



BUILDING WITH F	LANT AND	IMPORT FI	ROM/EXPOR	T TO CA

POINT DESCRIPTION FIELD DEVICE DESCRIPTION DESCRIPTION TYPE UNITS INSTRUMENT TYPE SIGNAL RANGE NOTES GLOBAL POINTS (TO BE MAPPED TO UNIT CONTROLLER) - - NETWORK SHARED) - NETWORK SHARED) OUTSDE AR EVER TUBE TEMP TEMP * MAP BUILDING GLOBAL OUTDOOR AR FLMANDTY - NETWORK SHARED) OUTSDE AR EVER TUBE TEMP TEMP * MAP BUILDING GLOBAL OUTDOOR AR FLMANDTY - NETWORK SHARED) OUTSDE AR EVER TUBE TEMP TEMP * MAP BUILDING GLOBAL OUTDOOR AR HUMANDTY - NETWORK SHARED) OUTSDE AR EVER TUBE TEMP TEMP * RIGID PLATMUN RTD MOUNTED IN THERMOVELL NETWORK SHARED) DOUTSDE ART MERETATURE TEMP * RIGID PLATMUN RTD MOUNTED IN THERMOVELL C220* DULONG CHW STUPHY TEMPERATURE TEMP * RIGID PLATMUN RTD MOUNTED IN THERMOVELL C220* SECONDARY CHW STUPHY TEMPERATURE TEMP * RIGID PLATMUN RTD MOUNTED IN THERMOVELL RESISTANCE C220* BULDING CHW RETURE TEMPERATURE TEMP * RIGID PLATMUN RTD MOUNTED	BUILDING WITH PLANT AND IMPORT FROM/EXPORT TO CAMPUS LOOP						
DESCRIPTION TYPE UNITS INSTRUMENT TYPE SIGNAL RANGE NOTES GLOBAL POINTS (TO BE MAPPED TO UNIT CONTROLLER) OUTSIDE ART RELATIVE OUTSIDE ART RELATIVE DUTSIDE ART RELATIVE RELATIVE BULE TEMPERATURE TEMP 'F MAP BULDING GLOBAL OUTDOOR AIR TEMP. · · NETWORK SHARED OUTSIDE ART RELATIVE OUTSIDE ART RELATIVE DUTSIDE ART RELATIVE DUTSIDE ART RELATIVE DUTSIDE ART RELATIVE RELATIVE BULE TEMPERATURE TEMP 'F MAP BULDING GLOBAL OUTDOOR AIR WET BULE DUTSIDE ART MET BULE TEMPERATURE · NETWORK SHARED SECONDARY CHW SUPPLY TEMPERATURE TEMP 'F RIGID PLATINA INTO MOLITED IN TERMENVELLL RESISTANCE 0· 220'F BULDING CHW SUPPLY TEMPERATURE TEMP 'F RIGID PLATINA INTO MOLITED IN TERMENVELL RESISTANCE 0· 220'F BULDING CHW SUPPLY TEMPERATURE TEMP 'F RIGID PLATINA INTO MOLITED IN TERMENVELL RESISTANCE 0· 220'F SECONDARY CHW RETURN TEMPERATURE TEMP 'F RIGID PLATINA INTO MOLITED IN TERMENVELL RESISTANCE 0· 220'F BULDING CHW RETURN TEMPERATURE TEMP 'F RIGID PLATINA INTO MOLITED IN TERMENVELL RESISTANCE 0· 220'F GUNCH RETURN TEMPERATURE TEMP 'F RIGID PLATINA RTD MOLITED IN	POINT DESCRIPTION			FIELD DEVICE DESCRIPT	ON		
GLOBAL POINTS (TO BE MAPPED TO UNIT CONTROLLER) TEMP. TEM	DESCRIPTION	TYPE	UNITS	INSTRUMENT TYPE	SIGNAL	RANGE	NOTES
DUISDE AR TEMP TEMP F MAP BUILDING GLOBAL OUTDOOR AR TEMP - - NETWORK SHARED OUTSIDE AR WELT BULD TEMPERATURE TEMP TEMP YF MAP BUILDING GLOBAL OUTDOOR AR WETBULE - - NETWORK SHARED OUTSIDE AR WET BULD TEMPERATURE TEMP YF MAP BUILDING GLOBAL OUTDOOR AR WETBULE - NETWORK SHARED SECONDARY CHM SUPPLY TEMPERATURE TEMP YF RIGD PLATNUM RTD MOUNTED IN THERMORELL RESISTANCE 0 - 220'F PRIMARY CHM SUPPLY TEMPERATURE TEMP YF RIGD PLATNUM RTD MOUNTED IN THERMORELL RESISTANCE 0 - 220'F BULDING CHW RETURN TEMPERATURE TEMP YF RIGD PLATNUM RTD MOUNTED IN THERMORELL RESISTANCE 0 - 220'F SECONDARY CHW RETURN TEMPERATURE TEMP YF RIGD PLATNUM RTD MOUNTED IN THERMORELL RESISTANCE 0 - 220'F BULDING CHW RETURN TEMPERATURE TEMP YF RIGD PLATNUM RTD MOUNTED IN THERMORELL RESISTANCE 0 - 220'F SECONDARY CHW RETURN TEMPERATURE TEMP YF RIGD PLATNUM RTD MOUNTED IN THERMORELL RESISTANCE 0 - 220'F BULDIN	GLOBAL POINTS (TO BE MAPPED TO UNIT CONTROLLER)					
OUTSIDE AR RELATIVE HUMDITY HUMDITY HUMDITY Y HM MAP BULLING GLOBAL OUTDOOR AR WET BULB . INETWORK SHARED PLANT/BUILLING GLOBAL OUTDOOR AR WET BULB TEMP YF RIGID PLATINUM RTO MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F PRIMARY CHW SUPPLY TEMPERATURE TEMP YF RIGID PLATINUM RTO MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F BULDING CHW SUPPLY TEMPERATURE TEMP YF RIGID PLATINUM RTO MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F BULDING CHW SUPPLY TEMPERATURE TEMP YF RIGID PLATINUM RTO MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F BULDING CHW RETURN TEMPERATURE TEMP YF RIGID PLATINUM RTO MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F SECONDARY CHW RETURN TEMPERATURE TEMP YF RIGID PLATINUM RTO MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F BULDING CHW RETURN TEMPERATURE TEMP YF RIGID PLATINUM RTO MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F BULDING CHW RETURN TEMPERATURE TEMP YF RIGID PLATINUM RTO MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F	OUTSIDE AIR TEMP.	TEMP.	٥F	MAP BUILDING GLOBAL OUTDOOR AIR TEMP.	-	-	NETWORK SHARED POINT
OUTSIDE AIR WET BUILS TEMPERATURE TEMP PF MAP BUILDING LEVEL - NETWORK SHARED SECONDARY CHW SUPPLY TEMPERATURE TEMP *F RIGD PLATNUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220*F DOP CHW SUPPLY TEMPERATURE TEMP *F RIGD PLATNUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220*F SECONDARY CHW SETURIT TEMPERATURE TEMP *F RIGD PLATNUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220*F SECONDARY CHW RETURIN TEMPERATURE TEMP *F RIGD PLATNUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220*F SECONDARY CHW RETURIN TEMPERATURE TEMP *F RIGD PLATNUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220*F SECONDARY CHW RETURIN TEMPERATURE TEMP *F RIGD PLATNUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220*F SECONDARY CHW RETURIN TEMPERATURE TEMP *F RIGD PLATNUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220*F SECONDARY CHW RETURIN TEMPERATURE TEMP *F RIGD PLATNUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220*F BULDING CHW FLWN LAND SEGONDARY CHW RETURIN TEMP		HUMIDITY	% RH	MAP BUILDING GLOBAL OUTDOOR AIR HUMIDITY	-	_	NETWORK SHARED POINT
PLANT/BUILDING LEVEL CONTROL POINTS FEMP 'F RIGID PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F PRIMARY CHW SUPPLY TEMPERATURE TEMP 'F RIGID PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F BUILDING CHW SUPPLY TEMPERATURE TEMP 'F RIGID PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F BUILDING CHW SUPPLY TEMPERATURE TEMP 'F RIGID PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F SECONDARY CHW RETURN TEMPERATURE TEMP 'F RIGID PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F BUILDING CHW RETURN TEMPERATURE TEMP 'F RIGID PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F BUILDING CHW RETURN TEMPERATURE TEMP 'F RIGID PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F GHW HCW: PLART TEMPERATURE TEMP 'F RIGID PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F BUILDING CHW WETURN TEMPERATURE TEMP 'F RIGID PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 20'F CHM FLW WETURN TEM	 OUTSIDE AIR WET BULB TEMPERATURE	TEMP	°F	MAP BUILDING GLOBAL OUTDOOR AIR WET BULB	-	_	NETWORK SHARED POINT
SECONDAY CHW SUPPLY TEMPERATURE TEMP "F RIGD PLATNUM RTD MOUNTED M THERNOWELL RESISTANCE 0 - 20'F LOOP CHW SUPPLY TEMPERATURE TEMP "F RIGD PLATNUM RTD MOUNTED M THERNOWELL RESISTANCE 0 - 20'F LOOP CHW SUPPLY TEMPERATURE TEMP "F RIGD PLATNUM RTD MOUNTED M THERNOWELL RESISTANCE 0 - 20'F SECONDARY CHW RETURN TEMPERATURE TEMP "F RIGD PLATNUM RTD MOUNTED M THERNOWELL RESISTANCE 0 - 20'F SECONDARY CHW RETURN TEMPERATURE TEMP "F RIGD PLATNUM RTD MOUNTED M THERNOWELL RESISTANCE 0 - 20'F SECONDARY CHW RETURN TEMPERATURE TEMP "F RIGD PLATNUM RTD MOUNTED M THERNOWELL RESISTANCE 0 - 20'F SECONDARY CHW RETURN TEMPERATURE TEMP "F RIGD PLATNUM RTD MOUNTED N THERNOWELL RESISTANCE 0 - 20'F BULDING CHW RETURN TEMPERATURE TEMP "F RIGD PLATNUM RTD MOUNTED N THERNOWELL RESISTANCE 0 - 20'F GCMW FLOW - PLANT SUPPLY PIPING FLOWMETER GPM ULTRASONC STRAP-ON FLOWMETER 0 + 10 VDC SEE SEQ CHW FLOW - PLANT SUPPLY PIPING FLOWMETER <td> PLANT/ BUILDING LEVEL CONTROL POINTS</td> <td></td> <td>-</td> <td></td> <td>I</td> <td></td> <td></td>	 PLANT/ BUILDING LEVEL CONTROL POINTS		-		I		
