

SPRINKLER GENERAL NOTES

- EXISTING SPRINKLER SHALL REMAIN IN SERVICE UNTIL NEW WORK IS TESTED AND ACCEPTED. INTERRUPTION OF EXISTING NEW AND EXISTING WORK SHALL BE COORDINATED IN ADVANCE WITH THE OWNER.
- CONTRACTOR SHALL MAKE ADJUSTMENTS TO EXISTING SPRINKLER SYSTEM AS REQUIRED TO PROTECT CONTRACTOR'S WORK FROM DAMAGE AND TO MAINTAIN PROPER FLOW AND PRESSURE DISTRIBUTION, SUCH AS SIZING FUNCTIONS, ETC.) IN ACCORDANCE WITH THE LATEST EDITION OF NFPA 13 AND LOCAL AUTHORITY HAVING JURISDICTION. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO COMMENCING WORK. CONTRACTOR SHALL COORDINATE SPRINKLER SYSTEMS WITH ALL OTHER MECHANICAL SYSTEMS. CONTRACTOR SHALL COORDINATE SPRINKLER HEADS IN CEILING TYPES TO INCLUDE EXISTING BRANCH SPRINKLER PIPING AS REQUIRED TO ACCOMMODATE DEFLECTORS AND LIGHTING FIXTURE LAYOUTS.
- SPRINKLER CONTRACTORS SHALL COORDINATE SPRINKLER HEADS IN CEILING TYPES.
- THE SPRINKLER SYSTEM SHALL REMAIN IN SERVICE AS LONG AS POSSIBLE DURING REVISIONS TO THE FLOOR WHEN THE SYSTEM IS TAKEN OUT OF SERVICE. THE COUPLED PORTION OF THE FLOOR SHALL REMAIN IN SERVICE. THE UNCOUPLED PORTIONS SHALL HAVE A FIRE RATED WHENEVER THE BUILDING IS OCCUPIED. THE CONTRACTOR SHALL FULLY COORDINATE THE FIRE PROTECTION AND SPRINKLER WORK WITH THE WORK OF ALL OTHER TRADES TO PROVIDE COMPLETE SYSTEM WITHOUT INTERFERENCES.

SPRINKLER GENERAL NOTES

1. EXISTING SYSTEMS SHALL REMAIN IN SERVICE UNTIL NEW WORK IS TESTED AND ACCEPTED. INTERRUPTION OF PROTECTION FOR THE PURPOSES OF MAKING NEW EXISTING PUMP OR MANNED INTERCONNECTIONS BETWEEN NEW AND EXISTING WORK SHALL BE COORDINATED IN ADVANCE WITH THE OWNER.
2. CONTRACTOR SHALL MAKE ADJUSTMENTS TO EXISTING SPRINKLER SYSTEM AS REQUIRED TO PROVIDE PROTECTIVE COVERING TO EXISTING SPRINKLER HEADS TO PREVENT DAMAGE TO EXISTING SPRINKLER HEADS, JUNCTIONS, ETC.) IN ACCORDANCE WITH THE LATEST EDITION OF NFPA 13 AND LOCAL AUTHORITY HAVING JURISDICTION. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO COMMENCING WORK. CONTRACTOR SHALL MAINTAIN CLEAR ACCESS TO ALL EXISTING SPRINKLER HEADS AND BRANCHES. CONTRACTOR SHALL COVER SPRINKLER HEADS IN CEILING TILES, RELOCATE EXISTING BRANCH SPRINKLER PIPING AS REQUIRED TO ACCOMMODATE DEFENSE AND LIGHTING LAYOUTS.
3. SPRINKLER CONTRACTOR SHALL COVER SPRINKLER HEADS IN CEILING TILES.
4. THE SPRINKLER SYSTEM SHALL REMAIN IN SERVICE AS IS AND PROTECTIVE COVERING IN THE FLOOR SHALL BE REMOVED IMMEDIATELY AFTER THE PROTECTIVE COVERING OF THE FLOOR SHALL BE REMOVED. SERVICE THE UNOCCUPIED PORTIONS SHALL BE COVERED AS REQUIRED WHENEVER THE BUILDING IS OCCUPIED.
5. THE CONTRACTOR SHALL FULLY COORDINATE THE FIRE PROTECTION AND SPRINKLER WORK WITH THE WORK OF ALL OTHER TRADES TO PROVIDE COMPLETE SYSTEM WITHOUT INTERFERENCES.

