

# PACKAGED ROOFTOP UNITS (EXCEPT RTU-7)

## POINTS LIST

POINT DESCRIPTION	ANALOG		BINARY		STATE	ALARM	
	IN	OUT	IN	OUT		HIGH	LOW
SUPPLY AIR TEMPERATURE	X	X				X	X
SUPPLY AIR RELATIVE HUMIDITY	X	X				X	X
RETURN AIR TEMPERATURE	X						
RETURN AIR RELATIVE HUMIDITY	X					X	
RETURN AIR DAMPER POSITION	X						
OUTDOOR AIR TEMPERATURE	X						
OUTDOOR AIR RELATIVE HUMIDITY	X						
OUTDOOR AIR DAMPER POSITION	X						
FAN STATUS			X		X		
DUCT SMOKE DETECTOR			X		X		
UNIT MODE (HEAT/COOL)			X				
UNIT STATUS			X	X			
CO2 LEVEL	X					X	

### Notes:

1. Rooftop unit sequence controlled by onboard control units. Packaged unit controls to interface with Building Management System via BACnet interface card.
2. All existing sensors to be replaced with new sensors.
3. Limited range adjustable thermostats to be provided for limited occupant space temperature control.



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DRAWN BY: JJH
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DOCUMENT DATE: 5/11/2020
PROJECT NO.: 101248

**CITY OF CEDAR RAPIDS**  
**Imon ICE ARENA INFRASTRUCTURE**  
**IMPROVEMENTS**  
 CEDAR RAPIDS, IOWA  
 PROJECT # #PUR0420-191-CIP #555085

SHEET: REV:

SD-01

# ROOFTOP UNIT 7 (RTU-7)

## POINTS LIST

POINT DESCRIPTION	ANALOG		BINARY		ALARM		
	IN	OUT	IN	OUT	STATE	HIGH	LOW
SUPPLY AIR TEMPERATURE	X	X				X	X
SUPPLY AIR RELATIVE HUMIDITY	X	X				X	X
RETURN AIR TEMPERATURE	X						
RETURN AIR RELATIVE HUMIDITY	X					X	
RETURN AIR DAMPER POSITION	X						
OUTDOOR AIR TEMPERATURE	X						
OUTDOOR AIR RELATIVE HUMIDITY	X						
OUTDOOR AIR DAMPER POSITION	X						
EXHAUST AIR FAN STATUS			X		X		
SUPPLY AIR FAN STATUS			X		X		
ENERGY RECOVERY WHEEL STATUS			X		X		
DUCT SMOKE DETECTOR			X		X		
CO2 LEVEL	X					X	
UNIT STATUS			X	X	X		

### Notes:

1. Rooftop unit sequence controlled by onboard control units. Packaged unit controls to interface with Building Management System via BACnet interface card.
2. All existing sensors to be replaced with new sensors.
3. Limited range adjustable thermostats to be provided for limited occupant space temperature control.



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SHEET: REV:

SD-02

DESSICANT AIR HANDLER, AHU-11

POINTS LIST

POINT DESCRIPTION	ANALOG		BINARY		STATE	ALARM	
	IN	OUT	IN	OUT		HIGH	LOW
SUPPLY AIR TEMPERATURE	X	X				X	X
SUPPLY AIR RELATIVE HUMIDITY	X	X				X	X
SUPPLY AIR FAN STATUS			X		X		
RETURN AIR TEMPERATURE	X					X	
RETURN AIR RELATIVE HUMIDITY	X					X	
RETURN AIR FILTER DIFFERENTIAL PRESSURE	X					X	
RETURN AIR DAMPER POSITION	X						
OUTDOOR AIR TEMPERATURE	X						
OUTDOOR AIR RELATIVE HUMIDITY	X						
OUTDOOR AIR DAMPER POSITION	X						
OUTDOOR AIR FILTER DIFFERENTIAL PRESSURE	X					X	
EXHAUST AIR FILTER DIFFERENTIAL PRESSURE	X					X	
ENERGY RECOVERY WHEEL STATUS			X		X		
EXHAUST FAN STATUS			X		X		
INTERMEDIATE FILTER DIFFERENTIAL PRESSURE	X					X	
DESSICANT DEHUMIDIFICATION WHEEL STATUS			X		X		
REACTIVATION PRE-FILTER DIFFERENTIAL PRESSURE	X				X		
REACTIVATION FAN STATUS			X		X		
DUCT SMOKE DETECTOR			X		X		
CO2 DETECTOR	X					X	
UNIT STATUS			X	X	X		

Notes:

1. Rooftop unit sequence controlled by onboard control units. Packaged unit controls to interface with Building Management System via BACnet interface card.
2. All existing sensors to be replaced with new sensors.



