EXPANSION LOOP DETAIL (1)

SCALE: NONE

EXPANSION LOOP SCHEDULE						
LOOP NO.	SERVICE	JACKET SIZE	TOTAL EXP.	DIMENSIONS H	DIMENSIONS W	BOLSTER LAYERS
1	4" HWS	8"	1"	5'-0"	5'-0"	1
	4" HWR	8"	1"	5'-0"	5'-0"	1

DESIGN PARAMETERS: HW & PC 200° F
INSTALLATION TEMPERATURE 50° F

WALL PENETRATION DETAIL (2)

SCALE: NONE

NOTE:

CROSSOVER PIPING TO HAVE APPROX. 1" CLEARANCE BETWEEN JACKETS.

CROSSOVER DETAIL (3)

SCALE: NONE

INSTALLATION INSTRUCTIONS: EXPANSION BOLSTERS (PVC JACKET)

PROCEDURE

1. EXPANSION BOLSTER MATERIAL IS SUPPLIED IN PADS: 41" WIDE x 96" LONG x 1" THICK.
2. CUT THE INDIVIDUAL LAYER PADS FROM THE ROLL ACCORDING TO DIMENSIONS GIVEN IN TABLE BELOW.
3. WRAP BOLSTER AROUND JACKET HOLDING IT IN PLACE WITH BEDDING SAND. BE CERTAIN THAT THE BOLSTER FITS SNUG AROUND JACKET.
4. BOLSTER MUST BE TRIMMED TO FIT AT ELBOWS AND TO DIMENSION SHOWN BELOW IF NECESSARY.
5. BUILD THE PADS TO THE REQUIRED LENGTH AND NUMBER OF LAYERS BY BUTTING PADS IN LONG SEGMENTS AND LAYERING AS REQUIRED BY THE DRAWING.

PVC JACKET OD (INCHES)	WRAPAROUND DIMENSION PER LAYER (INCHES) FIRST LAYER	SECOND LAYER	THIRD LAYER
3.5	11	16	19
4.5	15	18	21
6.14	19	22	26
8.16	24	28	31
10.20	30	33	36
12.24	35	38	41
14.00	40	44	47
16.00	45	48	51

EXPANSION BOLSTER DETAIL

SCALE: NONE

INSTALLATION INSTRUCTIONS: EXPANSION BOLSTERS (HDPE JACKET)

PROCEDURE

1. EXPANSION BOLSTER MATERIAL IS SUPPLIED IN PADS: 41" WIDE x 96" LONG x 1" THICK.
2. CUT THE INDIVIDUAL LAYER PADS FROM THE ROLL ACCORDING TO DIMENSIONS GIVEN IN TABLE BELOW.
3. WRAP BOLSTER AROUND JACKET HOLDING IT IN PLACE WITH BEDDING SAND. BE CERTAIN THAT THE BOLSTER FITS SNUG AROUND JACKET.
4. BOLSTER MUST BE TRIMMED TO FIT AT ELBOWS AND TO DIMENSION SHOWN BELOW IF NECESSARY.
5. BUILD THE PADS TO THE REQUIRED LENGTH AND NUMBER OF LAYERS BY BUTTING PADS IN LONG SEGMENTS AND LAYERING AS REQUIRED BY THE DRAWING.

HDPE JACKET OD (INCHES)	WRAPAROUND DIMENSION PER LAYER (INCHES) FIRST LAYER	SECOND LAYER	THIRD LAYER
4.55	15	18	21
6.68	20	23	27
8.68	26	30	33
10.85	32	35	39
12.85	38	41	44
14.1	41	45	48
16.1	46	49	52
18.2	49	52	55

EXPANSION BOLSTER DETAIL

SCALE: NONE

COND. WATER TRENCH SECTION

SCALE: NONE

4-PIPE TRENCH SECTION

SCALE: NONE

NOTE

THIS CONTRACTOR SHALL CONNECT TO LINES AT THIS APPROXIMATE LOCATION. CARRIER PIPE AND JACKET AS SPECIFIED.

NOTE

SEE UTILITY PLAN FOR OTHER UNDERGROUND PIPING ON THE SITE.

1 / M0.1 MECHANICAL UNDERGROUND PIPING

1"=20'

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RENOVATION AND RESTORATION OF CENTER GENERAL COMPLEX

FOR
THE STATE OF RHODE ISLAND
DEPARTMENT OF LABOR AND TRAINING
NEW HEADQUARTERS BUILDING
PONTIAC AVENUE
CRANSTON, RHODE ISLAND

7/24/98

No.	REVISIONS	DATE

TITLE: MECHANICAL SITE PLAN

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: 1"=20'-0"

J. S. CATAUDELLA
NO. 3694
REGISTERED PROFESSIONAL ENGINEER

MO.1

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2 / M1.01 SEC. CONN 69/69A
1/4" = 1'-0"

NOTE

ALL PIPING IS TO BE INSULATED

PROVIDE DRAW OFFS AT LOW POINTS AND VENTS AT HIGH.