EXPANSION TANK SCHEDULE												
DESIG.	LOCATION	SYSTEM	TYPE	TANK VOLUME (GAL.)	AIR CHARGE PRESSURE (PSIG)	DIMENSIONS				BASIS OF DESIGN	REMARKS	
						PRECHARGE (PSIG)	OVER DIM. (IN.)	H/L (IN.)	COIN (IN.)			
EXP-1	MECH ROOM	HEATING	BLADDER	5.3	53	12	30	24	37	1	BELL & GOSSETT / B-200	-
EXP-2	MECH ROOM	CHILLED	BLADDER	5.3	53	12	30	24	37	1	BELL & GOSSETT / B-200	-

EXPANSION TANK SCHEDULE

- NOTES:
1. ALL EXPANSION TANKS SHALL BE FACTORY PRECHARGED TO CAPACITIES SHOWN.
 2. BLADDER SHALL BE REMOVABLE THRU ACCESS HANDHOLE.
 3. PROVIDE ALL PIPING SPECIALTIES AS SHOWN IN TYPICAL PIPING DIAGRAM.
 4. ALL TANKS SHALL BE ASME STAMPED.
 5. ALL TANKS SHALL HAVE A MAXIMUM WORKING PRESSURE OF 125 PSI.

AIR DEVICE SCHEDULE								
DESIGN	DUTY	SIZE (IN.)	CFM RANGE	INLET/NECK SIZE (IN.)	MAX. S.P.	MAX. WC	DESCRIPTION	BASES OF DESIGN
A	SUPPLY	24 x 24 MODULE	0 - 150	6 x 6	0.10"	25	18 x 18 LOWEROED FACE PANEL	TITUS IDC
B	SUPPLY	24 x 24 MODULE	151 - 335	9 x 9	0.10"	30	18 x 18 LOWEROED FACE PANEL	TITUS IDC
C	SUPPLY	24 x 24 MODULE	0 - 120	6"ø	0.10"	20	18 x 18 LOWEROED FACE PANEL	TITUS IDC
D	SUPPLY	24 x 24 MODULE	121 - 210	8"ø	0.10"	20	18 x 18 LOWEROED FACE PANEL	TITUS IDC
E	SUPPLY	24 x 24 MODULE	211 - 325	10"ø	0.10"	25	18 x 18 LOWEROED FACE PANEL	TITUS IDC
F	SUPPLY	18 x 4	0 - 250	18 x 4	0.10"	30	SINGLE REFLECTION - REOSTER 3/4" SPRING	TITUS 271 RL
G	RETURN	24 x 24 LAY-IN	N/A	N/A	0.10"	20	PERFORATED FACE - REOSTER (FUSH)	TITUS PAR

NOTE: MANUFACTURERS MAY PROVIDE ALUMINUM OR STEEL AIR DEVICES UNLESS OTHERWISE INDICATED. ALL AIR DEVICES IN HIGH HUMIDITY AREAS SHALL BE ALUMINUM.

AIR SEPARATOR SCHEDULE							
DESIG	LOCATION	SYSTEM	SIZE	GPM	STRAINER	BASIS OF DESIGN	REMARKS
AS-1	MCH ROOM	HEATING	3"	80	N	BELL & GOSSETT	-
AS-2	MCH ROOM	CHILLED	6"	175	N	BELL & GOSSETT	-

- NOTES
1. MAXIMUM PRESSURE DROP THRU AIR SEPARATORS SHALL BE ONE FOOT OF DROP.
 2. PROVIDE HIGH CAPACITY AUTOMATIC AIR VENT ON AIR VENT PORT OF SEPARATOR.
 3. CONSTRUCTION SHALL BE A.S.M.E. STAMPED FOR 125 PSI WORKING PRESSURE.

