N/A	N/A	N/A
RE 1	1	RIBU1C	FUNCTIONAL DEVICES	1208cut013	RIB 120VAC 24VAC/DC SPDT

The secondary chilled water system consists of chilled water pumps with individual variable frequency drives. The system is DDC controlled with electric actuation.

The system operates as follows (All suggested set points and settings are adjustable.):

Secondary Chilled Water Pump Alternation
Secondary chilled water pumps alternate to equalize runtime. Selection of the lead pump is evaluated on a weekly basis. The pump with the least runtime is the lead pump. The pump with the most runtime is the lag pump.

Secondary Chilled Water Pump Control
When the chilled water system is on (indicated by a chilled water pump being on), the lead secondary chilled water pump starts. The variable frequency drive modulates pump speed to maintain system differential pressure of 20 PSI as sensed near the end of the secondary piping run. If the system differential pressure is below set point and the lead pump is at 100% speed for a time interval of 15 minutes, the lag pump starts. With both pumps on, the variable frequency drives are modulated in unison to maintain system differential pressure. If the system differential is at set point and both pumps are on and at 45% speed for a time interval of 15 minutes the lag pump is stopped.

The DDC system uses current switches to confirm the lead pump is in the desired state (i.e. on or off) and generates an alarm if status deviates from DDC start/stop control. If the lead pump goes into alarm, the lag pump starts.

REVISION HISTORY

1	4/30/2012	DMP	AS BUILT DRAWING

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ALEXANDRIA, LA

ENGINEER	DRAFTER	CHECKED BY	INITIAL RELEASE	LAST EDIT DATE
				05/12/11

BLDG 8: CWP

44OP-081912
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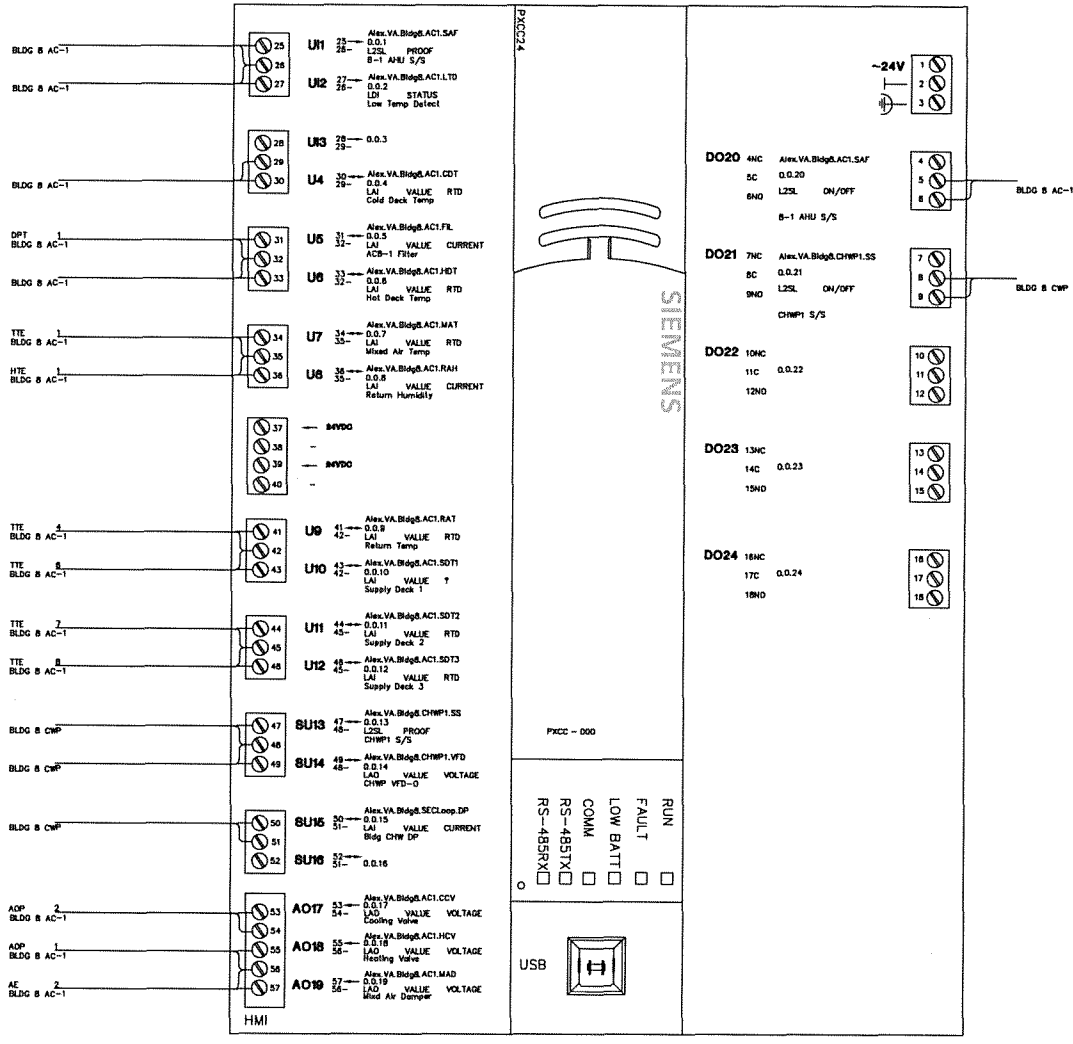