PRIMARY CHW SUPPLY TEMERATURE TEMP "F RIGID PLATINUM RTD MOUNTED NI "HERMOWELL RESISTANCE 0 - 220"F BUILDING CHW SUPPLY TEMERATURE TEMP "F RIGID PLATINUM RTD MOUNTED NI "HERMOWELL RESISTANCE 0 - 220"F SECONDARY CHW RETURN TEMPERATURE TEMP "F RIGID PLATINUM RTD MOUNTED NI "HERMOWELL RESISTANCE 0 - 220"F SECONDARY CHW RETURN TEMPERATURE TEMP "F RIGID PLATINUM RTD MOUNTED NI "HERMOWELL RESISTANCE 0 - 220"F LIODO CHW RETURN TEMPERATURE TEMP "F RIGID PLATINUM RTD MOUNTED NI "HERMOWELL RESISTANCE 0 - 220"F BUILDING CHW RETURN TEMPERATURE TEMP "F RIGID PLATINUM RTD MOUNTED NI "HERMOWELL RESISTANCE 0 - 220"F CHW FLOW -LOOP SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0 10 VOC SEE SEQ CHW FLOW -LANT SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0 10 VOC SEE SEQ CHW FLOW -PLANT STATUS ON / OFF ON / OFF CM / OFF	SECONDARY CHW SUPPLY TEMPERATURE	TEMP	°F	RIGID PLATINUM RTD MOUNTED IN THERMOWELL	RESISTANCE	0 - 220°F	
LOOP CHW SUPPLY TEMPERATURE TEMP "F RIGID PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220°F SECONDARY CHW RETURN TEMPERATURE TEMP "F RIGID PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220°F SECONDARY CHW RETURN TEMPERATURE TEMP "F RIGID PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220°F LOOP CHW RETURN TEMPERATURE TEMP "F RIGID PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220°F LOOP CHW FUND <temperature< td=""> TEMP "F RIGID PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220°F BUILDING CHW FEURIN TEMPERATURE TEMP "F RIGID PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220°F CHW FLOW - PLANT SUPPLY PIPING FLOWMETER OPM ULTRASONIC STRAP-ON FLOWMETER 0 - 1000C SEE SEQ CHW FLOW - PLANT SUPPLY PIPING FLOWMETER OPM ULTRASONIC STRAP-ON FLOWMETER 0 - 1000C SEE SEQ CHILER CONTROL AVELL RESISTANCE 0 - 200°F ONT OFF O</temperature<>	PRIMARY CHW SUPPLY TEMPERATURE	TEMP	°F	RIGID PLATINUM RTD MOUNTED IN THERMOWELL	RESISTANCE	0 - 220°F	
BUILDING CHW SUPPLY TEMPERATURE TEMP 'F RIGD PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F SECONDARY CHW RETURN TEMPERATURE TEMP 'F RIGD PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F LOOP CHW RETURN TEMPERATURE TEMP 'F RIGD PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F BUILDING CHW RETURN TEMPERATURE TEMP 'F RIGD PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F BUILDING CHW RETURN TEMPERATURE TEMP 'F RIGD PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0 - 220'F CHW FLOW - PLANT SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0 - 10 VDC SEE SED CHW FLOW - PLANT SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0 - 10 VDC SEE SED CHW FLOW - PLANT SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0 - 10 VDC SEE SED CHW FLOW - PLANT SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0 - 10 VDC SEE SED CHW FLOW RUDS SUPPLY PIPING FLOWMETER </td <td> LOOP CHW SUPPLY TEMPERATURE</td> <td>TEMP</td> <td>°F</td> <td>RIGID PLATINUM RTD MOUNTED IN THERMOWELL</td> <td>RESISTANCE</td> <td>0 - 220°F</td> <td></td>	 LOOP CHW SUPPLY TEMPERATURE	TEMP	°F	RIGID PLATINUM RTD MOUNTED IN THERMOWELL	RESISTANCE	0 - 220°F	
SECONDARY CHW RETURN TEMPERATURE TEMP 'F RIGID PLATINUM RTD MOUNTED IN THERMOVELL RESISTANCE 0.20°F LOOP CHW RETURN TEMPERATURE TEMP 'F RIGID PLATINUM RTD MOUNTED IN THERMOVELL RESISTANCE 0.20°F BUILDING CHW RETURN TEMPERATURE TEMP 'F RIGID PLATINUM RTD MOUNTED IN THERMOVELL RESISTANCE 0.20°F CHW FLOW - PLANT BYPASS LEG FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0.10 VOC SEE SEQ CHW FLOW - PLANT SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0.10 VOC SEE SEQ CHW FLOW - PLANT BUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0.10 VOC SEE SEQ CHW FLOW - PLANT BLOS SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0.10 VOC SEE SEQ CHILLER RUN STATUS ON / OFF	BUILDING CHW SUPPLY TEMPERATURE	TEMP	°F	RIGID PLATINUM RTD MOUNTED IN THERMOWELL	RESISTANCE	0 - 220°F	
SECONDARY OHW RETURN TEMPERATURE TEMP YF RIGID PLATINUM RTD MOLINTED IN THERMOWELL RESISTANCE 0 - 220'F BUILDING CHW RETURN TEMPERATURE TEMP YF RIGID PLATINUM RTD MOLINTED IN THERMOWELL RESISTANCE 0 - 220'F CHW FLOW - PLANT BYPASS LGG FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0 10 VDC SEE SEQ CHW FLOW - LOOP SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0 10 VDC SEE SEQ CHW FLOW - PLANT BUPSAY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0 10 VDC SEE SEQ CHW FLOW - PLANT BLOG SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0 10 VDC SEE SEQ CHW FLOW - PLANT BLOG SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0 10 VDC SEE SEQ CHW FLOW - PLANT BLOG SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0 10 VDC SEE SEQ CHULED WATER TWIN STATUS ON / OFF ON / OFF<	 SECONDARY CHW RETURN TEMPERATURE	TEMP	°F	RIGID PLATINUM RTD MOUNTED IN THERMOWELL	RESISTANCE	0 - 220°F	
LOOP CHW RETURN TEMPERATURE TEMP 'F RIGID PLATINUM RTO MOUNTED IN 'THERMOWELL RESISTANCE 0 - 220'F BUILDING CHW RETURN TEMPERATURE TEMP 'F RIGID PLATINUM RTO MOUNTED IN 'THERMOWELL RESISTANCE 0 - 220'F CHW FLOW - PLANT BYPASS LEG FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SEQ CHW FLOW - PLANT BUPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SEQ CHW FLOW - PLANT BLIGS SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SEQ CHW FLOW - PLANT BLIGS SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SEQ COYD CHW PUMP STATUS ON / OFF ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - BUILDING CHW PUMP STATUS ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - CHILEE WATER PUMP 3 STATUS ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - CHILED WATER PUMP 3 STATUS OFF / ON	 SECONDARY CHW RETURN TEMPERATURE	TEMP	°F	RIGID PLATINUM RTD MOUNTED IN THERMOWELL	RESISTANCE	0 - 220°F	
BUILDING CHW RETURN TEMPERATURE TEMP *F RIGID PLATINUM RTD MOUNTED IN THERMOWELL RESISTANCE 0.220°F CHW FLOW - NATH BYASS LEG FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SEQ CHW FLOW - PLANT SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SEQ CHW FLOW - PLANT SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SEQ CHW FLOW - PLANT SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SEQ CHW FLOW - PLANT SUPSLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SEQ CHUER VANDAWE MERT ON OFF ON / OFF ON / OFF CONTROL PAREL 0-10 VDC SEE SEQ LOOP CHW PUMP MER NN STATUS ON OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - BULDING CHW PUMP # STATUS ONF / ON OFF / ON CHILLED WATER PUMP, RUN STATUS OFF / ON OFF / ON CHILLED WATER PUMP, RUN STATUS CONTACT - CHILLED WAT	LOOP CHW RETURN TEMPERATURE	TEMP	°F	RIGID PLATINUM RTD MOUNTED IN THERMOWELL	RESISTANCE	0 - 220°F	
CHW FLAMT BYPASS LEG FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SE0 CHW FLOW - PLANT SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SE0 CHW FLOW - PLANT SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SE0 CHW FLOW - PLANT SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SE0 CHW FLOW - PLANT SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SE0 CHULDS CHW PLANT SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SE0 CHULDS WATER PLANT STATUS ON / OFF ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - BUILDING CHW PUMP PLANT STATUS OFF / ON OFF / ON CHILLED WATER PUMP STATUS CONTACT - CHILLED WATER PUMP 2 STATUS OFF / ON OFF / ON CHILLED WATER PUMP, SENSOR CONTACT - CHILLED WATER PUMP 2 STATUS OFF / ON OFF / ON CHILLED WA	 BUILDING CHW RETURN TEMPERATURE	TEMP	°F	RIGID PLATINUM RTD MOUNTED IN THERMOWELL	RESISTANCE	0 - 220°F	
CHW FLOW - LOOP SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SEQ CHW FLOW - PLANT SUDPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SEQ CHW FLOW - PLANT BLOG SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SEQ CHILLER RUN STATUS ON / OFF ON / OFF ON / OFF CHILLER CONTROL PANEL TO BAS CONTACT - BUILDING CHW PUMP #I RUN STATUS ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - BUILDING CHW PUMP #I RUN STATUS ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - CHILLED WATER PUMP 1 STATUS OFF / ON OFF / ON CHILLED, WATER PUMP, RUN, SENSOR CONTACT - CHILLED WATER PUMP 1 STATIS OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, SENSOR CONTACT - CHILLED WATER PUMP 2 START/STOP OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, CMD CONTACT - CHILLED WATER PUMP 3 START/STOP OFF / ON OFF / ON	 CHW FLOW - PLANT BYPASS LEG	FLOWMETER	GPM	ULTRASONIC STRAP-ON FLOWMETER	0-10 VDC	SEE SEQ	