COOLING COIL DATA													
DESCR	TOTAL CFM	O.A. CFM	TYPE	FAN SPEED	FAN MOTOR	TOTAL SENS. BTU/HR	EAF CFM (°F)	EAF MB (°F)	LAF CFM (°F)	LAF MB (°F)	FIN (°F)		
1	157	0	VERTICAL SLOPE TOP	MEDIUM	44	3,250	3,040	75.0	62.5	56.5	55.3	42	
2	215	0	VERTICAL SLOPE TOP	MEDIUM	56	5,771	5,430	75.0	62.5	54.3	53.4	42	
3	372	0	VERTICAL SLOPE TOP	MEDIUM	68	277.1	7,470	7,240	75.0	62.5	56.5	55.5	42
4	463	0	VERTICAL SLOPE TOP	MEDIUM	82	277.1	10,550	9,290	75.0	62.5	55.3	54.3	42
5	639	0	VERTICAL SLOPE TOP	MEDIUM	124	277.1	14,440	12,590	75.0	62.5	55.3	54.3	42
6	652	0	VERTICAL SLOPE TOP	MEDIUM	138	277.1	14,700	13,170	75.0	62.5	55.4	54.5	42
7	679	0	VERTICAL RECESSED	MEDIUM	138	277.1	15,170	13,560	75.0	62.5	55.4	54.4	42
8	1713	0	HORIZONTAL CONE-CAPPED	MEDIUM	100	277.1	3,660	3,410	75.0	62.5	56.6	55.2	42
9	227	0	HORIZONTAL CONE-CAPPED	MEDIUM	170	277.1	5,680	4,820	75.0	62.5	55.5	54.3	42
10	485	0	HORIZONTAL CONE-CAPPED	MEDIUM	240	277.1	11,080	9,780	75.0	62.5	56.0	54.7	42

1. PROVIDE WITH INTEGRAL CONNECT
2. WALL-MOUNTED TEMPERATURE SENSORS PROVIDED BY DDC SYSTEM CONTRACTOR. COORDINATE.
3. CONCEALED UNITS SHALL BE FULLY ENCLOSED WITH INLET AND OUTLET DUCT COLLARS.
4. DRAIN PAN SHALL BE STAINLESS STEEL WITH INSULATION.
5. PROVIDE HIGH LEVEL CONDENSATE SENSOR AND ALARM FOR DRAIN PAN FOR EACH HORIZONTAL CONCEALED PAN COIL UNIT. COORDINATE WITH DDC SYSTEM CONTRACTOR.
6. PROVIDE WITH PREMIUM EFFICIENT MOTOR.

HEATING AND VENTILATING UNIT SCHEDULE																					
DESIG	AREA SERVED	FAN DATA					HEATING COIL DATA										OVER- WIRE A.T.O. (In) Supply	BASIS OF DESIGN			
		CFM	ESF (In)	TSF (In)	HP	VOLTS/ PHASE	FAN RPM	O.A. %	TYPE	MMH	EAT (°F)	LAT (°F)	EWI (°F)	LWT (°F)	GPM @ 40° ΔT	MAX WFO (°F)			ROOMS		
			0.5	1.5	3	440/3	3,570													100	HOT WATER
HW-1	CONNECTING CORRIDOR	2420	0.5	1.5	3	440/3	3,570	100										2	728	0.5	TRANE - CLIMATE CHANGER

- NOTES:
1. PROVIDE WITH PREMIUM EFFICIENT MOTOR.

PRESSURE REDUCING STATION SCHEDULE											
LOCATION	STEADY PRESSURE (PSI)		PIPE SIZES (I)						REMARKS		
	INLET	REDUCED	D1	D2	D3	D4	D5	D6			
PRO-1	MECHANICAL ROOM	100	20	2,500	3"	1 1/2"	2"	2 1/2"	3"	4"	VALVES BASED ON 2-VALVE ARRANGEMENT

- NOTES:
1. REFER TO DETAIL 11/69-H9 FOR LOCATIONS OF PIPE SIZES.