NOTE

ALL PIPING IS EXCLUDED FROM ELEC, DATA AND PBX ROOMS

1 / M1.01 GROUND FLOOR
1/8" = 1'-0"

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401-728-1122

7/24/98

No.	REVISIONS	DATE

KEYPLAN

TITLE:
BUILDING 69A
HVAC PLAN
GROUND FLOOR

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: 1/8"=1'-0"

A. S. CATAUDELLA
NO. 3694
REGISTERED PROFESSIONAL ENGINEER

M1.01

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1 M1.02 ATTIC 1/8" = 1'-0"

2 M1.02 2ND FLOOR 1/8" = 1'-0"

3 M1.02 1ST FLOOR 1/8" = 1'-0"

4 M1.02 ATTIC MECH. SPACE 1/4"=1'-0"

5 M1.02 SECTION 1/4"=1'-0"

6 M1.02 SECTION 1/4"=1'-0"

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No.	REVISIONS	DATE

KEYPLAN

TITLE:
BUILDING 69A HVAC PLAN 1ST, 2ND AND ATTIC LEVELS

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: AS NOTED

J. S. CATAUDELLA NO. 3694 REGISTERED PROFESSIONAL ENGINEER

M1.02

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M-03

Blog 69

8.6.99

2 M1.03 1ST FLOOR
1/8" = 1'-0"

1 M1.03 GROUND FLOOR
1/8" = 1'-0"

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7/24/98

No.	REVISIONS	DATE

KEYPLAN

TITLE:
BUILDING 69
HVAC PLAN
GROUND & 1ST FLOORS

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: 1/8"=1'-0"

J. S. CATAUDELLA
NO. 3694
REGISTERED PROFESSIONAL ENGINEER

M1-03

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3 / M1.04 SEC A-A
1/8" = 1'-0"

4 / M1.04 SEC B-B
1/8" = 1'-0"

5 / M1.04 SEC C-C
1/8" = 1'-0"

7 / M1.04 SEC D-D
1/8" = 1'-0"

1 / M1.04 ATTIC
1/8" = 1'-0"

2 / M1.04 2ND FLOOR
1/8" = 1'-0"

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No.	REVISIONS	DATE

KEYPLAN

TITLE:
BUILDING 69 HVAC PLAN 2ND FLOOR & ATTIC

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: 1/8"=1'-0"

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M1.04

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1 M1.05 2ND FLOOR
1/8" = 1'-0"

2 M1.05 1ST FLOOR
1/8" = 1'-0"

3 M1.05 SECTION
NO SCALE

4 M1.05 FAN COIL TAKE-OFF DETAIL
NO SCALE

5 M1.05 MECHANICAL ROOM
1/4" = 1'-0"

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No.	REVISIONS	DATE

KEYPLAN

TITLE:
BUILDING 70 HVAC PLAN 1ST & 2ND FLOORS

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: 1/8"=1'-0"

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M1.05

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1 M1.06 ROOF PLAN
1/8"=1'-0"

2 M1.06 THIRD FLOOR PLAN
1/8"=1'-0"

NOTE

ALL DUCTWORK REDUCERS SHALL BE CONCENTRIC UNLESS OTHERWISE NOTED

3 M1.06 ROUND/OVAL SECTION
NO SCALE

4 M1.06 TYPICAL RTU
NO SCALE

NOTE

ROOF HOLES ONLY AT DUCT PNETRATIONS.

UNIT SHALL BE LEVEL WITHIN 1/8' IN BOTH DIRECTIONS

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No.	REVISIONS	DATE

KEYPLAN

TITLE:
BUILDING 70
HVAC PLAN
3RD FLOOR & ROOF

SA Job No. 97112	GCA Job No. 3940
DRAWN: CMC	DATE:
CHECKED: JSC	DRAWING: 1/8"=1'-0"

J. S. CATAUDELLA
NO. 3604
REGISTERED PROFESSIONAL ENGINEER

M1.06

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BLDG 71
1st FL.

8.6.99

1 FIRST FLOOR

BLDG. 71
2nd FL.

8.6.99

2 / A1.3 SECOND FLOOR
1/8" = 1'-0"

06/11/99 WED 14:02 FAX SACCOCCIO AND ASSOC INC → BOBBY P. 6
AOB- 8-99 SAT 2:02 PM

2 M1.07 2ND FLOOR
1/8" = 1'-0"

1 M1.07 1ST FLOOR
1/8" = 1'-0"

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No.	REVISIONS	DATE

KEYPLAN

TITLE:
BUILDING 71
HVAC PLAN
FIRST & SECOND FLOORS

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: 1/8"=1'-0"

J. S. CATAUDELLA
No. 3696
REGISTERED PROFESSIONAL ENGINEER

M1.07

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3 M1.08 SEC A-A
1/8" = 1'-0"

4 M1.08 SEC B-B
1/8" = 1'-0"

5 M1.08 SEC C-C
1/8" = 1'-0"

6 M1.08 SEC D-D
1/8" = 1'-0"

7 M1.08 SEC E-E
1/8" = 1'-0"

8 M1.08 SEC F-F
1/8" = 1'-0"

2 M1.08 ATTIC
1/8" = 1'-0"

1 M1.08 3RD FLOOR
1/8" = 1'-0"

NOTE
LOCATION OF REDUCING FITTINGS CONSIDER APPEARANCE. CHANGE THEIR LOCATION ON APPROVAL ONLY.

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7/24/98

No.	REVISIONS	DATE

KEYPLAN

TITLE:
BUILDING 71
HVAC PLAN
ATTIC & THIRD FLOOR

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: 1/8"=1'-0"

J. S. CATAUDELLA
REGISTERED
PROFESSIONAL ENGINEER

M1.08

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3 / M1.09 WEST M.E.R.-PIPING
1/8"=1'-0"

4 / M1.09 EAST M.E.R.-PIPING
1/8"=1'-0"

1 / M1.09 GROUND FLOOR
1/8" = 1'-0"

2 / M1.09 CONN. SECTION
1/2"=1'-0"

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No.	REVISIONS	DATE

TITLE:
BUILDING 72 HVAC PLAN GROUND FLOOR

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: 1/8"=1'-0"

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M1.09

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1 / M1.10 FIRST FLOOR

1/8" = 1'-0"

NOTE
PROVIDE FIRE DAMPERS AT ALL DUCT PENETRATIONS OF THE CORRIDOR WALLS AND VERTICAL CHASES.