CHW FLANT SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SEQ CHW FLOW - PLANT BLDG SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SEQ CHUELER RUN STATUS ON / OFF ON / OFF ON / OFF CHILLER CONTROL PANEL TO BAS CONTACT - LOOP CHW PUMP # RUN STATUS ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - BUILDING CHW PUMP # RUN STATUS ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - BUILDING CHW PUMP # RUN STATUS ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - CHILLED WATER PUMP 1 STATUS OFF / ON OFF / ON OFF / ON CONTACT - CHILLED WATER PUMP 1 STATUSTOP OFF / ON OFF / ON OFF / ON CONTACT - CHILLED WATER PUMP 2 STATUSTOP OFF / ON OFF / ON OFF / ON CONTACT - CHILLED WATER PUMP 4 SPEED COMMAND VFD % SPEED CHILLED, WATER, PUMP, RUN, CMD CONTACT	CHW FLOW - LOOP SUPPLY PIPING	FLOWMETER	GPM	ULTRASONIC STRAP-ON FLOWMETER	0-10 VDC	SEE SEQ	
CHW FLOW-PLANT BLOG SUPPLY PIPING FLOWMETER GPM ULTRASONIC STRAP-ON FLOWMETER 0-10 VDC SEE SEQ CHILLER RUN STATUS ON / OFF ON / OFF ON / OFF CONTACT - LOOP CHW PUMP RUN STATUS ON / OFF ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - BUILDING CHW PUMP 41 RUN STATUS ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - BUILDING CHW PUMP 42 RUN STATUS ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - CHILLED WATER PUMP 1STATUS OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, SENSOR CONTACT - CHILLED WATER PUMP 1 STATUS OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, SENSOR CONTACT - CHILLED WATER PUMP 1 STARTISTOP OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, CMD CONTACT - CHILLED WATER PUMP 2 STARTISTOP OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, CMD CONTACT - CHILLED WATER PUMP 4 SPEED COMMAND VFD % SPEED CHILLED, WATER	CHW FLOW - PLANT SUPPLY PIPING	FLOWMETER	GPM	ULTRASONIC STRAP-ON FLOWMETER	0-10 VDC	SEE SEQ	
CHILLER RUN STATUS ON / OFF ON / OFF ON / OFF CHILLER CONTROL PANEL TO BAS CONTACT - LOOP CHW PUMP RUN STATUS ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - BUILDING CHW PUMP #1 RUN STATUS ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - GCHILLED WATER PUMP 13 TATUS ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - CHILLED WATER PUMP 13 TATUS OFF / ON OFF / ON CHILLED.WATER, PUMP, RUN, SENSOR CONTACT - CHILLED WATER PUMP 1 STATUSTOP OFF / ON OFF / ON CHILLED.WATER, PUMP, RUN, CMD CONTACT - CHILLED WATER PUMP 1 STATUSTOP OFF / ON OFF / ON CHILLED.WATER, PUMP, RUN, CMD CONTACT - CHILLED WATER PUMP 1 STATUSTOP OFF / ON OFF / ON CHILLED.WATER, PUMP, RUN, CMD CONTACT - CHILLED WATER PUMP 1 STATUSTOP OFF / ON OFF / ON CHILLED.WATER, PUMP, SPEED. CMM CONTACT - CHILLED WATER PUMP 5 SPEED COMMAND VFD % SPEED CHILLE	CHW FLOW - PLANT BLDG SUPPLY PIPING	FLOWMETER	GPM	ULTRASONIC STRAP-ON FLOWMETER	0-10 VDC	SEE SEQ	
LOOP CHW PUMP RUN STATUS ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - BUILDING CHW PUMP #1 RUN STATUS ON / OFF ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - BUILDING CHW PUMP #2 RUN STATUS ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - CHILLED WATER PUMP 1 STATUS OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, SENSOR CONTACT - CHILLED WATER PUMP 1 STATUS OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, SENSOR CONTACT - CHILLED WATER PUMP 1 STATISTOP OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, CMD CONTACT - CHILLED WATER PUMP 2 START/STOP OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, CMD CONTACT - CHILLED WATER PUMP 2 START/STOP OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, CMD CONTACT - CHILLED WATER PUMP 4 SPEED COMMAND VFD % SPEED CHILLED, WATER, PUMP, SPEED, CMD 4-20 mA 0-100% CHILLED WATER PUMP 4 SPRED COMMAND VFD % SP	CHILLER RUN STATUS	ON / OFF	ON / OFF	CHILLER CONTROL PANEL TO BAS	CONTACT	-	
BUILDING CHW PUMP #1 RUN STATUS ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - BUILDING CHW PUMP #2 RUN STATUS ON / OFF ON / OFF ON / OFF ADJ. THRESHOLD CURRENT SENSING RELAY CONTACT - CHILLED WATER PUMP 1 STATUS OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, SENSOR CONTACT - CHILLED WATER PUMP 2 STATUS OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, SENSOR CONTACT - CHILLED WATER PUMP 2 STATUS OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, SENSOR CONTACT - CHILLED WATER PUMP 4 SPEED COMMAND OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, CMD CONTACT - CHILLED WATER PUMP 4 SPEED COMMAND VFD % SPEED CHILLED, WATER, PUMP, SPEED, CMD 4-20 mA 0-100% CHILLED WATER PUMP 5 SPEED COMMAND VFD % SPEED CHILLED, WATER, PUMP, SPEED, CMD 4-20 mA 0-100% CHILLED WATER PUMP 4 SPEED COMMAND ON / OFF ON / OFF RELAY OUTPUT TO VFD CONTACT - CHILLED WATER PUMP 4 SPEED COMMAND ON / OFF <td< td=""><td>LOOP CHW PUMP RUN STATUS</td><td>ON / OFF</td><td>ON / OFF</td><td>ADJ. THRESHOLD CURRENT SENSING RELAY</td><td>CONTACT</td><td>-</td><td></td></td<>	LOOP CHW PUMP RUN STATUS	ON / OFF	ON / OFF	ADJ. THRESHOLD CURRENT SENSING RELAY	CONTACT	-	
BUILDING CHW PUMP #2 RUN STATUS ON / OFF ON / OFF ADJ, THRESHOLD CURRENT SENSING RELAY CONTACT - CHILLED WATER PUMP 1 STATUS OFF / ON OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, SENSOR CONTACT - CHILLED WATER PUMP 2 STATUS OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, SENSOR CONTACT - CHILLED WATER PUMP 1 START/STOP OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, CMD CONTACT - CHILLED WATER PUMP 2 START/STOP OFF / ON OFF / ON CHILLED, WATER, PUMP, RUN, CMD CONTACT - CHILLED WATER PUMP 3 SPEED COMMAND VFD % SPEED CHILLED, WATER, PUMP, SPEED, CMD 4.20 mA 0-100% CHILLED WATER PUMP 5 SPEED COMMAND VFD % SPEED CHILLED, WATER, PUMP, SPEED, CMD 4.20 mA 0-100% EVAP PUMP STATUS ON / OFF ON / OFF ON / OFF RELAY OUTPUT TO VFD CONTACT - EVAP PUMP VFD SPEED COMMAND VFD % SPEED BAS TO VFD INPUT TERMINAL 4.20 mA 0-100% EVAP PUMP VFD SPEED COMMAND VFD % SPEED	BUILDING CHW PUMP #1 RUN STATUS	ON / OFF	ON / OFF	ADJ. THRESHOLD CURRENT SENSING RELAY	CONTACT	-	
CHILLED WATER PUMP 1 STATUSOFF / ONOFF / ONOFF / ONCHILLED, WATER, PUMP, RUN, SENSORCONTACT-CHILLED WATER PUMP 2 STATUSOFF / ONOFF / ONOFF / ONCHILLED, WATER, PUMP, RUN, SENSORCONTACT-CHILLED WATER PUMP 2 START/STOPOFF / ONOFF / ONOFF / ONCHILLED, WATER, PUMP, RUN, CMDCONTACT-CHILLED WATER PUMP 4 SPEED COMMANDVFD% SPEEDCHILLED, WATER, PUMP, SPEED, CMD4.20 mA0-100%CHILLED WATER PUMP 5 SPEED COMMANDVFD% SPEEDCHILLED, WATER, PUMP, SPEED, CMD4.20 mA0-100%CHILLED WATER PUMP STAT/STOP COMMANDON / OFFON / OFFCHILLED, WATER, PUMP, SPEED, CMD4.20 mA0-100%CHILLED WATER PUMP START/STOP COMMANDON / OFFON / OFFRELAY OUTPUT TO VFDCONTACT-EVAP PUMP VFD SPEED COMMANDON / OFFON / OFFADJ THRESHOLD CURRENT SENSING RELAYCONTACT-EVAP PUMP VFD SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL4.40 mA0-100%EVAP PUMP VFD SEED COMMANDON / OFFON / OFFPUMP VFD ALARMCONTACT-CHW SET-POINT FOR REGULAR CHILLERSIGNAL°FBAS TO CHILLER CONTROL PANEL4.20 mA42-48°FCHW LOOP EXPORT PUMP SPEED COMMANDMODULATING%MODULATING VALVE ACTUATOR2-10 VDC0-100%CHW LOOP EXPORT PUMP SPEED COMMANDON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHW LOOP EXPORT PUMP SPEED COMMANDON / OFFON / OFF<	BUILDING CHW PUMP #2 RUN STATUS	ON / OFF	ON / OFF	ADJ. THRESHOLD CURRENT SENSING RELAY	CONTACT	-	