UNIT SCHEDULE																	
		HEATING COOL DATA						DYNAMIC INSULATION LOSS @ BOUNDED @ 1000 FPM								BASIS OF DESIGN	
ROWS	Btu/h	FAT (°F)	L/T (°F)	C/P (°F)	CEIL & 40° ΔT	MAX WPD (BTU)	ROWS	63	125	250	500	1000	2000	4000	8000		
								1	2	3	4	5	6	7	8		
3	6,130	70.0	105.9	180	140	0.3	0.3	1	47	53	53	49	46	41	35	30	TBANK / FCGB020
	6,880	70.0	107.2	180	140	0.4	0.6	1	49	55	55	52	48	43	36	30	TBANK / FCGB040
3	15,070	70.0	107.3	180	140	0.8	2.2	1	51	58	59	54	51	45	38	32	TBANK / FCGB060
3	19,210	70.0	108.3	180	140	1.0	4.0	1	51	58	58	54	51	46	40	36	TBANK / FCGB080
3	27,550	70.0	109.7	180	140	1.4	10.3	1	52	59	59	55	51	45	38	33	TBANK / FCGB100
3	27,940	70.0	109.5	180	140	1.4	10.6	1	54	60	61	56	54	47	41	37	TBANK / FCGB120
3	28,680	70.0	109.3	180	140	1.4	11.1	1	59	58	58	53	55	49	43	38	TBANK / FCGB120
3	6,820	70.0	104.7	180	140	0.3	0.4	1	60	57	58	58	57	54	49	44	TBANK / FCGB200
3	9,070	70.0	101.8	180	140	0.5	1.3	1	63	65	66	62	58	53	48	41	TBANK / FCGB300
3	20,160	70.0	103.5	180	140	1.0	6.7	1	68	68	68	63	58	54	51	46	TBANK / FCGB380




22. CONTRACTOR SHALL PROVIDE TEMPORARY COOLING AND HEATING AS REQUIRED TO ALL OCCUPIED AREAS OF BUILDING 69 DURING OCCUPIED HOURS. TEMPERATURE AND HUMIDITY LEVELS SHALL BE MAINTAINED AT $\pm 37^{\circ}\text{F}$ AND 50% RH ($\pm 10\%$). CONTRACTOR MAY UTILIZE EXISTING SYSTEMS TO THE EXTENT POSSIBLE. MUST PROVIDE SUFFICIENT EQUIPMENT TO THE EXTENT REQUIRED TO MAINTAIN SPACE CONDITIONS.

MECHANICAL LEGEND	
CHILLED WATER SUPPLY	—CHWS—
CHILLED WATER RETURN	—CHWR—
CONDENSER WATER SUPPLY	—CS—
CONDENSER WATER RETURN	—CR—
HEATING WATER SUPPLY	—HWS—
HEATING WATER RETURN	—HWR—
CONDENSATE DRAIN LINE	—CD—
LOW PRESSURE STEAM SUPPLY (0-15 PS)	—LPS—
LOW PRESSURE STEAM RETURN	—LPR—
MEDIUM PRESSURE STEAM SUPPLY (16-60 PS)	—MPS—
MEDIUM PRESSURE STEAM RETURN	—MPR—
HIGH PRESSURE STEAM SUPPLY (61-150 PS)	—HPS—
HIGH PRESSURE STEAM RETURN	—HPR—
CHECK VALVE	
BALL VALVE	
GATE VALVE	
BUTTERFLY VALVE	
GLOBE VALVE	
BALANCING VALVE	
MULTI-PURPOSE VALVE	
VALVE IN VERTICAL POSITION	
3 POINT MODULATING CONTROL VALVE	
2 POINT MODULATING CONTROL VALVE	
RELIEF VALVE	
BACKGROUND PREVENTER	
HOSE AND VALVE	
BUCKET STRAINER	
WEE STRAINER W/HOSE END VALVE	
FLANGED CONNECTION	
GAUGE AND VALVE	
TEMPERATURE/PRESSURE TEST POINT	
THERMOMETER	
UNION	
PIPING CAP	
MANUAL AIR VENT	
AUTOMATIC AIR VENT	
FLOOR DRAIN	
PIPE GUIDE OR SLEEVE	
PIPE ANCHOR	
PIPING ELBOW DOWN	
PIPING ELBOW UP	
PIPE CONNECTION BOTTOM	
PIPE CONNECTION TOP	
FLOOR CLEANOUT	
WALL CLEANOUT	
SUPPLY AIR DUCT UP (DASHED LINES FOR DOWN)	
RETURN & EXHAUST AIR DUCT UP	
OUTSIDE AIR DUCT UP	
DASHED LINES FOR DOWN	
NEW DUCTWORK	
EXISTING DUCTWORK	
DUCTWORK TO BE REMOVED	
DOUBLE THICKNESS TURNING VANES	
DUCT TRANSITION ROUND TO RECTANGULAR	
DUCT TRANSITION RECTANGULAR TO ROUND	
CHANGE IN DUCT ELEVATION (G-RISE, D-DROP)	
DUCT TRANSITION SQUARE TO ROUND	
BALANCING DAMPER	
THERMOSTAT	
CONNECT TO EXISTING DISCONNECT EXISTING	
ABBREVIATIONS	
ABOVE FINISHED FLOOR	ATF
AIR HANDLING UNIT	AHU
AIR PRESSURE DROP	APD
ENTERING AIR TEMPERATURE	EAT
EXTENDING TO REMAIN	ETR
EXTERNAL STATIC PRESSURE	ESP
FINS PER INCH	FPI
FMS PER INCH	FPI
FAN POWER	HP
LEAVING AIR TEMPERATURE	LAT
NOT IN CONTRACT	NIC
NOT IN CONTRACT	NIC
OUTSIDE AIR	OA
REMOVE EXISTING	RA
RETURN AIR	RA
STATIC PRESSURE	SP
TOTAL STATIC PRESSURE	TSP
UNLESS OTHERWISE NOTED	UN
WATER PRESSURE DROP	WD
WE BUILD	WB