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No.	REVISIONS	DATE

KEYPLAN

TITLE:

BUILDING 72 HVAC PLAN FIRST FLOOR

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: 1/8"=1'-0"

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M1.10

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3 M1.11 ATTIC LEVEL

1/8" = 1'-0"

1 M1.11 2ND FLOOR

1/8" = 1'-0"

2 M1.11 3RD FLOOR

1/8" = 1'-0"

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No.	REVISIONS	DATE

KEYPLAN

TITLE:

BUILDING 72 HVAC PLAN 2ND, 3RD ATTIC LEVELS

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: 1/8"=1'-0"

L. S. CATAUDELLA
REGISTERED PROFESSIONAL ENGINEER

M1.11

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MARK	CAP. #/HR	SIZE	REDUCTION	SET POINT
PRV-1	5000	2"	100# TO 20#	22 #
PRV-2	7900	2 1/2"	100# TO 20#	18 #

2 / M1.12 STEAM PRESSURE REDUCING STATION
NO SCALE

1 / M1.12 GROUND FLOOR
1/8"=1'-0"

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No.	REVISIONS	DATE

KEYPLAN

TITLE:
BUILDING 73 HVAC PLAN GROUND FLOOR

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: 1/8"=1'-0"

L. S. CATAUDELLA
REGISTERED PROFESSIONAL ENGINEER

M1.12

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1 M1.13 — 2 ND FLOOR
1/8" = 1'-0"

2 M1.13 — 1 ST FLOOR
1/8" = 1'-0"

4 M1.13 — KITCHEN
1/4"=1'-0"

3 M1.13 — DETAIL CEIL. LINEAR DIFF.
NO SCALE

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No.	REVISIONS	DATE

KEYPLAN

TITLE:
BUILDING 73 HVAC PLAN 1ST & 2ND FLOORS

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: 1/8"=1'-0"

L. S. CATAUDELLA
No. 5694
REGISTERED PROFESSIONAL ENGINEER

M1.13

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1 / M1.14 ROOF
1/8" = 1'-0"

NOTE

ROOF HOLES ONLY AT DUCT PNETRATIONS.

UNIT SHALL BE LEVEL WITHIN 1/8" IN BOTH DIRECTIONS

3 / M1.14 TYPICAL RTU
NO SCALE

2 / M1.14 3 RD FLOOR
1/8" = 1'-0"

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No.	REVISIONS	DATE

KEYPLAN

TITLE:
BUILDING 73
HVAC PLAN
3RD FLOOR & ROOF

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: 1/8"=1'-0"

J. S. CATAUDELLA
PROFESSIONAL ENGINEER

M1.14

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NOTE

FOR CLARITY, ALL CONTROL VALVES AND ACCES. ARE NOT SHOWN. REFER TO SCHEMATIC

1 M1.15 MECHANICAL EQUIPMENT ROOM
1/4"=1'-0"

2 M1.15 ABSORBER STEAM PIPING
NO SCALE

3 M1.15 VERTICAL SECTION
1/4"=1'-0"

A-A M1.15 VERTICAL SECTION
1/4"=1'-0"

B-B M1.15 VERTICAL SECTION
1/4"=1'-0"

C-C M1.15 VERTICAL SECTION
1/4"=1'-0"

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No.	REVISIONS	DATE

TITLE:
BUILDING 73
MECHANICAL ROOM

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: 1/4"=1'-0"

J. S. CATAUDELLA
No. 7634
REGISTERED PROFESSIONAL ENGINEER

M1.15

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1 / M2.01 COOLING TOWER DETAIL
NO SCALE

2 / M2.01 SECONDARY PUMP DETAIL
NO SCALE

3 / M2.01 CONDENSATE RETURN SET DETAIL
NO SCALE

4 / M2.01 CONDENSATE RETURN SET DETAIL
NO SCALE

NOTE

INSURE PROVISION FOR TUBE PULL

5 / M2.01 HEAT EXCHANGER DETAIL-HEATING
NO SCALE

NOTE

INSURE PROVISION FOR TUBE PULL

6 / M2.01 HEAT EXCHANGER DETAIL-DHW
NO SCALE

NOTE

PROVIDE MECHANICAL COUPLINGS/GASKETS EQUAL TO VICTAULIC FOR PRESSURES AND FLUID TO BE HANDLED FOR VIBRATION ABSORBTION AT THE PUMP.

7 / M2.01 PUMP TRIM DETAIL
NO SCALE

MECHANICAL LEGEND

VD	VOLUME DAMPER
FD	DYNAMIC FIRE DAMPER
VSD	VARIABLE SPEED CONTROLLER
T	THERMOSTAT/TEMPERATURE SENSOR
FCV GPM	FLOW CONTROL VALVE
MAV	MANUAL AIR VENT
	VALVE
	STRAINER W/ VALVED BLOWDOWN AND CAP
	CHECK VALVE
MS	BALL VALVE W/ MEMORY STOP
	BUTTERFLY VALVE

SA·GCA Architects
An association of Saccoccio & Associates And Goody, Clancy & Associates
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RENOVATION AND RESTORATION OF CENTER GENERAL COMPLEX

FOR
THE STATE OF RHODE ISLAND
DEPARTMENT OF LABOR AND TRAINING
NEW HEADQUARTERS BUILDING
PONTIAC AVENUE
CRANSTON, RHODE ISLAND

7/24/98

No.	REVISIONS	DATE

TITLE:

HVAC DETAILS

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: AS NOTED

J. S. CATAUDELLO
NO. 3694
REGISTERED PROFESSIONAL ENGINEER

M2.01

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AIR HANDLING UNITS (ROOF MOUNTED - (4 PIPE)