CHILLED WATER PUMP 2 STATUSOFF / ONOFF / ONOFF / ONCHILLED, WATER, PUMP, RUN, SENSORCONTACT-CHILLED WATER PUMP 1 START/STOPOFF / ONOFF / ONOFF / ONCHILLED, WATER, PUMP, RUN, CMDCONTACT-CHILLED WATER PUMP 4 SPEED COMMANDOFF / ONOFF / ONOFF / ONCHILLED, WATER, PUMP, RUN, CMDCONTACT-CHILLED WATER PUMP 4 SPEED COMMANDVFD% SPEEDCHILLED, WATER, PUMP, SPEED, CMD4-20 mA0-100%CHILLED WATER PUMP 5 SPEED COMMANDVFD% SPEEDCHILLED, WATER, PUMP, SPEED, CMD4-20 mA0-100%CHILLED WATER PUMP 5 SPEED COMMANDVFD% SPEEDCHILLED, WATER, PUMP, SPEED, CMD4-20 mA0-100%EVAP PUMP STAT/STOP COMMANDON / OFFON / OFFRELAY OUTPUT TO VFDCONTACT-EVAP PUMP VFD SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL4-20 mA0-100%EVAP PUMP VFD SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL4-20 mA0-100%EVAP PUMP VFD SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL4-20 mA42 - 48°FCHW SET-POINT FOR REGULAR CHILLERSIGNAL°FBAS TO VFD INPUT TERMINAL4-20 mA42 - 48°FCHW SET-POINT FOR REGULAR CHILLERSIGNAL°FBAS TO VFD INPUT TERMINAL4-10 VDC0-100%CHW LOOP EXPORT PUMP SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL2-10 VDC0-100%CHW LOOP EXPORT PUMP SPEED COMMANDON / OFFON / OFFBAS TO CHILLER C	CHILLED WATER PUMP 1 STATUS	OFF / ON	OFF / ON	CHILLED, WATER, PUMP, RUN, SENSOR	CONTACT	-	
CHILLED WATER PUMP 1 START/STOPOFF / ONOFF / ONCHILLED, WATER, PUMP, RUN, CMDCONTACT-CHILLED WATER PUMP 2 START/STOPOFF / ONOFF / ONCHILLED, WATER, PUMP, RUN, CMDCONTACT-CHILLED WATER PUMP 5 SPEED COMMANDVFD% SPEEDCHILLED, WATER, PUMP, SPEED, CMD4-20 mA0-100%CHILLED WATER PUMP 5 SPEED COMMANDVFD% SPEEDCHILLED, WATER, PUMP, SPEED, CMD4-20 mA0-100%EVAP PUMP START/STOP COMMANDON / OFFON / OFFRELAY OUTPUT TO VFDCONTACT-EVAP PUMP RUN STATUSON / OFFON / OFFADJ. THRESHOLD CURRENT SENSING RELAYCONTACT-EVAP PUMP VFD SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL4-20 mA0-100%EVAP PUMP VFD SPEED COMMANDON / OFFON / OFFPUMP VFD ALARMCONTACT-CHW SET-POINT FOR REGULAR CHILLERSIGNAL°FBAS TO VFD INPUT TERMINAL4-20 mA4-2.48°FCHW SPASS FLOW CONTROL VALVE COMMANDMODULATING%MODULATING VALVE ACTUATOR2-10 VDC0-100%CHW LOOP EXPORT PUMP SPEED COMMANDON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER RNABLE COMMANDON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHW LOOP EXPORT PUMP SPEED COMMANDON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHW LOOP EXPORT PUMP SPEED COMMANDON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER RA	CHILLED WATER PUMP 2 STATUS	OFF / ON	OFF / ON	CHILLED, WATER, PUMP, RUN, SENSOR	CONTACT	-	
CHILLED WATER PUMP 2 START/STOPOFF / ONOFF / ONCHILLED, WATER, PUMP, RUN, CMDCONTACT-CHILLED WATER PUMP 4 SPEED COMMANDVFD% SPEEDCHILLED, WATER, PUMP, SPEED, CMD4-20 mA0-100%CHILLED WATER PUMP 5 SPEED COMMANDVFD% SPEEDCHILLED, WATER, PUMP, SPEED, CMD4-20 mA0-100%EVAP PUMP START/STOP COMMANDON / OFFON / OFFRELAY OUTPUT TO VFDCONTACT-EVAP PUMP RUN STATUSON / OFFON / OFFADJ. THRESHOLD CURRENT SENSING RELAYCONTACT-EVAP PUMP VFD SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL4-20 mA0-100%EVAP PUMP VFD SPEED COMMANDON / OFFON / OFFPUMP VFD ALARMCONTACT-EVAP PUMP ALARMON / OFFON / OFFPUMP VFD ALARMCONTACT-CHW SET-POINT FOR REGULAR CHILLERSIGNAL"FBAS TO CHILLER CONTROL PANEL4-20 mA42 - 48°FCHW BYPASS FLOW CONTROL VALVE COMMANDMODULATING%MODULATING VALVE ACTUATOR2-10 VDC0-100%CHW LOOP EXPORT PUMP SPEED COMMANDVFD% SPEEDBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ENABLE COMTON CHILLER CONTRAL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER CHARG FROM CHILLER CNTRL PNLMODULATING%BAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALAM STATUS FROM CHILLER CNTRL PNLMODULATING%BAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FRO	CHILLED WATER PUMP 1 START/STOP	OFF / ON	OFF / ON	CHILLED, WATER, PUMP, RUN, CMD	CONTACT	-	
CHILLED WATER PUMP 4 SPEED COMMANDVFD% SPEEDCHILLED, WATER, PUMP, SPEED, CMD4-20 mA0-100%CHILLED WATER PUMP 5 SPEED COMMANDVFD% SPEEDCHILLED, WATER, PUMP, SPEED, CMD4-20 mA0-100%EVAP PUMP START/STOP COMMANDON / OFFON / OFFRELAY OUTPUT TO VFDCONTACT-EVAP PUMP VID STATUSON / OFFON / OFFADJ. THRESHOLD CURRENT SENSING RELAYCONTACT-EVAP PUMP VFD SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL4-20 mA0-100%EVAP PUMP VFD SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL4-20 mA0-100%CHW SET-POINT FOR REGULAR CHILLERSIGNAL°FBAS TO CHILLER CONTROL PANEL4-20 mA42 - 48°FCHW LOOP EXPORT PUMP SPEED COMMANDMODULATING%MODULATING VALVE ACTUATOR2-10 VDC0-100%CHW LOOP EXPORT PUMP SPEED COMMANDON / OFFN / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ENABLE COMTO CHILLER CONTROL ON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER RLA% FROM CHILLER CONTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER RLA% FROM CHILLER CNTRL PNLMODULATING%BAS TO CHILLER CONTROL PANELCONTACT-CHILLER RLA% FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER RLA% FROM CHILLER CNTRL PNLMODULATING%BAS TO CHILLER CONTROL PANELCONTACT-	CHILLED WATER PUMP 2 START/STOP	OFF / ON	OFF / ON	CHILLED, WATER, PUMP, RUN, CMD	CONTACT	-	
CHILLED WATER PUMP 5 SPEED COMMANDVFD% SPEEDCHILLED, WATER, PUMP, SPEED, CMD4-20 mA0-100%EVAP PUMP START/STOP COMMANDON / OFFON / OFFRELAY OUTPUT TO VFDCONTACT-EVAP PUMP RUN STATUSON / OFFON / OFFADJ. THRESHOLD CURRENT SENSING RELAYCONTACT-EVAP PUMP VFD SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL4-20 mA0-100%EVAP PUMP VALARMON / OFFON / OFFPUMP VFD ALARMCONTACT-CHW SET-POINT FOR REGULAR CHILLERSIGNAL°FBAS TO CHILLER CONTROL PANEL4-20 mA42 - 48°FCHW BYPASS FLOW CONTROL VALVE COMMANDMODULATING%MODULATING VALVE ACTUATOR2.10 VDC0-100%CHW LOOP EXPORT PUMP SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL0.10 VDC0-100%CHW LOOP EXPORT PUMP SPEED COMMANDON / OFFN/ OFFBAS TO VFD INPUT TERMINAL0.10 VDC0-100%CHILLER ENABLE COMTO CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER RLA% FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER RLA% FROM CHILLER CNTRL PNLMODULATING%BAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALAW FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALAW FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHIL	CHILLED WATER PUMP 4 SPEED COMMAND	VFD	% SPEED	CHILLED, WATER, PUMP, SPEED, CMD	4-20 mA	0-100%	
EVAP PUMP START/STOP COMMANDON / OFFON / OFFRELAY OUTPUT TO VFDCONTACT-EVAP PUMP RUN STATUSON / OFFON / OFFADJ. THRESHOLD CURRENT SENSING RELAYCONTACT-EVAP PUMP VFD SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL4-20 mA0-100%EVAP PUMP ALARMON / OFFON / OFFPUMP VFD ALARMCONTACTCHW SET-POINT FOR REGULAR CHILLERSIGNAL°FBAS TO CHILLER CONTROL PANEL4-20 mA42 - 48°FCHW BYPASS FLOW CONTROL VALVE COMMANDMODULATING%MODULATING VALVE ACTUATOR2-10 VDC0-100%CHW LOOP EXPORT PUMP SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL0-10 VDC0-100%CHW LOOP EXPORT PUMP SPEED COMMANDON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ENABLE CMD TO CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER RLA% FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLMODULATING%BAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFRELAY OUTPUT TO VFDCONTACT </td <td>CHILLED WATER PUMP 5 SPEED COMMAND</td> <td>VFD</td> <td>% SPEED</td> <td>CHILLED, WATER, PUMP, SPEED, CMD</td> <td>4-20 mA</td> <td>0-100%</td> <td></td>	CHILLED WATER PUMP 5 SPEED COMMAND	VFD	% SPEED	CHILLED, WATER, PUMP, SPEED, CMD	4-20 mA	0-100%	
EVAP PUMP RUN STATUSON / OFFON / OFFADJ. THRESHOLD CURRENT SENSING RELAYCONTACT-EVAP PUMP VFD SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL4-20 mA0-100%EVAP PUMP ALARMON / OFFON / OFFPUMP VFD ALARMCONTACT-CHW SET-POINT FOR REGULAR CHILLERSIGNAL°FBAS TO CHILLER CONTROL PANEL4-20 mA42 - 48°FCHW BYPASS FLOW CONTROL VALVE COMMANDMODULATING%MODULATING VALVE ACTUATOR2-10 VDC0-100%CHW LOOP EXPORT PUMP SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL0-10 VDC0-100%CHILLER ENABLE COMMANDON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ENABLE CMD TO CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER RLA% FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLMODULATING%BAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANEL <t< td=""><td>EVAP PUMP START/STOP COMMAND</td><td>ON / OFF</td><td>ON / OFF</td><td>RELAY OUTPUT TO VFD</td><td>CONTACT</td><td>-</td><td></td></t<>	EVAP PUMP START/STOP COMMAND	ON / OFF	ON / OFF	RELAY OUTPUT TO VFD	CONTACT	-	