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SHEET: REV:

SD-03

# DESSICANT AIR HANDLER, AHU-12 AND AHU-13

## POINTS LIST

POINT DESCRIPTION	ANALOG		BINARY		STATE	ALARM	
	IN	OUT	IN	OUT		HIGH	LOW
SUPPLY AIR TEMPERATURE	X	X				X	X
SUPPLY AIR RELATIVE HUMIDITY	X	X				X	X
SUPPLY AIR FAN STATUS			X		X		
SUPPLY AIR BYPASS DAMPER POSITION	X						
RETURN AIR TEMPERATURE	X					X	
RETURN AIR RELATIVE HUMIDITY	X					X	
RETURN AIR FILTER DIFFERENTIAL PRESSURE	X					X	
RETURN AIR DAMPER POSITION	X						
OUTDOOR AIR TEMPERATURE	X						
OUTDOOR AIR RELATIVE HUMIDITY	X						
OUTDOOR AIR DAMPER POSITION	X						
OUTDOOR AIR FILTER DIFFERENTIAL PRESSURE	X					X	
REGENERATION AIR FILTER DIFFERENTIAL PRESSURE	X					X	
ENERGY RECOVERY WHEEL STATUS			X		X		
EXHAUST FAN STATUS			X		X		
EXHAUST AIR DAMPER POSITION	X						
INTERMEDIATE FILTER DIFFERENTIAL PRESSURE	X					X	
DESSICANT DEHUMIDIFICATION WHEEL STATUS			X		X		
REGENERATION DAMPER POSITION	X						
DUCT SMOKE DETECTOR			X		X		
CO2 DETECTOR	X					X	
UNIT STATUS			X	X	X		

### Notes:

1. Rooftop unit sequence controlled by onboard control units. Packaged unit controls to interface with Building Management System via BACnet interface card.
2. All existing sensors to be replaced with new sensors.



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SHEET: REV:

SD-04

# WATER COOLED CHILLERS

## POINTS LIST

POINT DESCRIPTION	ANALOG		BINARY		ALARM		
	IN	OUT	IN	OUT	STATE	HIGH	LOW
COMPRESSOR #1 STATUS			X		X		
COMPRESSOR #2 STATUS			X		X		
BRINE PUMP STATUS			X	X	X		
CHILLER CAPACITY	X						
BRINE SUPPLY TEMPERATURE	X	X				X	X
BRINE RETURN TEMPERATURE	X						
ICE SURFACE TEMPERATURE	X					X	X
COMPRESSOR LOW SUCTION PRESSURE	X						X
COMPRESSOR LOW DIFFERENTIAL PRESSURE	X						X
COMPRESSOR LOCKOUT			X		X		
CHILLER #1 STATUS			X	X	X		
CHILLER #2 STATUS			X	X	X		

Notes:

1. Water cooled chiller sequence controlled by onboard control units. Packaged unit controls to interface with Building Management System via BACnet interface card.
2. All existing sensors to be replaced with new sensors.
3. Water cooled chiller sequence to synchronize with cooling tower sequence.