MARK	SERV/LOCATION	AIR CAPACITY TOTAL CFM	AIR CAPACITY MIN. OA CFM	AIR CAPACITY ESP in WG	AIR CAPACITY TSP in WG	MIN.COIL AREA FT.SQ	MAX. OUTLET VEL.	COOLING CAPACITY EAT DB/WB	COOLING CAPACITY LAT DB/WB	COOLING CAPACITY TOTAL MBH	COOLING CAPACITY SENS. MBH	COOLING CAPACITY FLOW GPM	HEATING CAPACITY EAT/LAT DB/DB	HEATING CAPACITY TOTAL MBH	HEATING CAPACITY FLOW GPM	ELECTRICAL FAN H.P. SUPPLY	ELECTRICAL FAN H.P. EXH.	ELECTRICAL V / ø	OP. WT. #	MODEL	NOTE(S)
RTU 70-1	BLDG. 70 / ROOF	12780	1400	1.6	3.4	24.4	2500	76/64	55/53	420	295.2	70	67/90	325	26	15	5	480/3	7000	#25T	1,2
RTU 70-2	BLDG. 70 / ROOF	12500	1400	1.6	3.4	24.4	2500	76/64	55/53	411	288.8	70	67/90	320	26	15	5	480/3	7000	#25T	1,2
RTU 70-3	BLDG. 70 / ROOF	4300	650	.8	2.8	7.5	2100	77/65	55/53	126	99.5	21	65/95	143	10	5	2	480/3	4000	#8T	1
RTU 70-4	BLDG. 70 / ROOF	3980	650	.8	2.8	7.5	2100	77/65	55/53	122	96.3	21	65/95	133	10	5	2	480/3	4000	#8T	1
RTU 73-1	BLDG 73 / ROOF	10900	1600	.7	2.5	20.8	2100	77/65	55/53	400	265	68	65/90	300	25	10	5	480/3	7000	#21T	1
RTU 73-2	BLDG 73 / ROOF	7860	800	.7	2.5	14.2	2250	76/64	55/53	260	185	45	70/90	175	15	7.5	3	480/3	5500	#14T	1
RTU 73-3	BLDG 73 / ROOF	10300	1800	1.3	3.3	20.8	2100	77/65	55/53	380	250	65	65/90	285	25	10	5	480/3	7000	#21T	1,2

1. BASED ON TRANE - T SERIES
2. PROVIDE INLET VANES FOR VAV APPLICATION

AIR HANDLING UNITS (4 PIPE)

MARK	SERV/LOCATION	AIR CAPACITY TOTAL CFM	AIR CAPACITY MIN. OA CFM	AIR CAPACITY SUP. FAN ESP	AIR CAPACITY SUP. FAN TSP	AIR CAPACITY RET. FAN ESP	AIR CAPACITY RET. FAN TSP	MIN.COIL AREA FT.SQ	COOLING CAPACITY EAT DB/WB	COOLING CAPACITY LAT DB/WB	COOLING CAPACITY TOTAL MBH	COOLING CAPACITY SENS. MBH	COOLING CAPACITY FLOW GPM	COOLING CAPACITY MAX. Δ Pw	PREHEAT CAPACITY EAT/LAT DB/DB	PREHEAT CAPACITY TOTAL MBH	PREHEAT CAPACITY FLOW GPM	PREHEAT CAPACITY MAX. Δ Pw	HEATING CAPACITY EAT/LAT DB/DB	HEATING CAPACITY TOTAL MBH	HEATING CAPACITY FLOW GPM	HEATING CAPACITY MAX. Δ Pw	ELECTRICAL FAN H.P. SUPPLY	ELECTRICAL FAN H.P. RET.	ELECTRICAL V / ø	OP. WT. #	MODEL	NOTE(S)
AHU 69A-1	BLDG 69A ATTIC	6545	650	.3	1.5	.35	.35	12.3	76/64	55/54	148	132	25	-	-	-	-	-	68/90	159	15	-	5	2	480/3	2200	#12A	1,4