EVAP PUMP VFD SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL4-20 mA0-100%EVAP PUMP ALARMON / OFFON / OFFON / OFFPUMP VFD ALARMCONTACT-CHW SET-POINT FOR REGULAR CHILLERSIGNAL°FBAS TO CHILLER CONTROL PANEL4-20 mA42 - 48°FCHW BYPASS FLOW CONTROL VALVE COMMANDMODULATING%MODULATING VALVE ACTUATOR2-10 VDC0-100%CHW LOOP EXPORT PUMP SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL0-10 VDC0-100%CHW LOOP EXPORT PUMP SPEED COMMANDON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ENABLE COM TO CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER RLA% FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALA% FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALA% FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALA% FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALA% FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALA% FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALA% FROM CHILLER CNTRL PNLON / OFFON / OFFRELAY OUTPUT TO VFDCONTAC	EVAP PUMP RUN STATUS	ON / OFF	ON / OFF	ADJ. THRESHOLD CURRENT SENSING RELAY	CONTACT	-	
EVAP PUMP ALARMON / OFFON / OFFPUMP VFD ALARMCONTACT-CHW SET-POINT FOR REGULAR CHILLERSIGNAL°FBAS TO CHILLER CONTROL PANEL4-20 mA42 - 48°FCHW BYPASS FLOW CONTROL VALVE COMMANDMODULATING%MODULATING VALVE ACTUATOR2-10 VDC0-100%CHW LOOP EXPORT PUMP SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL0-10 VDC0-100%CHULLER ENABLE COMMANDON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ENABLE COM TO CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER RLA% FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CONTROL PANELCONTACTCHILLER ALARM STATUS FROM CHILLER CONTROL PANELCONTACTCHILLER ALARM STATUS FROM CHILLER CONTROL ON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CONTROL ON ON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CONTROL ON ON / OFFON / OFFRELAY OUTPUT TO VFDCONTACT-CAMPUS CHW LOOP IMPORT VALVEMODULATING% OP	EVAP PUMP VFD SPEED COMMAND	VFD	% SPEED	BAS TO VFD INPUT TERMINAL	4-20 mA	0-100%	
CHW SET-POINT FOR REGULAR CHILLERSIGNAL°FBAS TO CHILLER CONTROL PANEL4-20 mA42 - 48°FCHW BYPASS FLOW CONTROL VALVE COMMANDMODULATING%MODULATING VALVE ACTUATOR2-10 VDC0-100%CHW LOOP EXPORT PUMP SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL0-10 VDC0-100%REG CHILLER ENABLE COMMANDON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ENABLE CMD TO CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLMODULATING%BAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFCONTACTCHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OF	EVAP PUMP ALARM	ON / OFF	ON / OFF	PUMP VFD ALARM	CONTACT	-	
CHW BYPASS FLOW CONTROL VALVE COMMANDMODULATING%MODULATING VALVE ACTUATOR2-10 VDC0-100%CHW LOOP EXPORT PUMP SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL0-10 VDC0-100%REG CHILLER ENABLE COMMANDON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ENABLE CMD TO CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER RLA% FROM CHILLER CNTRL PNLMODULATING%BAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFON / OFFCONTACTCHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFCONTACTCAMPUS CHW LOOP IMPORT VALVEMOD	CHW SET-POINT FOR REGULAR CHILLER	SIGNAL	°F	BAS TO CHILLER CONTROL PANEL	4-20 mA	42 - 48°F	
CHW LOOP EXPORT PUMP SPEED COMMANDVFD% SPEEDBAS TO VFD INPUT TERMINAL0-10 VDC0-100%REG CHILLER ENABLE COMMANDON / OFFON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER ENABLE CMD TO CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHILLER RLA% FROM CHILLER CNTRL PNLMODULATING%BAS TO CHILLER CONTROL PANELCONTACT-CHILLER ALARM STATUS FROM CHILLER CNTRL PNLON / OFFON / OFFBAS TO CHILLER CONTROL PANELCONTACT-CHW LOOP EXPORT PUMP START/STOP COMMANDON / OFFON / OFFRELAY OUTPUT TO VFDCONTACT-CAMPUS CHW LOOP IMPORT VALVEMODULATING% OPENRELAY OUTPUT TO MODULATING VALVE ACTUATOR4-20 mA-	CHW BYPASS FLOW CONTROL VALVE COMMAND	MODULATING	%	MODULATING VALVE ACTUATOR	2-10 VDC	0-100%	
REG CHILLER ENABLE COMMAND ON / OFF ON / OFF BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER ENABLE CMD TO CHILLER CNTRL PNL ON / OFF ON / OFF BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER RLA% FROM CHILLER CNTRL PNL MODULATING % BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER ALARM STATUS FROM CHILLER CNTRL PNL ON / OFF ON / OFF BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER ALARM STATUS FROM CHILLER CNTRL PNL ON / OFF ON / OFF BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER ALARM STATUS FROM CHILLER CNTRL PNL ON / OFF ON / OFF BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER ALARM STATUS FROM CHILLER CNTRL PNL ON / OFF ON / OFF BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER ALARM STATUS FROM CHILLER CNTRL PNL ON / OFF ON / OFF BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER ALARM STATUS FROM CHILLER CNTRL PNL ON / OFF ON / OFF BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER ALARM STATUS FROM CHILLER CNTRL PNL ON / OFF ON / OFF RELAY OUTPUT TO VFD CONTACT	CHW LOOP EXPORT PUMP SPEED COMMAND	VFD	% SPEED	BAS TO VFD INPUT TERMINAL	0-10 VDC	0-100%	
CHILLER ENABLE CMD TO CHILLER CNTRL PNL ON / OFF BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER RLA% FROM CHILLER CNTRL PNL MODULATING % BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER ALARM STATUS FROM CHILLER CNTRL PNL ON / OFF ON / OFF BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER ALARM STATUS FROM CHILLER CNTRL PNL ON / OFF ON / OFF BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER ALARM STATUS FROM CHILLER CNTRL PNL ON / OFF ON / OFF BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER ALARM STATUS FROM CHILLER CNTRL PNL ON / OFF ON / OFF BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER ALARM STATUS FROM CHILLER CNTRL PNL ON / OFF ON / OFF BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER ALARM STATUS FROM CHILLER CNTRL PNL ON / OFF ON / OFF RELAY OUTPUT TO VFD CONTACT - CAMPUS CHW LOOP IMPORT VALVE MODULATING % OPEN RELAY OUTPUT TO MODULATING VALVE ACTUATOR 4-20 mA -	REG CHILLER ENABLE COMMAND	ON / OFF	ON / OFF	BAS TO CHILLER CONTROL PANEL	CONTACT	-	
CHILLER RLA% FROM CHILLER CNTRL PNL MODULATING % BAS TO CHILLER CONTROL PANEL CONTACT - CHILLER ALARM STATUS FROM CHILLER CNTRL PNL ON / OFF ON / OFF BAS TO CHILLER CONTROL PANEL CONTACT - CHW LOOP EXPORT PUMP START/STOP COMMAND ON / OFF ON / OFF ON / OFF RELAY OUTPUT TO VFD CONTACT - CAMPUS CHW LOOP IMPORT VALVE MODULATING % OPEN RELAY OUTPUT TO MODULATING VALVE ACTUATOR 4-20 mA -	CHILLER ENABLE CMD TO CHILLER CNTRL PNL	ON / OFF	ON / OFF	BAS TO CHILLER CONTROL PANEL	CONTACT	-	
CHILLER ALARM STATUS FROM CHILLER CNTRL PNL ON / OFF BAS TO CHILLER CONTROL PANEL CONTACT - CHW LOOP EXPORT PUMP START/STOP COMMAND ON / OFF ON / OFF RELAY OUTPUT TO VFD CONTACT - CAMPUS CHW LOOP IMPORT VALVE MODULATING % OPEN RELAY OUTPUT TO MODULATING VALVE ACTUATOR 4-20 mA -	CHILLER RLA% FROM CHILLER CNTRL PNL	MODULATING	%	BAS TO CHILLER CONTROL PANEL	CONTACT	-	
CHW LOOP EXPORT PUMP START/STOP COMMAND ON / OFF RELAY OUTPUT TO VFD CONTACT - CAMPUS CHW LOOP IMPORT VALVE MODULATING % OPEN RELAY OUTPUT TO MODULATING VALVE ACTUATOR 4-20 mA -	CHILLER ALARM STATUS FROM CHILLER CNTRL PNL	ON / OFF	ON / OFF	BAS TO CHILLER CONTROL PANEL	CONTACT	-	
CAMPUS CHW LOOP IMPORT VALVE MODULATING % OPEN RELAY OUTPUT TO MODULATING VALVE ACTUATOR 4-20 mA	CHW LOOP EXPORT PUMP START/STOP COMMAND	ON / OFF	ON / OFF	RELAY OUTPUT TO VFD	CONTACT	-	
	CAMPUS CHW LOOP IMPORT VALVE	MODULATING	% OPEN	RELAY OUTPUT TO MODULATING VALVE ACTUATOR	4-20 mA	-	