REVISION HISTORY

1	4/30/2012	DMP	AS BUILT DRAWING

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VA MEDICAL CTR RETRO
ALEXANDRIA, LA

ENGINEER	DRAFTER	CHECKED BY	INITIAL RELEASE	LAST EDIT DATE
			05/01/11	04/24/12

Bldg 8: AC-1 & CHWP-1

44OP-081912

801B

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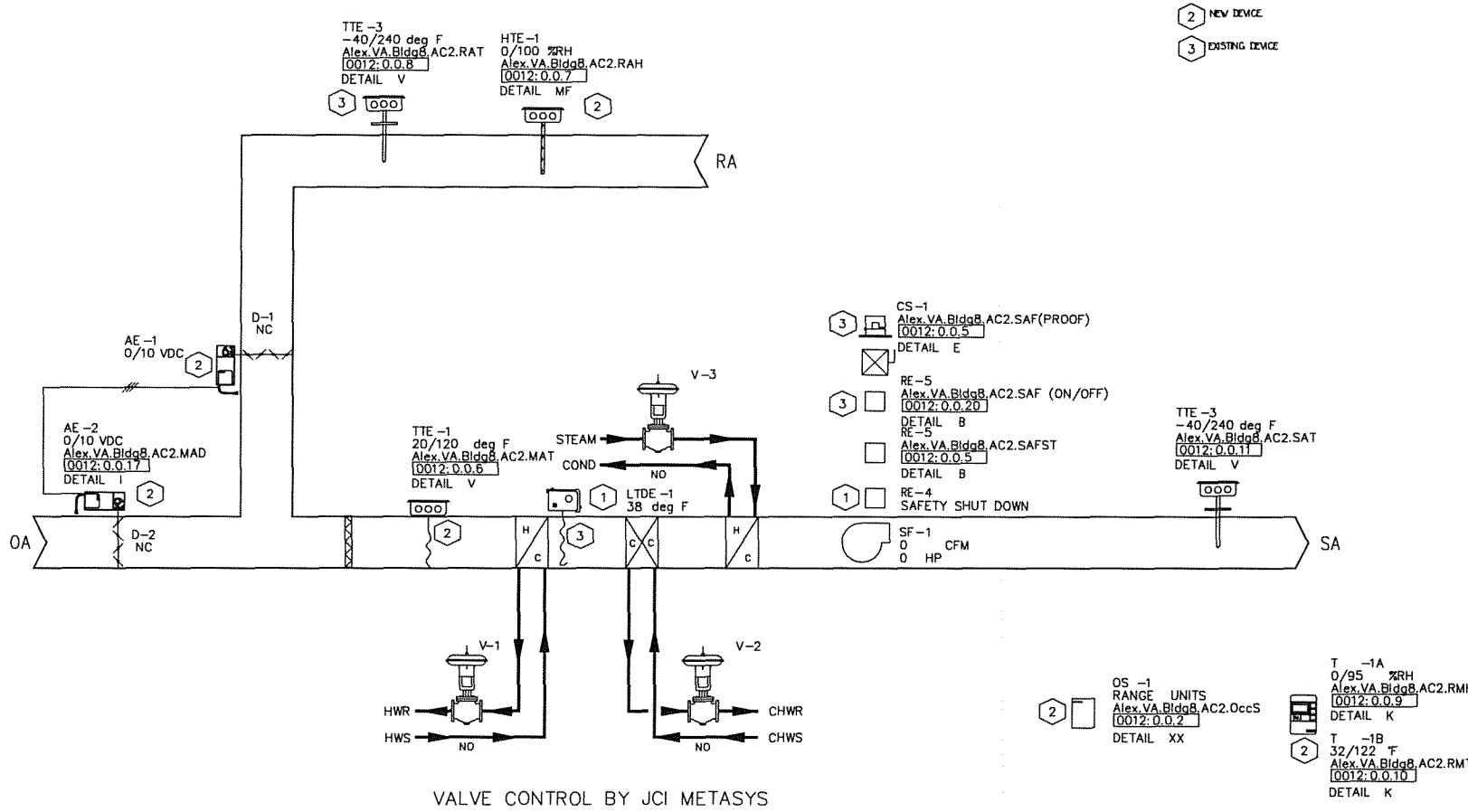
INSTALLATION NOTES:

1. ENSURE DEVICE IS WIRED TO SAFETY CIRCUIT OF FAN/UNIT.
2. NEW DEVICE.
3. EXISTING DEVICE



VALVE CONTROL BY JCI METASYS

REF#	FIELD PANEL NAME	FIELD PANEL NODE NAME
0012	Alex.VA.Bldg8AC2_7802	Alex.VA.Bldg8AC2

REVISION HISTORY

1	4/30/2012	DMP	AS BUILT DRAWING

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VA MEDICAL CTR RETRO
ALEXANDRIA, LA

ENGINEER	DRAFTER	CHECKED BY	INITIAL RELEASE	LAST EDIT DATE
			05/01/11	04/30/12

BLDG 8: AC-2

440P-081912

802

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Control Device	Qty	Product Number	Manufacturer	Document Number	Description
Field Mounted Devices					
AE 1-2	2	GCA161.1U	SIEMENS	154001	MOD(V) SR,24V, MED.
CS 1	1	H609	VERIS	1006cut016	Current Switch,Split-Core,Adj,N.O.,120V
D					SEE DAMPER SUBMITTAL
ES 1-2	2	PK-1200	REED	0401cut001	DAMPER END SW,BLADE ACTUATED
HTE 1	1	538 893	N/A	N/A	N/A
LTDE 1	1	134-1504	SIEMENS	155 016	T'STAT, LOW TEMP,15/55,MANUAL
OS 1	1	WS-250-I	N/A	N/A	N/A
RE 4-5	2	RIBU1C	FUNCTIONAL DEVICES	1208cut013	RIB 120VAC 24VAC/DC SPDT
SF 1	1	N/A	N/A	N/A	N/A
T 1A	1	QFA2060.FBU	SIEMENS	149479	RM RHT 5%, VDC, FF, BEG, SL
T 1B	1	N/A	N/A	N/A	N/A
TTE 1	1	544-342-24	SIEMENS	149261	FLEX AVER SNSR, PT 1K OHM, 24FT PROBE
TTE 3	1	544-339-18	SIEMENS	149261	DCT PT SNSR, PT 1K OHM, (375), 18" PROBE
V					SEE VALVE SUBMITTAL

The constant volume air handling unit consists of a mixed air section with outdoor air and return air dampers, pre-filter, preheat hot water heating coil, chilled water cooling coil, preheat hot water heating coil and supply fan. The unit is DDC controlled using electric actuation.