AHU 69A-2	BLDG 69A ATTIC	6930	680	.3	1.5	.4	.4	12.3	76/64	55/54	206	158	28	-	-	-	-	-	68/90	166	15	-	5	2	480/3	2200	#12A	1,4
AHU 69-1	BLDG 69 ATTIC	7640	770	.5	1.5	.4	.4	14.2	76/64	55/54	230	197	40	-	-	-	-	-	68/90	185	15	-	5	2	480/3	2400	#14A	1,4
AHU 69-2	BLDG 69 ATTIC	4020	400	.4	1.5	.3	.3	7.5	76/64	55/54	121	93	20	-	-	-	-	-	68/90	98	8	-	2	1	480/3	1600	#8A	1,4
AHU 69-3	BLDG 69 ATTIC	5410	550	.4	1.0	.3	.3	12.3	76/64	55/54	163	125	28	-	-	-	-	-	68/90	131	11	-	2	1 1/2	480/3	2200	#12A	1,4
AHU 69-4	BLDG 69 ATTIC	5450	550	.4	1.0	.4	.4	12.3	76/64	55/54	165	126	28	-	-	-	-	-	68/90	132	11	-	2	1 1/2	480/3	2200	#12A	1,4
AHU 69-5	WEST MECH. RM/GRND FLR	2975	300	.5	1.75	.5	.5	5.9	76/64	55/54	90	74	15	-	-	-	-	-	68/90	72	6	-	2	3/4	480/3	1020	#6A	1,4
AHU 69-6	EAST MECH. RM./GRND FLR	1015	300	.5	1.5	-	-	2.8	78/65	55/54	34	26	7	-	-	-	-	-	55/90	40	3.5	-	3/4	-	480/3	225	BCHA 36	1,3
AHU 71-1	BLDG 71 ATTIC	6120	620	.5	1.5	.5	.5	12.3	76/64	55/54	185	142	31	-	-	-	-	-	68/90	148	12	-	5	3	480/3	2200	#12A	1,4
AHU 71-2	BLDG 71 ATTIC	9835	1000	.5	1.5	.5	.5	20.8	76/64	55/54	297	228	50	-	-	-	-	-	68/90	240	20	-	5	3	480/3	3000	#21A	1,4
AHU 71-3	BLDG 71 ATTIC	6800	680	.5	1.5	.5	.5	12.3	76/64	55/54	206	157	35	-	-	-	-	-	68/90	165	15	-	5	3	480/3	2200	#12A	1,4
AHU 71-4	BLDG 71 ATTIC	8675	870	.5	1.5	.5	.5	16.8	76/64	55/54	260	198	45	-	-	-	-	-	68/90	210	17	-	5	5	480/3	2900	#17A	1,4
AHU 72-1	BLDG 72 GROUND	940	940	.6	1.5	-	-	2.8	86/74	55/54	60	36	10	-	-	-	-	-	0/70	80	3	-	.75	-	480/3	225	BCHA 36	1,3
AHU 72-2	BLDG 72 GROUND	830	415	.5	1.5	-	-	1.8	80/70	60/59	32	18	8	-	-	-	-	-	40/75	32	1.5	-	.75	-	480/3	200	BCHA 24	1,3
AHU 72-3	BLDG 72 GROUND	1200	600	.5	1.5	-	-	2.8	80/70	60/59	45	26	9	-	-	-	-	-	40/75	46.2	2.5	-	.75	-	480/3	225	BCHA 36	1,3
AHU 72-4	WEST FACE ATTIC	2755	275	.5	1.75	.5	.5	5.9	76/64	55/54	84	70	14	-	-	-	-	-	68/90	67	5.5	-	2	1.5	480/3	1300	#6A	1,4
AHU 72-5	EAST FACE ATTIC	3120	310	.5	1.75	.5	.5	5.9	76/64	55/54	95	78	16	-	-	-	-	-	68/90	76	6.5	-	2	1.5	480/3	1300	#6A	1,4
AHU 73-1	CAFETERIA / M.E.R.	7200	2600	.6	1.5	-	-	14.2	80/67	53/52	360	215	60	-	-	-	-	-	50/90	32	25	-	5	-	480/3	2500	#14	1
AHU 73-2	KITCHEN M.U.A.	1400	1500	.5	2.0	-	-	3.3	90/76	55/54	145	58	20	-	5/35	49.5	55#/HR	-	35/80	75	6	-	1	-	480/3	2500	#3A	1,2