UPDATED 3/







Ľ

POINT DESCRIPTION	Γ		FIELD DEVICE DESCRIP			
DESCRIPTION	ТҮРЕ	UNITS	INSTRUMENT TYPE	SIGNAL	RANGE	NOTES
POINTS (TO BE MAPPED TO UNIT CONTRO	OLLER)	11			I I	
OUTSIDE AIR TEMP.	TEMP.	۴	MAP BUILDING GLOBAL OUTDOOR AIR TEMP.	-	-	NETWORK SHARED POINT
OUTSIDE AIR RELATIVE HUMIDITY	HUMIDITY	% RH	MAP BUILDING GLOBAL OUTDOOR AIR HUMIDITY	-	-	NETWORK SHARED POINT
OUTSIDE AIR WET BULB TEMPERATURE	TEMP	۴	MAP BUILDING GLOBAL OUTDOOR AIR WET BULB	-	-	NETWORK SHARED POINT
ANT/ BUILDING LEVEL CONTROL POINTS		· · ·		L	· · · ·	
TOWER WATER SUPPLY TEMPERATURE	TEMP	°F	RIGID PLATINUM RTD MOUNTED IN THERMOWELL	RESISTANCE	0 - 220°F	
TOWER WATER RETURN TEMPERATURE	TEMP	°F	RIGID PLATINUM RTD MOUNTED IN THERMOWELL	RESISTANCE	0 - 220°F	
TOWER BASIN WATER TEMPERATURE	TEMP	°F	RIGID PLATINUM RTD MOUNTED IN THERMOWELL	RESISTANCE	0 - 220°F	
LEAVING HX #1 TOWER WATER TEMPERATURE	TEMP	°F	RIGID PLATINUM RTD MOUNTED IN THERMOWELL	RESISTANCE	0 - 220°F	
LEAVING HX #1 HEATING WATER TEMPERATURE	TEMP	°F	RIGID PLATINUM RTD MOUNTED IN THERMOWELL	RESISTANCE	0 - 220°F	
CONDENSER WATER PUMP START/STOP COMMAND	ON / OFF	ON / OFF	RELAY OUTPUT TO VFD	CONTACT	-	
CHILLER CONDENSER PUMP RUN STATUS	ON / OFF	ON / OFF	ADJ. THRESHOLD CURRENT SENSING RELAY	CONTACT	-	
CONDENSER PUMP VFD SPEED COMMAND	VFD	% SPEED	BAS TO VFD INPUT TERMINAL	0-10 VDC	0-100%	
CDW FLOW - CONDENSER WATER FLOW	FLOWMETER	GPM	ULTRASONIC STRAP-ON FLOWMETER	0-10 VDC	SEE SEQ	
TOWER FREEZE PROTECTION PUMP RUN STATUS	ON / OFF	ON / OFF	ADJ. THRESHOLD CURRENT SENSING RELAY	CONTACT	-	
TOWER FRZ PROT PUMP START/STOP COMMAND	ON / OFF	ON / OFF	RELAY OUTPUT TO VFD	CONTACT	-	
TOWER FAN RUN STATUS	ON / OFF	ON / OFF	ADJ. THRESHOLD CURRENT SENSING RELAY	CONTACT	-	
TOWER FAN START/STOP COMMAND	ON / OFF	ON / OFF	RELAY OUTPUT TO VFD	CONTACT	-	
TOWER FAN VFD SPEED COMMAND	VFD	% SPEED	BAS TO VFD INPUT TERMINAL	0-10 VDC	0-100%	
TOWER VIBRATION SWITCH	ON / OFF	ON / OFF	SAFETY	CONTACT	-	WIRE DIRECT TO VFD
TOWER BYPASS VALVE FEEDBACK	VALVE	ON / OFF	FEEDBACK	CONTACT	1 OR 0	
TOWER SWEEPER VALVE FEEDBACK	VALVE	ON / OFF	FEEDBACK	CONTACT	1 OR 0	
HX #1 HEATING WATER CONTROL VALVE COMMAND	% OPEN	%	MODULATING VALVE ACTUATOR	2-10 VDC	0-100%	
TOWER MAKE UP WATER CNTRL VALVE COMMAND	% OPEN	%	MODULATING VALVE ACTUATOR	2-10 VDC	0-100%	
TOWER BYPASS CNTRL VALVE COMMAND	ON / OFF	ON / OFF	RELAY OUTPUT TO 2-POSITION ELECTRIC VALVE	CONTACT	-	
TOWER SWEEPER CNTRL VALVE COMMAND	ON / OFF	ON / OFF	RELAY OUTPUT TO 2-POSITION ELECTRIC VALVE	CONTACT	-	
TOWER BASIN WATER LEVEL SENSOR	PRESSURE	INCHES OF WTR	HERMETICALLY SEALED DP SENSOR	0-10 VDC	-12" TO + 24" WC	BOTTOM OF BASIN AS ZERO REI





SEQUENCE OF OPERATION - CHILLED WATER - REGULAR DUTY CHILLER PLANT

A. <u>Overview:</u> This system consists of (1) ZZZ Ton regular duty chiller with a variable speed chiller evaporator pump and a variable speed chilled water (CHW) loop pump. The loop pump enables the chiller plant to deliver CHW to the campus loop (export function). In case the chiller plant is disabled, a modulating chilled water bypass flow control valve and a modulating import control valve are used in tandem for tight control of CHW, imported from the loop (import function), to meet the plant building CHW demand.

B. <u>Software Point Definitions (LCT Programming Required):</u>

Point Number	Point Name	Point Description and Formula
1.	PLNTCHW EVAPGPM2	This software point defines the combined flow rate of all evaporator pumps that are energized at the chiller plant. Use maximum of calculated evaporator flow and metered evaporator flow.
2.	PLNTCHW BYPGPM	The amount and direction of flow in the chiller plant bypass (a bypass flow rate greater than zero indicates forward flow in the bypass such that building/ loop chilled water supply temperature will be higher than the plant chilled water supply temperature
		BYPGPM = Reading from Bypass Flowmeter based on sign convention as stated above
3.	PLNTCHW BYPGPMDB	CHW Bypass GPM dead band is utilized for determining when to stop a chiller (used only for local start/stop decision)
		Chiller CHW Set Point sent to CCP from BAS, deg E
4.	CHWSP	CHWSP = Span Block Output [OAWBAVG, 30, 46, 50, 44]
5.	PLNTCHW MAXCHWT	Maximum acceptable building chilled water supply temperature MAXCHWT = CHWSP + 2
6.	PLNTCHW DTMAX	This software point defines the largest possible temperature difference across the CHW plant.
		DTMAX = MAX [0.1, (T5CHWR – MIN (MAXCHWT, T2CHWS)]
7.	PLNTCHW MAXTONS	This point defines the rated capacity of the online chiller in the chiller plant.
		MAXTONS = (CH1ST = TRUE) * ZZZ * CAPCORR
8.	PLNTCHW DTDESIGN PLNTCHW BYPGPMSP	This software point defines the dynamic design temperature difference across the CHW plant as a function of evaporator flow for full loading of the chiller
		DTDESIGN = MAX (5, MIN (20, (ZZZ * CAPCORR * 24) / MAX (1, EVAPGPM2)))
9.		This software point defines bypass flow required to ensure that the primary return chilled water temperature is <= design value for the online chiller at the plant.
		* ((DTDESIGN / DTMAX2) – 1)) + MINBYPGPM2). Averaged over 8 scans.

10.	PLNTCHW OFFEVAPGPM	This software point is utilized for determining when to stop the next chiller. This point shall equal the rated pump capacity of the next chiller that is to be stopped based upon the chiller sequencing database OFFEVAPGPM = EVAPGPM2
11.	PLNTCHW LOAD	This point defines the number of tons of cooling produced by the chiller plant. LOAD = MAX (0, MIN (MAXTONS, (EVAPGPM2 * (T4CHWR – T2CHWS) / 24)))
12.	PLNTCHW PEAKLOAD	This point defines the MAX amount of load the online chiller can see for the combined loop/ building return water temperature. PEAKLOAD = MIN (MAXTONS, EVAPGPM2 * DTMAX/ 24)
13.	PLNTCHW GPMPKIN	Campus loop peak possible GPM that can be imported to the plant building, based on loop pump design flow of YYY GPM GPMPKIN = - (YYY * 1.1)
14.	PLNTCHW GPMPKOUT	Campus loop peak possible GPM that can be exported from the plant, based on loop pump design flow of YYY GPM GPMPKOUT = + (YYY * 1.1)
15.	PLNTCHW GPMLPMPS	Installed Loop Pump(s) Total Online GPM Capacity GPMLPMPS = GPMPKOUT * LP1ST
16.	PLNTCHW GPMPKTRNS	Leftover plant flow capacity that is available to pump out to the campus loop. GPMPKTRNS = MAX (0, MIN (GPMPKOUT, GPMLPMPS, {(CHWBYPGPMSP – CHWBYPGPM) + (QE60 – EVAPGPM2) * EP1ST}))
17.	PLNTCHW CH1AVAIL	This software point is utilized for communicating the availability of a chiller for operation based upon the chiller plant sequencing database. IF AND (CH1OOS = FALSE, CH1FTR = FALSE, EP1AVAIL = TRUE, PLNTCDW_CP1AVAIL = TRUE, PLNTCDW_CT1AVAIL = TRUE, LP1AVAIL = TRUE) THEN CH1AVAIL = TRUE ELSE CH1AVAIL = FALSE after 30 second off delay
18.	PLNTCHW AVAILTON1	This software point defines the amount of excess cooling capacity available from the chiller plant (without having forward flow in the bypass) AVAILTON1 = MAX (0, (MIN (MAXTONS, PEAKLOAD) – LOAD))
19.	PLNTCHW AVAILTON2	This software point defines the amount of excess cooling capacity available from the chiller plant when loop transfer pump is at full output AVAILTON2 = MIN (AVAILTON1, (GPMPKTRNS * DTMAX2 / 24))
20.	PLNTCHW CHLRSAVAIL	This point is utilized for counting the number of chiller available to run at the plant CHLRSAVAIL = CH1AVAIL
21.	PLNTCHW CHLRSENA	This point is utilized for counting the number of chiller that are enabled to run at the chiller plant CHLRSENA = CH1ENA