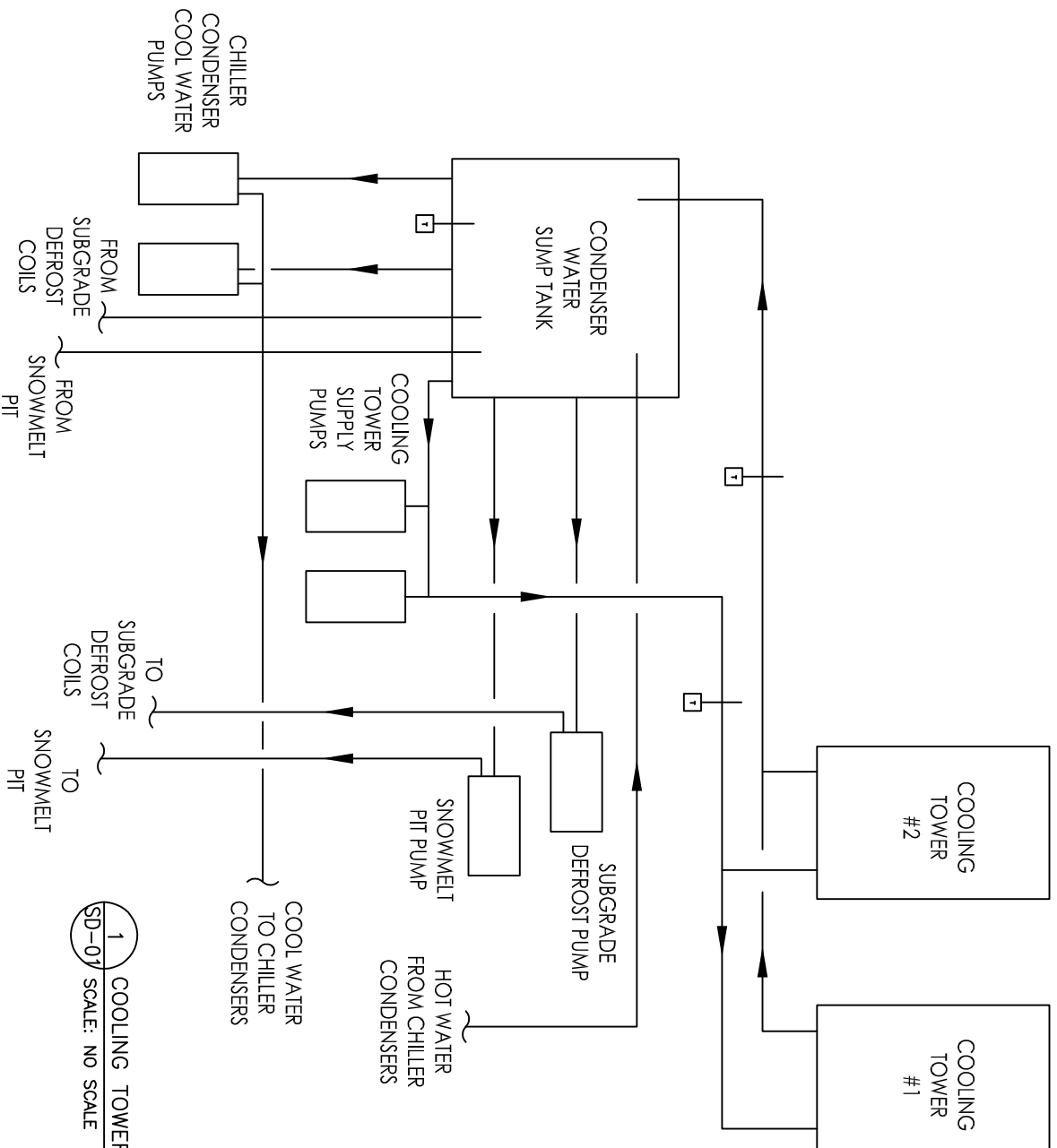
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1 COOLING TOWER AND CONDENSER WATER SCHEMATIC  
SD-07 SCALE: NO SCALE



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SHEET:

SD-06

REV:

# COOLING TOWERS

## POINTS LIST

POINT DESCRIPTION	ANALOG		BINARY		STATE	ALARM	
	IN	OUT	IN	OUT		HIGH	LOW
CONDENSER WATER IN TEMPERATURE	X	X				X	X
CONDENSER WATER OUT TEMPERATURE	X	X					X
COOLING TOWER #1 STATUS			X	X		X	
COOLING TOWER #2 STATUS			X	X		X	
CONDENSER WATER PUMP #1 STATUS			X	X		X	
CONDENSER WATER PUMP #2 STATUS			X	X		X	
SUMP MIXED CONDENSER WATER TEMPERATURE	X					X	X

### Notes:

- Cooling tower sequence controlled by onboard control units. Packaged unit controls to interface with Building Management System via BACnet interface card.
- All existing sensors to be replaced with new sensors.
- Cooling tower operation to synchronize with water cooled chiller sequence.



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SD-07

PUMPS

POINTS LIST

POINT DESCRIPTION	ANALOG		BINARY		ALARM		
	IN	OUT	IN	OUT	STATE	HIGH	LOW
SUBGRADE DEFROST PUMP STATUS			X	X	X		
SNOWMELT PIT PUMP STATUS			X	X	X		

Notes:

1. Pumps are constant volume.

EXHAUST FANS (4)

POINTS LIST

POINT DESCRIPTION	ANALOG		BINARY		ALARM		
	IN	OUT	IN	OUT	STATE	HIGH	LOW
EXHAUST FAN STATUS			X	X	X		
CO2 LEVEL	X					X	

Notes:

- Existing exhaust fans are to be operated either manually or remotely.
- CO2 sensors are new to be installed in areas where existing exhaust fans serve.

UNIT HEATERS (2)

POINTS LIST

POINT DESCRIPTION	ANALOG		BINARY		ALARM		
	IN	OUT	IN	OUT	STATE	HIGH	LOW
UNIT HEATER STATUS			X	X	X		



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SD-08

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