1. BASED ON TRANE @45°F EWT (CLG); 180°F EWT (HTG).
2. PROVIDE STEAM PREHEAT COIL. HEATING CAPACITY BASED ON 20 PSIG STEAM.
3. HV AUX COIL FOR 4 PIPE DPS.
4. PROVIDE ECONOMIZER AND RETURN AIR FAN SECTION.

FAN COILS (4 PIPE)

MARK	SERVICE/LOCATION	CFM	OA	ESP	COOLING MBH TOTAL	COOLING MBH SENS	GPM	MAX. Pw	HEATING MBH	GPM	MAX. Pw	WATTS	ELEC V / ø	OPER. WT. #	TYPE	MODEL	NOTE(S)
HFC 69A-1	ENTRY STAIR	350	-	-	11.2	7.9	2.3	9.0	33.5	2.3	7.4	100	120/1	115	HOR CAB	D 040	1
VFC 69A-2	STAIR, 2ND FLR	320	-	-	10.2	7.4	2.2	8.2	31.2	2.2	6.8	100	120/1	115	VERT CAB	B 040	1
VFC 69/69A-1	69/69A CONN.	260	-	-	7.2	5.3	1.5	3.7	23.9	1.5	3.0	85	120/1	80	VERT CAB	B 030	1
HFC 69/69A-2	69/69A CONN.	290	-	-	7.6	5.7	1.6	4.0	25.9	1.6	3.3	85	120/1	60	HOR CAB	D 030	1
VFC 69/69A-3	69/69A CONN.	260	-	-	7.2	5.3	1.5	3.7	23.9	1.5	3.0	85	120/1	80	VERT CAB	B 030	1
HFC 69/69A-4	69/69A CONN.	450	-	.25	10.8	9.6	3.3	4.6	51.6	3.3	4.1	125	120/1	80	HOR RESC	E 040	1
HFC 69/69A-5	69/69A CONN.	450	-	.25	10.8	9.6	3.3	4.6	51.6	3.3	4.1	125	120/1	80	HOR RESC	E 040	1
VFC 69-1	STAIR, GRND FLR-WEST	320	-	-	10.6	7.4	2.2	8.2	31.2	2.2	6.8	100	120/1	115	VERT, CAB	B 040	1
VFC 69-2	STAIR, 2ND FLR-WEST	320	-	-	10.6	7.4	2.2	8.2	31.2	2.2	6.8	100	120/1	115	VERT, CAB	B 040	1
VFC 70-1	ENTRY VEST. / BLDG 70	320	-	-	10.6	7.9	2.3	9.0	31.2	2.3	6.8	100	120/1	115	VERT REC	H 040	1
VFC 70-2	ELEV. LOBBY / BLDG 70	190	-	-	4.7	3.8	1.0	6.0	14.7	1.0	3.7	85	120/1	60	VERT REC	H 020	1
VFC 70-3	OFFICE AREA / BLDG 70	320	40	-	10.0	7.9	2.3	9.0	31.2	2.3	6.8	100	120/1	115	VERT CAB	B 040	1
VFC 70-4	BREAK ROOM / BLDG 70	520	150	-	13.4	7.9	2.3	9.0	39.8	2.8	9.3	125	120/1	130	VERT CAB	B 060	1
VFC 70-5	TOILETS / BLDG 70	190	50	-	4.7	3.8	1.0	6.0	14.7	1.0	3.7	85	120/1	60	VERT CAB	B 020	1
VFC 70-6	STAIR / BLDG 70	190	-	-	4.7	3.8	1.0	6.0	14.7	1.0	3.7	85	120/1	60	VERT CAB	B 020	1
VFC 70-7	FOYER STAIR / BLDG 70	320	-	-	10.6	7.4	2.3	9.0	31.2	2.3	6.8	100	120/1	115	VERT CAB	B 040	1
VFC 71-1	STAIR, 1ST FLR	320	-	-	10.6	7.4	2.3	9.0	31.2	2.3	6.8	100	120/1	115	VERT CAB	B 040	1
VFC 71-2	STAIR, 3RD FLR	320	-	-	10.6	7.4	2.3	9.0	31.2	2.3	6.8	100	120/1	115	VERT CAB	B 040	1
VFC 72-1	WORK OUT-GROUND	260	-	-	7.2	5.3	1.5	3.7	25.9	1.5	3.0	85	120/1	85	VERT CAB	B 030	1
VFC 72-2	CORRIDOR-GROUND	260	-	-	7.2	5.3	1.6	3.7	25.9	1.5	3.0	85	120/1	85	VERT CAB	B 030	1
VFC 72-3	VARIOUS	260	-	-	7.2	5.3	1.5	3.7	25.9	1.5	3.0	85	120/1	85	VERT CAB	B 030	1
VFC 72-4	VARIOUS	350	-	-	8.1	6.4	1.7	3.7	26.2	1.7	3.1	100	120/1	115	VERT CAB	B 040	1
VFC 72-5	CONFERENCE ROOMS	690	-	-	20.1	14.3	4.1	7.8	64.5	4.1	7.0	120	120/1	150	VERT CAB	B 080	1
HFC 72-6	CORRIDOR-1ST FLR	500	-	-	16.0	11.9	3.3	4.6	51.6	3.3	4.1	125	120/1	120	VERT REC	H 060	1,2
VFC 73-1	MAIN FOYER	350	-	-	11.2	7.9	2.3	9.0	33.5	2.3	7.4	100	120/1	80	VERT REC	H 040	1
HFC 73-3	BSMNT. CORR.	500	-	-	10.2	8.4	2.2	6.0	33.8	2.2	5.0	125	120/1	125	HOR CONC	C 060	1,2
VFC 73-4	1ST FLR STAIR	320	-	-	10.6	7.4	2.3	9.0	31.2	2.3	6.8	100	120/1	115	VERT CAB	B 040	1
VFC 73-5	3RD FLR STAIR	320	-	-	10.6	7.4	2.3	9.0	31.2	2.3	6.8	100	120/1	115	VERT CAB	B 040	1
HFC72/73-1	72/73 CONN.-GRND FLR	340	-	.2	8.6	6.5	2.0	5.2	29.1	2.0	4.3	145	120/1	70	HOR CONC	C 030	1,2
HFC72/73-2	72/73 CONN.-1ST FLR	480	-	.3	10.2	8.4	2.2	5.9	33.8	2.2	5.0	210	120/1	100	HOR CONC	C 040	1,2
HFC72/73-3	72/73 CONN.-2ND FLR	480	-	.3	10.2	8.4	2.2	5.9	33.8	2.2	5.0	210	120/1	100	HOR CONC	C 040	1,2
HFC72/73-4	72/73 CONN.-3RD FLR	480	-	.3	10.2	8.4	2.2	5.9	33.8	2.2	5.0	210	120/1	100	HOR CONC	C 040	1,2
HFC69/73-5	EAST CONN-GRND FLR	475	-	.2	9.7	7.9	2.0	5.4	31.6	2.0	4.6	210	120/1	80	HOR REC	H 040	1,2
HFC69/73-6	EAST CONN.-MAIN FLR	700	-	.2	18.8	14.3	4.0	6.6	60.1	4.0	6.0	320	120/1	120	HOR REC	H 060	1,2,3
HFC69/73-7	EAST CONN.-MAIN FLR	600	-	.2	18.8	14.3	4.0	6.6	60.1	4.0	6.0	320	120/1	120	HOR REC	H 060	1,2,3
HFC71/73-8	WEST CONN.-MAIN FLR	700	-	.2	18.8	14.3	4.0	6.6	60.1	4.0	6.0	320	120/1	120	HOR REC	H 060	1,2,3
HFC71/73-9	WEST CONN.-MAIN FLR	600	-	.2	18.8	14.3	4.0	6.6	60.1	4.0	6.0	320	120/1	120	HOR REC	H 060	1,2,3

1. BASED ON TRANE @ ARI COND. COOLING: EAT=80°FDB/67°FWB EWT=45°F, 10° TD; HEATING: EAT 70°F, EWT 180°F. (2 COILS)
2. PROVIDE HIGH STATIC MOTOR
3. PROVIDE R.A. T-STAT, CONTINUOUS FAN.