22.	PLNTCHW DTMAX1	This software point defines the largest possible temperature difference across the chilled water plant with correction for MAX acceptable chilled water supply temperature.
23.	PLNTCHW DTMAX2	DTMAXT = MAX (0.1, (TSCHWR = MAXCHWT)) This software point defines the MAX of DTMAX and DTMAX1 DTMAX2 = MAX [MIN (DTDESIGN, DTMAX), DTMAX1]
24.	PLNTCHW MINBYPGPM	This software point defines minimum bypass GPM (user adjustable) under design OAWB conditions MINBYPGPM = -10
25.	PLNTCHW MINBYPGPM2	This software point calculates OAWB based reset to minimum bypass GPM to allow for recirculation of building flow at lower OAWBs MINBYPGPM2 = SPAN Block Output [OAWBAVG, 30, 100, 50, MINBYPGPM1
26.	PLNTCHW CAPCORR	This software point defines the correction factor (user adjustable) to be applied to MAXTONS calculation. it applies to correction due condenser water temperature relief and age of chiller. Use SPAN BLOCK for calculation. CAPCORR = SPAN Block Output [OAWBAVG, 30, 1.03, 80, 0.97]
27.	PLNTCHW BLDGGPM	Calculated Building CHW Flow, GPM BLDGGPM = EVAPGPM2 + BYPGPM - LOOPGPM
28.	PLNTCHW CLEARCMD1	Campus All Clear Command is False for 1200 seconds (User Adjustable) if a Chiller is Enabled or Disabled anywhere on Shared Campus Loop. Map from Campus Controller to Plant Controller
29.	PLNTCHW	CLEARCMD1 = CAMPUS_CLEARCMD1 Chiller Plant Load to Capacity based on Dynamic Conditions % LD2USECAP = LOAD / MAX (0.1_PEAKLOAD) * 100
30.	PLNTCHW LD2MAXCAP	Chiller Plant Load to Maximum Achievable Capacity %
31.	PLNTCHW	Time averaged value of OAWB over 108 consecutive scans
32.	PLNTCHW QEDES	Design evaporator flow thru chiller, as per chiller submittal, AAA GPM QEDES = AAA
33.	PLNTCHW QEHI	Maximum Operator desired evaporator flow thru chiller, GPM QEHI = 1.20 * QEDES
34.	PLNTCHW QEMIN1	Minimum Operator desired evaporator flow thru chiller, GPM OFMIN1 = 0.30 * OFDES
35.	PLNTCHW QE60	Measured flow thru chiller evaporator with evaporator pump running at 60 Hz QE60 = Measured flow thru Chiller Evaporator with Evaporator Pump running at 60 Hz
36.	PLNTCHW QE18	Measured flow thru chiller evaporator with evaporator pump running at 18 Hz QE18 = Measured flow thru Chiller Evaporator with Evaporator Pump running at 18 Hz
37.	PLNTCHW QEMIN2	Minimum acceptable flow, as fraction of design flow (0.XX), thru evaporator bundle as specified by chiller manufacturer, GPM QEMIN2 = 0.XX * QEDES

20	PLNTCHW	Minimum allowed flow thru chiller evaporator, GPM
39.	QELO	QELO = MAX (QEMIN1, QEMIN2, QE18)
		VFD speed in Hertz for measured chiller evaporator flow of
	PLNTCHW	QELO
40.	Z	Z = Evaporator Pump Speed in Hertz to deliver chiller
		evaporator flow of QELO. Determined during commissioning phase.
		Calculated flow thru chiller evaporator, GPM
41.		EVAPGPM1 = EP1ST * SPAN Block Output [EPSPDCMD, 0,
	EVAPGPIVIT	QELO, 100, QE60]
40	PLNTCHW	Evaporator Pump in Out Of Service. User Specified.
42.	EP100S	EP100S = FALSE
	PLNTCHW EP1FTR	Evaporator Pump Fail to Run Alarm with Latching. Plant
		Operator needs to confirm run status via manual operation or
		issue a remote FTR alarm reset to reset the alarm.
		IF FTRRESET = TRUE THEN
44.		EP1FTR = FALSE
		ELSE
		EP1FTR = Latched Value of (IF (AND (EP1SS = TRUE, XOR
		(EP1SS = TRUE, EP1ST = TRUE)) = TRUE for 90 seconds
		continuously).
45	PLNTCHW	Evaporator Pump Available for Service
	EP1AVAIL	EP1AVAIL = NOT (OR (EP1OOS, EP1FTR))
		Operator Button on Graphics to Reset a FTR Alarm
	PLNTCHW	IF FTRESET = TRUE THEN trigger 10 second pulse timer
46.	FTRRESET	FTRESET = Output from 10 second pulse timer
		ELSE
		FTRRESET = FALSE

- C. <u>Chiller Sequencing Database:</u> The DDC system shall include a database that lists the accumulated run time, service availability, run status, start/stop command and alarm status for the chiller at the plant.
- D. <u>Chiller Start/ Stop Command:</u> Advisories for starting and stopping chiller in the chiller plant shall be issued by the Global Campus Chilled Water Control system. When a start or stop command is generated, an alarm message shall be generated at the operator workstation graphics along with chiller ID that has been selected to start/stop. Start/Stop logic for the chiller, evaporator pump and the condenser pump shall be as follows and will require LCT programming. Chiller Fail to Run Alarm shall also require LCT programming.
 - 1) Chiller Start Advisory (PLNTCHW_ADVISORY_STRT = True): An advisory to start a chiller at the E-Building Plant shall be issued if the following conditions are true:

IF AND (CAMPUS_START = TRUE, CAMPUS_PLNTCHW_NEXTSTRT = TRUE, CAMPUS_CLEARMCD = TRUE) THEN PLNTCHW_ADVISORY_STRT = TRUE END IF The automation system shall start specific chiller (CH1ENA = TRUE) that is recommended by the Sequencer Block based on run hour, service availability, and offline status. JCI Metasys shall command the evaporator pump and condenser pump to run immediately once the chiller is enabled to run.

2) Chiller Stop Advisory (PLNTCHW_ADVISORY_STOP = TRUE): An advisory to stop a chiller at the E-Building plant shall be issued if the following conditions are true:

IF OR (AND (CH1FTR = TRUE, CH1ENA = TRUE), AND (CAMPUS_STOP = YES, CAMPUS_PLNTCHW_NEXTSTOP = YES, CAMPUS_CLEARCMD = TRUE)) THEN PLNTCHW_ADVISORY_STOP = TRUE END IF

The automation system shall stop specific chiller (CH1ENA = FALSE) that is recommended by the Sequencer Block based on run hours, service availability, and online status. JCI Metasys shall command the evaporator pump and condenser pump to stop, 90 seconds after the chiller run status has gone false.

3) Chiller Fail to Run Alarm (CH1FTR): If a chiller is commanded to run at the plant and the chiller run status stays false for 300 seconds continuously, then the chiller will be disabled and tagged with a fail to run alarm. The fail to run alarm can be reset only when the chiller run status returns to true state or the operator issues an FTR alarm reset.

IF FTRRESET = TRUE THEN CH1FTR = FALSE ELSE CH1FTR = Latched Value of (IF (AND (CH1ENA = TRUE, XOR (CH1ENA = TRUE, CH1ST = TRUE)) = TRUE for 300 seconds continuously)

SEQUENCE OF OPERATION - CHILLER PLANT CHW LOOP PUMPS AND LOOP VALVES

- A. <u>Overview:</u> This system consists of one (1) variable speed chilled water loop export pump with a VFD, a modulating bypass chilled water flow control valve and a modulating import control valve. With this system, the chiller plant can export chilled water to the campus chilled water loop. Additionally, chilled water can be imported into the plant building from the campus chilled water system if the building plant is offline. The chiller plant bypass leg decouples the plant building CHW pump(s) from the other pumps.
- B. <u>PID Loop Definitions:</u> The following PID loop shall be provided at the system device controller:

-			* Dypass 1 10W 00110		')	
ſ	Р	ID Loop Description	Point Name	Units	Point Description	
	1.	Input Point Name:	FLOWINP3	%	Bypass Flow Error	
	2.	Setpoint:	0.0	%	Error Set-Point	
ſ					PID Output	
				Range:		
2	2	Output Point Name:	FLOWCMD3	%	See Section C for	
	э.				PID Output Range	
					(Low and High	
					Values)	
	4.	PID Loop Action:	R	everse Actin	g	
ſ	Б	Loop Posot:	See Section C for Pl	D Enable/ D	isable & Start Value	
	5.	Loop Reset.	& Stop Value for PID Output			

PID Loop 3 (Chiller Plant CHW Bypass Flow Control PID Loop)

C. <u>Software Point Definitions (LCT Programming Required):</u>

Point Number	Point Name	Point Description and Formula
1.		This software point is the linearized input to the PID loop for the campus loop pump and bypass control valve. Map PID input to PID loop controller.
	FLOWINP3	FLOWINP3 = 100 * (BYPGPM – BYPGPMSP) / (GPMPKIN – GPMPKOUT)
2.	PLNTCHW	This software point is a reverse linear fit of FLOWCMD3 such that for FLOWCMD3 = 0 and 50, TRANSCMD3 = 100% and 0% respectively.
	TRANSCIDS	TRANSCMD3 = SPAN Block Output [FLOWCMD, 0, 100, 50, 0]
3. 4.	PLNTCHW	This software point is a reverse linear fit of FLOWCMD3 such that for FLOWCMD3 = LOWVAL3 and 0, EVAPCMD3 = 0% and 100% respectively.
	EVAPCINDS	EVAPCMD3 = SPAN Block Output [FLOWCMD3, LOWVAL3, 0, 0, 100]
		Campus Chilled Water Loop Pump Global Speed Command: This point is utilized to issue a global speed command to all online campus loop pumps.
		LOOPCMD3 = CAMPUS_LOOPCMD3

