PROJECT DESIGN CONDITIONS

CLIMATE CONDITONS

WEATHER STATION:	2009 ASHRAE CLIMATE DATA / Prescott Love Field, AZ
ASHRAE CLIMATE ZONE	4B
HEATING 99.6% (F DB):	17.5 °F (99.6% H DB)
HUMIDIFICATION 99.6% (DP/ HR / MCDB	-1.9 °F / 6.0 / 36.9 °F
COOLING 0.4% (DB / MCWB)	94.3 °FDb / 61.2 °FWb
DEHUMIDIFICATION 0.4% (DP / HR / MCDB)	63.4 °FDb / 105.6 / 70.9 °FWb
MAX. AMBIENT DB TEMP (50 YRS)	105.7 °F
MIN. AMBIENT DB TEMP (50 YRS)	-5.9 °F

BUILDING OPERATING HOURS (VERIFY WITH STATION):

MONDAY - FRIDAY	7:30 a.m. - 6 p.m.
SATURDAY	7:30 a.m. - 6 p.m.
SUNDAY	7:30 a.m. - 6 p.m.

SPACE / UNIT DESCRIPTIONS	SET POINTS						SPACE OPERATING HOURS OCCUPIED / NIGHT SETBACK			ROOM AIR BALANCE	NOTES
	COOLING		HEATING		HUMIDIFICATION						
	OCC. °F Db	UNOCC. °F Db	OCC. °F Db	UNOCC. °F Db	Max. %RH	Min. %RH	M-F	SAT.	SUN.	(o) (+) (-) (- -) (+ +)	
HVAC DESIGN MANUAL											
PHARMACY SERVICE											
CONTROLLED SUBSTANCE VAULT AND SECURED DISPENSING/RECEIVING AREA	75	78	70	68	60%	30%				(+)	1-4
NON PATIENT ROOMS - SUPPORT AREAS											
CONFERENCE ROOM	75	78	70	68	60%	20%				(o)	1-4
BREAKROOM / LOUNGE	75	78	70	68	60%	20%				(-)	1-4
OFFICES	75	78	70	68	60%	20%				(o)	1-4
TOILETS - PUBLIC (PERIMETER)	NA	NA	NA	NA	NA	NA				(- -)	1-4
GENERAL STORAGE	NA	NA	NA	NA	NA	NA				(- -)	
LOADING DOCK	NA	NA	60	NA	NA	NA				(o)	
NON PATIENT ROOMS - MISCELLANEOUS AREAS											
COPY/PRINTING ROOM (LARGE)	75	78	70	68	NA	NA				(o)	1-4
ELECTRICAL EQUIPMENT ROOMS (EER)											
ELECTRICAL EQUIPMENT CLOSETS WITHOUT INTERNAL HEAT GAIN	NA	NA	NA	NA	NA	NA				NA	1-4
SATELLITE AND MAIN ELECTRICAL ROOMS WITH INTERNAL HEAT GAIN	86	NA	40	NA	NA	NA				(o)	1-4
ELEVATOR MACHINE ROOM	77	78	NA	NA	NA	NA				(o)	1-4
EXTERIOR STAIRS	NA	NA	50	NA	NA	NA				NA	1-4
HOUSEKEEPING AID CLOSET (HAC)	NA	NA	NA	NA	NA	NA				(- -)	1-4
LOADING DOCK	NA	NA	60	NA	NA	NA				(o)	1-4
MECHANICAL EQUIPMENT ROOMS	84	NA	50	NA	NA	NA				(o)	1-4
WALK-IN REFRIGERATOR AND FREEZERS	NA	NA	NA	NA	NA	NA				NA	1-4
WAREHOUSE (CENTRAL) WITH PHARMACY	80	NA	68	NA	60%	NA				(o)	1-4

NOTES:
1 ZONE LEVEL OCCUPANCY HOUR SCHEDULE SHALL BE PER BUILDING OPERATING HOURS UNLESS OTHERWISE SCHEDULED.
2 ZONE LEVEL SET POINT CONDITIONS SHALL BE AS SCHEDULED UNLESS OTHERWISE SCHEDULED OR NOTED FOR ROOM SPECIFIC SPACE CONDITIONS.
4 DIVISION 23 CONTRACTOR TO PROVIDE ROOM AIR BALANCE AS SHOWN. AIR BALANCE SHALL BE NEUTRAL FOR NON-CRITICAL SPACES NOT SHOWN IN SCHEDULE.