STEAM TO WATER HEAT EXCHANGER SCHEDULE										
DESIG	SERVICE	WATER SIDE					STEAM SIDE		CONDENSATE SIDE	
		GPM	ENT (°F)	LMT (°F)	MAX. WPD (F.T.)	WATER TYPE	INITIAL PRESSURE	LB/HR	TEMP CAPACITY (LBS/HR)	TYPE
HX-1	HEATING WATER	1,600	75	180	3.0	WATER	5 PSIG	1,666	4,998	SHELL & TUBE
HX-2	DOMESTIC WATER	400	10	40	120	3.0	WATER	5 PSIG	417	1,261
										BELL & GOSSETT / BELL & GOSSETT / ONSU 4-4-4

PUMP SCHEDULE											
DESIG	SERVICE	LOCATION	GPM	HEAD (FT.)	MOTOR			RPM	CONTROL	BASIS OF DESIGN	TYPE
					HP	MAX. BHP	VOLTS				
CHMP-1	CHILLED WATER	MECH ROOM	175	80	6.4	480	3	1750	ATC	BELL & GOSSETT SERIES 1510 / SIZE 28C	BASE-MOUNTED END-SUCTION
CHMP-2	CHILLED WATER	MECH ROOM	175	7.5	6.4	480	3	1750	ATC	BELL & GOSSETT SERIES 1510 / SIZE 28C	BASE-MOUNTED END-SUCTION
HMP-1	HEATING WATER	MECH ROOM	80	90	4.25	480	3	1750	ATC	BELL & GOSSETT SERIES 1510 / SIZE 1-1/2"28C	BASE-MOUNTED END-SUCTION
HMP-2	HEATING WATER	MECH ROOM	80	90	4.25	480	3	1750	ATC	BELL & GOSSETT SERIES 1510 / SIZE 1-1/2"28C	BASE-MOUNTED END-SUCTION

- NOTES:
1. PROVIDE WITH PREMIUM EFFICIENT MOTOR.

 APPENDUM #1 Revisions	8/21/12	Date
Consultants		ACQUICENTURE PLANNING ENGINEERING 1201 ENTERPRISE COURT, SUITE 102-C1 BEL AIR, MARYLAND 21034-11947 410.803.0099 410.858.1803 FAX
Seal		
 bkm Engineering Life Spaces		Burdette, Kozlowski, Murphy & Associates, Inc. 1403 Old Orchard Road Suite 600 Baltimore, Maryland 21209 410.337.2543 www.bkma.com E-mail: info@bkma.com
Drawing Title MECHANICAL LEGEND, ABBREVIATIONS, SCHEDULES, AND GENERAL NOTES		Project Title BUILDING 69 HVAC UPGRADE
Approved: Facilities Engineering Service Chief		Building Number 69
Approved: Medical Center Director		Checked M.A.F.
Location COATESVILLE, PENNSYLVANIA		Drawn ERS
Date MARCH 14, 2012		Project No. 542-09-102
Drawing No. 69-H1		Dwg. 6 of 22