ABSORPTION CHILLERS (SINGLE EFFECT)

MARK	SERVICE/LOCATION	TONS	CHILLED WATER (deg F) GPM	EVT	LVT	P.D.	PASS	CONDENSER/ABSORBER GPM	EVT	LVT	P.D.	PASS	STEAM #/HR	PSIG	PUMP HP	VOLT/ø	OPER WT.	MODEL	NOTE(S)
ABS-1	MAIN M.E.R.	255	600	54	44	11.5	3	920	85	101	25	1+3	4850	13.0	7.5	480/3	19150	ABSC-256	1
ABS-2	MAIN M.E.R.	255	600	54	44	11.5	3	920	85	101	25	1+3	4850	13.0	7.5	480/3	19150	ABSC-256	1

1. BASED ON TRANE

CABINET HEATERS

MARK	SERVICE/LOCATION	CFM	OA	ESP	HEATING MBH	GPM	MAX. Pw	WATTS	ELEC V / ø	OPER. WT. #	TYPE	MODEL	NOTE(S)
CUH73-1	BSMNT / BLDG 73	380	-	-	21.7	1.0	1.1	85	120/1	115	V CAB,SLPTOP	B040	1
CUH73-2	BSMNT / BLDG 73	380	-	-	21.7	1.0	1.1	85	120/1	115	V CAB,SLPTOP	B040	1
CUH73-3	REAR ENRTRY / BLDG 73	300	-	-	23.1	1.0	1.3	65	120/1	100	V FULLY REC.	H030	1

1. BASED ON TRANE - EAT 70°F, EWT 180°F.

COOLING TOWER

MARK	SERV/LOCATION	GPM	RANGE EWT	RANGE LVT	APPR.	CFM	ELECT. CHAR. FAN HP	ELECT. CHAR. FAN HTRS.	V/ø	OPER. WEIGHT	MODEL	NOTE(S)
CT-1	AT GRADE	1840	101.5	85	9°	217,400	2@ 20	2@12KW	480/3	35,000	33373-2	1

1. BASED ON BALTIMORE AIR COIL @76°FWB, DOUBLE CELL.

HEAT EXCHANGER (STEAM / WATER)

MARK	SERV/LOCATION	NET MBH	EWT	LWT	GPM	MAX. Δ Pw	DIA X L	PASSES	SQ.FT HTG. SURF.	MODEL	NOTE(S)
HEX-1	HTG WTR/M.E.R.	10,600	155°	185°	720	3.2	16 X 72	2	225.7	WS-1606	1
HEX-2	DHW / M.E.R.	702	40°	180°	10	< 1.0	6 X 48	4	18.3	WSX-0604	1,2

1. BASED ON ARMSTRONG @18 PSIG STEAM.
2. ALL BRONZE, DOUBLE WALL CONSTRUCTION FOR DHW SERVICE.

PUMPS

MARK	SERVICE/LOCATION	TYPE	FLOW GPM	THD FT.	SIZE	RPM	MOTOR HP	ELEC V / ø	MODEL	NOTE(S)
PCHVP-1	PRIM. CHV / MAIN M.E.R.	BMTD	600	30	6X5X10	1200	7.5	480/3	4030	1
PCHVP-2	PRIM. CHV / MAIN M.E.R.	BMTD	600	30	6X5X10	1200	7.5	480/3	4030	1
PHVP-1	PRIM. HV / MAIN M.E.R.	BMTD	360	20	5X4X8V	1200	3	480/3	4030	1,2
PHVP-2	PRIM. HV / MAIN M.E.R.	BMTD	360	20	5X4X8V	1200	3	480/3	4030	1,2
CVP-1	COND. WTR / MAIN M.E.R.	BMTD	920	75	6X5X10	1800	25	480/3	4030	1
CVP-2	COND. WTR / MAIN M.E.R.	BMTD	920	75	6X5X10	1800	25	480/3	4030	1
SCHVP-69/72	SEC. CHV / MAIN M.E.R.	BMTD	345	100	4X3X11.5	1800	15	480/3	4030	1,3
SCHVP-70/71	SEC. CHV / MAIN M.E.R.	BMTD	340	100	4X3X11.5	1800	15	480/3	4030	1,3
SCHVP-73	SEC. CHV / MAIN M.E.R.	BMTD	280	45	4X3X8	1800	5	480/3	4030	1,3
FUTURE BLD	SEC. CHV / MAIN M.E.R.	BMTD	-	-	-	-	-	-	-	4
SHVP-69/72	SEC. HV / MAIN M.E.R.	BMTD	224	100	4X3X10	1800	10	480/3	4030	1,3
SHVP-70/71	SEC. HV / MAIN M.E.R.	BMTD	161	100	3X2.5X10	1800	7.5	480/3	4030	1,3
SHVP-73	SEC. HV / MAIN M.E.R.	BMTD	160	45	3X2.5X8	1800	3.0	480/3	4030	1,3
FUTURE BLD	SEC. CHV / MAIN M.E.R.	BMTD	-	-	-	-	-	-	-	4

1. BASED ON ARMSTRONG
2. PUMPS OPERATE IN PARALLEL.
3. PUMP MOTOR SHALL BE FOR INVERTER DUTY
4. N.I.C.

HOT WATER UNIT HEATERS (HW)