POINTS LIST - BUILDING MONITORING

POINT ID	POINT DESCRIPTION	HARDWARE POINT				SOFTWARE POINTS						DISPLAY	DEFAULT	TRENDING	TRENDING	ALARM	NOTES
		AI	AO	BI	BO	AV	BV	LOOP	SCHED.	TREND	ALARM	GRAPHIC	SETPOINT	INTERVAL	STORAGE	STATUS	
ADVANCED UTILITY METERING																	
	ELECTRICITY	X										X			X		A,B
	STEAM	X										X			X		A,B
	CONDENSATE	X										X			X		A,B
	DOMESTIC WATER FLOW	X										X			X		A,B
	CHILLED WATER	X										X			X		A,B
	OUTSIDE AIR TEMPERATURE					X						X			X		A,B
	OUTSIDE AIR RELATIVE HUMIDITY					X						X			X		A,B
WEATHER STATION																	
BDP	BUILDING DIFFERENTIAL PRESSURE	X										X	0.03 INWG	15 MIN.	X	X	
OAT	OUTSIDE AIR TEMPERATURE	X										X	-	15 MIN.	X		A,B
OAH	OUTSIDE AIR HUMIDITY	X										X	-	15 MIN.	X		A,B
OADP	OUTSIDE AIR DEWPOINT					X						X	-	15 MIN.	X		A,B
SPACE TEMPERATURE MONITORING																	
	STAIR-1	X										X				X	
	STAIR-2	X										X				X	
	ELEVATOR SHAFT	X										X				X	
	MECH. STORAGE 115	X										X				X	
ALARM MONITORING																	
	SUMP PUMP - ELEVATOR - COMMON ALARM			X								X				X	
	SUMP PUMP - PIPE ENTRANCE - COMMON ALARM			X								X				X	
	STEAM CONDENSATE PUMP - COMMON ALARM			X								X				X	

NOTES:
A. SEE SPECIFICATION SECTION 251010 - ADVANCED UTILITY METERING SYSTEM
B. TCC SHALL COORDINATE ENERGY MONITORING POINTS WITH SECTION 25010.

POINT LIST - STANDARD TREND DATA

POINT TYPE	TREND INTERVAL	OPERATIONAL TREND DURATION	TESTING TREND DURATION
AI	15 MIN.	24 HOURS	3 DAYS
BI	CHANGE OF VALUE	24 HOURS	3 DAYS
AO	15 MIN.	24 HOURS	3 DAYS
BO	CHANGE OF VALUE	24 HOURS	3 DAYS
CALC	1 HOUR	30 DAYS	N/A

NOTES:
1 SEE EQUIPMENT POINT LISTS FOR EQUIPMENT SPECIFIC TRENDING REQUIREMENTS

MECHANICAL CONTROLS LEGEND

ABBREVIATIONS

A
AI ANOLOG INPUT
AO ANOLOG OUTPUT
AV ANOLOG VIRTUAL
AFS AIRFLOW STATION
AF AFTER FILTER
ACV AIRFLOW CONTROL VALVE
AHU AIR HANDLING UNIT

B
BAC BUILDING AUTOMATION CONTROL
BI BINARY INPUT
BO BINARY OUTPUT
BV BINARY VIRTUAL
BP BUILDING PRESSURE
BPC BUILDING PRESSURE CONTROL

C
CC COOLING COIL
CHW CHILLED WATER
CP CIRCULATING PUMP
CT CURRENT TRANSMITTER

D
DD DIRECT DRIVE
DX DIRECT EXPANSION
DP DIFFERENTIAL PRESSURE

E
EA EXHAUST AIR
EAT ENTERING AIR TEMPERATURE
ECM ELECTRONICALLY COMMUTATED MOTER
EF EXHAUST FAN
ER ENERGY RECOVERY
EWT ENTERING WATER TEMPERATURE