The air handling unit is scheduled for automatic operation on a time of day basis for Occupied and Unoccupied modes. Within the Occupied mode, the system can enter the Warm-Up mode when the space temperature is below set point or the Cool-Down mode when the space temperature is above set point. The system stays in the Warm-Up or Cool-Down mode until the mode set point is satisfied. Within the Unoccupied mode, Night Heating is available when the space temperature drops below 65 degrees F (18 degrees C). The latest start time is the scheduled occupancy for the space.

The air handling unit operates in Warm-Up, Cool-Down, Occupied, Unoccupied, Night Heating and Safety modes as follows (All suggested set points and settings are adjustable.):

Warm-Up
The supply fan starts, the mixing dampers are positioned for 100% return air and the preheat hot water heating coil & cooling coil valve remains closed. The heating coil valve modulates to maintain the supply air temperature set point. If time reaches the latest start time during the Warm-Up mode, the outdoor air damper opens to its minimum position.

The system is prevented from entering the Warm-Up mode more than once per day.

Cool-Down
The supply fan starts and the pre-heat coil and heating coil valve remains closed. The cooling coil valve and the mixing dampers modulate to maintain the supply air temperature set point. When the outside air dry bulb temperature is above the economizer changeover value, the mixing dampers are positioned for 100% return air. If time reaches the latest start time during the Cool-Down mode, the outdoor air damper opens to its minimum position or is controlled in economizer operation. The system is prevented from entering the Cool-Down mode more than once per day.

Occupied
The supply air temperature set point is reset based on the room temperature set point.

The fan starts or continues to run and the unit is controlled as follows:

When the outside air dry bulb temperature is below the economizer changeover value, the preheating coil, heating coil valve, cooling coil valve and mixed air dampers modulate in sequence without overlap to maintain the supply air temperature set point with a low limit of 48 degrees F (9 degrees C) at the mixed air sensor. The mixing dampers ramp open slowly to minimize overshooting.

When the outside air dry bulb temperature is above the economizer changeover value, the mixing dampers are placed in the minimum outdoor air position. The pre-heating coil, heating coil valve and cooling coil valve modulate in sequence without overlap to maintain the supply air temperature set point.

Unoccupied (Normal Off)
The supply fan stops, the cooling coil valve closes and the mixing dampers close to the outdoor air. If the OAT is less than 45 degrees F (7 degrees C), the heating coil valve modulates to maintain the unoccupied supply air set point. If the OAT is 45 degrees F (7 degrees C) or above, the heating coil valve closes.

Night Heating
The supply fan starts with the heating coil valve open to maintain a minimum space temperature of 65 degrees F (18 degrees C). The cooling coil valve is closed and the mixing dampers close to the outdoor air.

Safety
Smoke detectors in the supply and return air streams de-energize the supply fan upon activation. When the OAT is less than 45 degrees F (7 degrees C), the heating coil valve modulates to maintain the mixed air temperature at 45 degrees F (7 degrees C). When the OAT is 45 degrees F (7 degrees C) or above, the heating coil valve closes. All other dampers and valves position to their normal position after the fan is de-energized.

A low temperature detector in the discharge of the heating coil de-energizes the supply fan when temperatures below 38 degrees F (3 degrees C) are sensed. The heating coil valve modulates to maintain the mixed air temperature at 45 degrees F (7 degrees C). All other dampers and valves position to their normal position after the fans are de-energized.

A current switch is installed in the supply fan starter. The DDC system uses this switch to confirm the fan is in the desired state (i.e. on or off) and generates an alarm if status deviates from DDC start/stop control.