5.	PLNTCHW LPMPCMD3	LOOP PUMP COMMAND: This value is used for controlling pump speed and the bypass control valve. It is minimum of the campus loop speed command (LOOPCMD3) and the local loop speed pump command (TRANSCMD3).
6.	PLNTCHW LP100S	LPMPCMD3 = MIN (LOOPCMD3, TRANSCMD3) CHW Loop Pump Out Of Service. If the plant operator needs to have the loop pump out of service, then the operator will make LP1OOS = YES else the operator will make LP1OOS = NO on the Plant Graphics. LP1OOS = NO
7.	PLNTCHW LP1FTR	CHW Loop Pump Fail to Run Alarm with Latching. Plant Operator needs to confirm run status via manual operation or issue a remote FTR alarm reset to reset the alarm. IF FTRRESET = TRUE THEN LP1FTR = FALSE ELSE LP1FTR = Latched Value of (IF (AND (LP1SS = TRUE, XOR (LP1SS = TRUE, LP1ST = TRUE)) = TRUE for 90 seconds continuously).
8.	PLNTCHW LP1AVAIL	CHW Loop Pump Availability for Operation. If the loop pump is not out for service and is not having fail to run alarm then the loop pump is available for service
9.	PLNTCHW PB3	PID Loop 3: Proportional Band Term (User Adjustable). Map to PID loop controller. PB3 = 600
10.	PLNTCHW IT3	PID Loop 3: Integral Term (User Adjustable). Map to PID loop controller.
11.	PLNTCHW STARTVAL3	PID Loop 3: PID loop output value when PID loop goes from Disabled to Enabled Condition IF the command to enable a chiller goes from True to False THEN STARTVAL3 = Output of SPAN Block [OAWBAVG, 30, 60, 60, 70] ELSE STARTVAL3 = 49
12.	PLNTCHW STOPVAL3	PID Loop 3: PID loop output value when loop goes from Enabled to Disabled Condition IF LP1ST = TRUE THEN STOPVAL3 = 49 ELSE STOPVAL = 50
13.	PLNTCHW ENABLE3	PID Loop 3: PID loop enable and disable commands When the command to enable a chiller goes from False to True or from True to False then ENABLE3 = FALSE for elapsed time of 120 seconds and then goes TRUE
14.	PLNTCHW LOWVAL3	PID Loop 3: PID loop minimum output value LOWVAL3 = -50
15.	PLNTCHW HIGHVAL3	PID Loop 3: PID loop maximum output value HIGHVAL3 = 100

D. <u>Hardware Output Point Definitions (LCT Programming Required):</u>

Point Number	Point Name	Point Description and Formula
		Start / Stop Command for the Campus CHW Loop Pump #1. Map command to device controller.
1.	PLNTCHW LP1SS	IF LPMPCMD3 > 3 THEN LP1SS = TRUE ELSE JE L PMPCMD3 < 1 THEN
		LPISS = FALSE END IF
		LOOP PUMP #1 VFD COMMAND: The CHW loop pump VFD speed command shall be calculated given LPMPCMD and a linear curve fit equation. Map command to device controller.
2.	PLNTCHW LP1VFD	IF LP1ST = TRUE THEN LP1VFD = OFFSET + SPAN Block Output [LPMPCMD3, 0, 0, 100, 100] ELSE L P1VFD = 0
		where OFFSET1 = User Adjustable, customized user input to address oversized/undersized loop pumps and provide preferential plant loading at lower campus speeds; Default Value = 0%
	PLNTCHW IMPVLV	Command for modulating CHW Import Valve, % Open. Map to device controller.
3.		IF LP1ST = FALSE THEN IMPVLV = Output from SPAN Block [BYPVLV, 0, 10, 70, 100] ELSE IMPVLV = 0% after 30 seconds off delay
		Command for modulating CHW bypass valve, % Open. Map to device controller.
4.	PLNTCHW BYPVLV	IF FLOWCMD3 > = 50 THEN BYPVLV = SPAN Block Output [FLOWCMD3, 50, 0, HIGHVAL3, 100] ELSE BYPVLV = SPAN Block Output [LPMPCMD3, 0, 0, 30, 100] *
5	PLNTCHW	Evaporator Pump VFD Speed Command where $0\% = 4 \text{ mA} = Z \text{ Hz}$ and $100\% = 20 \text{ mA} = 60 \text{ Hz}$. Set up required during Commissioning
0.	EP1VFD	EP1VFD = EVAPCMD3 * EP1ST
6.	PLNTCHW CH1SS	Chiller Start/ Stop Command to Chiller Control Panel (CCP). Map to device controller. IF AND (CH1ENA = TRUE, CH1AVAIL = TRUE) THEN IF AND (EP1ST = TRUE, CNP1ST = TRUE) THEN CH1SS = TRUE ELSE
		CH1SS = FALSE after 120 seconds off delay ENDIF

		Main Evaporator Water Pump Start/Stop Control. Map to device controller.
7.	PLNTCHW EP1SS	IF AND (CH1ENA = TRUE, EP1OOS = FALSE, EP1FTR = FALSE) THEN EP1SS = TRUE ELSE IF CH1ST = FALSE THEN EP1SS = FALSE with off delay of 90 seconds
		ENDIF

BUILDING CHW PUMPS CONTROL - E-BUILDING

- A. <u>Overview</u>: This system consists of two (2) variable speed building chilled water pumps each with a VFD. Each pump is sized for 100% of design flow capacity. The speed of the online pump is controlled with a PID loop such that the differential pressure (DP) sensor, located remotely in the building CHW pipe run, reads equals to DP setpoint.
- B. <u>PID Loop Definitions:</u> The following PID loop shall be provided at the system device controller:

PID Loop Description		Point Name	Units	Point Description		
1.	Input Point Name:	DP	psig	Differential		
				Pressure		
2.	Setpoint:	DPSP	psig	Set-Point Reset		
				per Section C		
3.	Output Point Name:	PID4OUT	%	PID Output		
				Range:		
				0 to 100% PID		
				Output Range		
4.	PID Loop Action:	Reverse Acting				
5.	Loop Reset:	See Section C for PID Enable/ Disable & Start Value				
		& Stop Value for PID Output				

PID Loop 4 (Building DP Control)

C. Software Point Definitions (LCT Programming Required):

Point Number	Point Name	Point Description and Formula
1.	PLNTCHW DPSP	Building Differential Pressure Setpoint (psig) with OAWB based Reset.
		DPSP = Output from SPAN Block [OAWBAVG, 30, 10, 70, 15]
2	PLNTCHW REQPMPS	Required Building CHW Pumps to be Online; User Specified.
۷.		REQPMPS = 1
2	PLNTCHW	Building pump BP-1 in Out Of Service. User Specified.
З.	BP100S	BP100S = FALSE
	PLNTCHW I. BP1FTR	CHW Building Pump BP-1 Fail to Run Alarm with Latching. Plant Operator needs to confirm run status via manual operation or issue a remote FTR alarm reset to reset the alarm.
4.		IF FTRRESET = TRUE THEN BP1FTR = FALSE ELSE BP1FTR = Latched Value of (IF (AND (BP1SS = TRUE, XOR (BP1SS = TRUE, BP1ST = TRUE)) = TRUE for 90 seconds continuously).
5.	PLNTCHW	Building pump BP-2 in Out Of Service. User Specified.
	DP2003	DF2003 - FALSE
6.		Operator needs to confirm run status via manual operation or issue a remote FTR alarm reset to reset the alarm.

		IF FTRRESET = TRUE THEN
	PLNTCHW	BP2FTR = FALSE
	BP2FTR	ELSE
		BP2FTR = Latched Value of (IF (AND (BP2SS = TRUE, XOR
		(BP2SS = TRUE, BP2ST = TRUE)) = TRUE for 90 seconds
		continuously).
7	PLNTCHW	PID #4 Proportional Band Term. Remote User Adjustable.
7.	PB4	PB4 = 80
o	PLNTCHW	PID #4 Integral Term. Remote User Adjustable, sec.
о.	IT4	IT = 30
0	PLNTCHW	PID #4 Output when PID #4 State goes from Disable to Enable
9.	STRTVAL4	STRTVAL4 = SPAN [OAWBAVG, 30, 30, 70, 50]
10	PLNTCHW	PID #4 Output when PID #4 State goes from Enable to Disable
10.	STOPVAL4	STOPVAL4 = 0
	PLNTCHW	Criteria for Enabling PID Loop #4
	PID4ENA	IF OR (BP1ST = TRUE, BP2ST = TRUE) THEN
11.		PID4ENA = TRUE
		ELSE
		PID4ENA = FALSE after 30 seconds off delay

D. Hardware Output Point Definitions (LCT Programming Required):

Point Number	Point Name	Point Description and Formula
-	PLNTCHW BP1SS	Start/ Stop Command for building CHW pump BP-1
1.		Use Sequencer Block for Two Pumps and select number of pumps required (REQPMPS) based on Run Hours, Pumps OOS Flag and Pumps FTR Flag
	PLNTCHW BP2SS	Start/ Stop Command for building CHW pump BP-2
2.		Use Sequencer Block for Two Pumps and select number of pumps required (REQPMPS) based on Run Hours, Pumps OOS Flag and Pumps FTR Flag
3.	PLNTCHW BP1VFD	Speed Command for Building CHW Pump BP-1, %. Program VFD Controller during Commissioning such that 0% Speed Command corresponds to 18 Hz and 50% speed command corresponds to 39 Hz
		BP1VFD = BP1SS * BP1ST * PID4OUT
4.	PLNTCHW BP2VFD	Speed Command for Building CHW Pump BP-2, %. Program VFD Controller during Commissioning such that 0% Speed Command corresponds to 18 Hz and 50% speed command corresponds to 39 Hz
		BP2VFD = BP2SS * BP2ST * PID4OUT