F
FF FINAL FILTER
FSD FIRE SMOKE DAMPER

G
GF GAS FURNACE

H
HC HEATING COIL
HGB HOT GAS BYPASS
HW HOT WATER

I
IFB INTEGRAL FACE AND BYPASS

L
LAT LEAVING AIR TEMPERATURE
HGB HOT GAS BYPASS
LWT LEAVING WATER TEMPERATURE

M
MAT MIXED AIR TEMPERATURE
MOA MINIMUM OUTSIDE AIR

N
NG NATURAL GAS

O
OA OUTSIDE AIR
OCC OCCUPANCY
OX OXYGEN
OXS OXYGEN SENSOR

P
PCC PRECOOLING COIL
PF PREFILTER
PHC PREHEAT COIL

R
RA RETURN AIR
RF RETURN FAN
RHC REHEAT COIL
R/E RETURN/EXHAUST
R/R RETURN/RELIEF

S
SA SUPPLY AIR
SF SUPPLY FAN
SD SMOKE DAMPER

T
TCP TEMPERATURE CONTROL PANEL
TA TRANSFER AIR
TMV THERMOSTATIC MIXING VALVE
TCV TEMPERATURE CONTROL VALVE

U
UV ULTRAVIOLET

V
VFD VARIABLE FREQUENCY DRIVE
VOC VOLITILE ORGANIC COMPOUND
VOC VOLITILE ORGANIC COMPOUND

SYMBOLS

EQUIPMENT

CHILLED WATER COIL
DIRECT EXPANSION COIL
HOT WATER COIL
HOT WATER INTEGRAL FACE-AND-BYPASS COIL
ELECTRIC HEATING COIL
GAS FURNACE
HUMIDIFIER DISPERSION GRID
MODULATING OPPOSED BLADE DAMPER
MODULATING PARALLEL BLADE DAMPER
SMOKE DAMPER
BACKDRAFT DAMPER
VAV ATU MODULATING DAMPER
2-POSITION OPPOSED BLADE DAMPER
2-POSITION PARALLEL BLADE DAMPER
FILTER
BLOWER FAN
PLENUM FAN
PUMP
CURRENT TRANSMITTER
2-WAY MODULATING CONTROL VALVE
3-WAY MODULATING CONTROL VALVE
THERMOSTATIC MIXING VALVE
POINT TYPE
POINT NAME

SENSORS & DEVICES

DUCTWORK

AIRFLOW STATION
AIRFLOW SENSOR
SMOKE DETECTOR
TEMPERATURE SENSOR
FREEZESTAT
HUMIDITY SENSOR
DAMPER POSITION INDICATOR
DIFFERENTIAL PRESSURE SENSOR
RETURN/EXHAUST AIR DUCT STATIC PRESSURE SENSOR
SUPPLY AIR DUCT STATIC PRESSURE SENSOR

PIPING

TEMPERATURE SENSOR
PRESSURE SENSOR
FLOW METER
AQUASTAT

ZONE

ZONE TEMPERATURE SENSOR
ZONE HUMIDITY SENSOR
ZONE OCCUPANCY SENSOR
POSITIVE SPACE DIFFERENTIAL PRESSURE SENSOR
NEGATIVE SPACE DIFFERENTIAL PRESSURE SENSOR

1

SHEET REVISED AND REISSUED.

Revision #	Date
⚠ ASI #1	09/10/2019

CONSULTANT INFORMATION

STRUCTURAL / CIVIL ENGINEER
H2B, INC.
1225 N. LOOP WEST, SUITE 800
HOUSTON, TX 77008
(713) 864-2900

COMMISSIONING
GLHN ARCHITECTS & ENGINEERS, INC.
2939 E. BROADWAY BLVD
TUCSON, AZ 85716
(520) 881-4546

MECH. / ELEC. / PLUMB. / TECH. ENGINEER
SPUR DESIGN
11020 KING STREET, SUITE 350
OVERLAND PARK, KS 66210
(405) 842-6100

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION, INC.
19910 W. 161ST STREET
OLATHE, KS 66062
(913) 829-8650

LANDSCAPE ARCHITECT
ARC STUDIOS INC.
3117 E. FLOWER STREET
TUCSON, AZ 85716
(520) 882-9655

ARCHITECT

spur DESIGN
312 SW 25th Street, Oklahoma City, OK 73109, spur-design.com
11020 King Street, Suite 350, Overland Park, KS 66210, spur-design.com

Office of Construction and Facilities Management

VA | U.S. Department of Veteran Affairs

SHEET TITLE: MECHANICAL CONTROLS I
APPROVED: PROJECT DIRECTOR
PROJECT PHASE: BID DOCUMENTS
FULLY SPRINKLERED
PROJECT TITLE: CONSTRUCT REPLACEMENT WAREHOUSE
PROJECT LOCATION: 500 AZ-89, PRESCOTT, AZ 86301
DATE: 04/23/2019
CHECKED BY: JES
DRAWN BY: JAD
VA PROJECT NUMBER: 649-414
BUILDING NUMBER: 165
DRAWING NUMBER: 165-M-701
Dwg. 111 OF 145

VA FORM 08-6231