REVISION HISTORY

1	4/30/2012	DMP	AS BUILT DRAWING

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VA MEDICAL CTR RETRO
ALEXANDRIA, LA

ENGINEER	DRAFTER	CHECKED BY	INITIAL RELEASE	LAST EDIT DATE
				05/12/11

BLDG 8: AC-2

440P-081912
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802A

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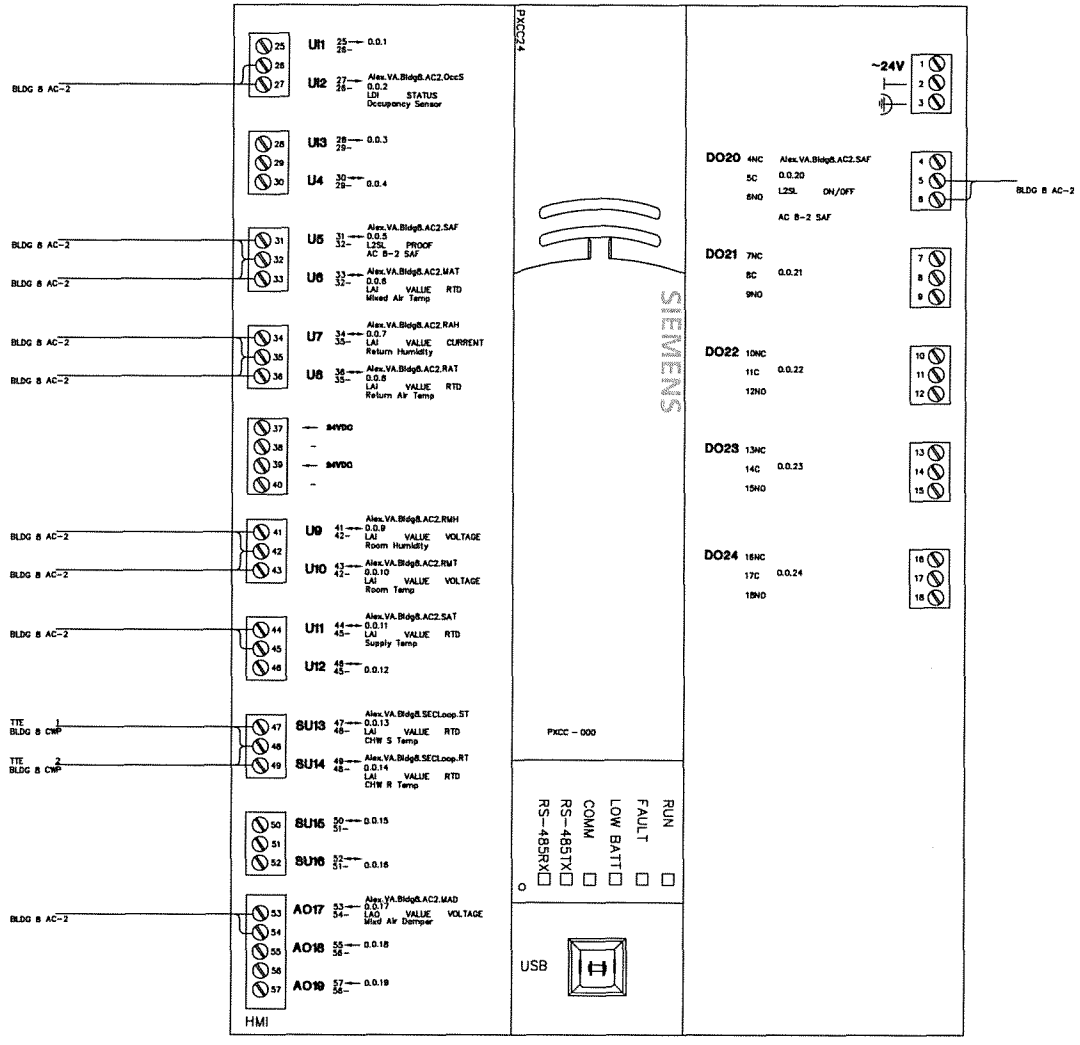

REVISION HISTORY

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ALEXANDRIA, LA

ENGINEER	DRAFTER	CHECKED BY	INITIAL RELEASE	LAST EDIT DATE
			05/01/11	04/24/12

Bldg 8: AC-2

44OP-081912
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802B

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