MARK	SERVICE/LOCATION	CFM	CAPACITY MBH	GPM	ELEC V / ø	MAX. Δ Pw	MOTOR HP	MODEL	NOTE(S)
UH 69A-1	ATTIC MECH. RM	1790	630	5	120/1	< 1.0	1/6	122-P	1
UH 69-1	MECH RMS / GRND FLR	280	4.0	1.0	120/1	< 1.0	1/25	18-S	1
UH 69-2	ATTIC-WEST MECH RM	2620	90.8	7.5	120/1	< 1.0	1/6	166-P	1
UH 69-3	ATTIC-EAST MECH RM	1528	52.0	4.0	120/1	< 1.0	1/8	102-P	1
UH 70-1	MECH RM / BLDG 70	280	4.0	1.0	120/1	< 1.0	1/25	18-S	1
UH 71-1	MECH RM / 1ST FLR	280	4.0	1.0	120/1	< 1.0	1/25	18-S	1
UH 71-2	ATTIC-EAST MECH. RM	2620	90.8	7.5	120/1	< 1.0	1/6	166-P	1
UH 71-3	ATTIC-WEST MECH. RM	1528	52.0	4	120/1	< 1.0	1/8	102-P	1
UH 72-1	ATTIC-MECH. RM	2630	90.8	7.5	120/1	< 1.0	1/6	166-P	1
UH 73-1	M.E.R. / BLDG 73	815	27.4	3.0	120/1	< 1.0	1/20	60-S	1
UH 73-2	STORAGE / BSMNT 73	543	14.3	1.5	120/1	< 1.0	1/20	38-S	1
UH 73-3	STORAGE / BSMNT 73	543	12.0	1.0	120/1	< 1.0	1/20	38-S	1
UH 73-4	SPRKLR. STOR / BSMNT 73	315	6.0	1.0	120/1	< 1.0	1/25	20-S	1

1. BASED ON TRANE @180° EWT WITH LOUVER FIN OR LOUVER CONE DIFFUSER AS APPROPRIATE.

FINNED TUBE RADIATION

MARK	SERVICE/LOCATION	BTU/FT	ELEMENT MAT	ELEMENT TUBE	ELEMENT SIZE	ELEMENT FPI	ENCLOSURE TYPE	ENCLOSURE HT	MODEL	NOTE(S)
XX	BSMNT 69A	700	ALUM	COPPER	3/4	40	EXPANDED METAL	-	-	1
XX	-	-	-	-	-	-	-	-	-	1

XX — TYPE / ACTIVE LENGTH

1. BASED ON STERLING

SA·GCA Architects
An association of Saccoccio & Associates And Goody, Clancy & Associates
28 Garfield Avenue, Cranston, R.I. 02920
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RENOVATION AND RESTORATION OF CENTER GENERAL COMPLEX

FOR
THE STATE OF RHODE ISLAND
DEPARTMENT OF LABOR AND TRAINING
NEW HEADQUARTERS BUILDING
PONTIAC AVENUE
CRANSTON, RHODE ISLAND

CAI CONSULTING ENGINEERS
CATAUDELLA ASSOCIATES, INC.
1223 MINERAL SPRING AVENUE
NORTH PROVIDENCE, RI 02904
401-728-1122

7/24/98

No.	REVISIONS	DATE

TITLE: HVAC SCHEDULES

SA Job No. 97112	GCA Job No. 3940
DRAWN: XX	DATE:
CHECKED: JSC	DRAWING: NO SCALE

L. S. CATAUDELLA, NO. 3694, REGISTERED PROFESSIONAL ENGINEER

M3.01

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FANS

MARK	SERVICE/LOCATION	CFM	TSP	FAN TYPE	WHEEL TYPE	WHEEL DIA.	MAX RPM	MOTOR HP	ELEC V / ø	OPER WEIGHT	MODEL	NOTE(S)
REF69A-1	TOILETS/ROOF 69A	450	.5	ROOF/D	CENT	8	1400	1/8	120/1	60	VEDK 08	1, 2
REF69A-2	BREAK RMS/ROOF 69A	200	.5	ROOF/D	CENT	6	1000	1/8	120/1	60	VEDK 06	1, 2
EF69A-3	ELEC. RM / BSMNT	800	.25	INLN/D	PROP	12	1500	1/6	120/1	50	LYDK 12K2	1, 2
EF69-1	TOILETS/ATTIC	1350	.63	INLN/D	CENT	15	1025	1/3	120/1	100	VIDK 15	1, 2
EF69-4	BREAK RMS/ATTIC	300	.5	INLN/D	CENT	-	1050	230W	120/1	-	VCDB 045	1, 2
RAF69-5	AHU 69-5/GRND STORAGE	2775	.5	INLN/D	CENT	18	1000	15bW	480/3	100	VIBK 18	1, 2
RAF69-6	AHU 69-6/GRND JANITORS	1015	.38	INLN/D	CENT	10	1500	1/2	480/3	100	VIDK 10	1, 2
EF69-7	ELEV MACHINE RM	60	.25	CEIL/D	CENT	-	1500	35W	120/1	-	VCDB 008	1, 2
EF69-8	GRND FLR JANITORS CLOSET	60	.25	CEIL/D	CENT	-	1500	35W	120/1	-	VCDB 008	1, 2
EF69-9	ELEC. RM. / LOWER LEVEL	800	.38	INLN/D	CENT	10	1200	1/3	120/1	80	VIDK 10	1, 2
EF 70-1	ELEV. MACH. RM. / BLDG 70	300	.5	CEIL/D	CENT	-	1100	420W	120/1	-	VCDB 075	1,2
REF 70-2	TOILETS / BLDG 70	1200	.5	ROOF	CENT	10	1500	1/2	480/3	75	VEDK 10	1,2
REF 70-3	MECH. RM. / 1ST FLR.	800	.25	PNL/D	PROP	12	1200	1/3	120/1	50	LYDK 12K2	1
EF71-1	TOILETS/ATTIC	1350	.63	UTILITY	CENT	15	1025	1/3	120/1	100	VIDK 15	1, 2
EF71-2	JANITORS CLOS./ATTIC	120	.38	INLN/D	CENT	-	1575	150W	120/1	-	VCDB 030	1, 2
EF71-3	BREAK RMS	300	.5	INLN/D	CENT	-	1050	230W	120/1	-	VCDB 045	1, 2
EF71-4	ELEC. RM. EXH./1ST FLOOR	980	.25	PNL/D	PROP	14	1200	1/2	480/3	50	LYDK 14P2	1
EF72-1	WOMANS TOILETS, SHOWERS	175	.38	INLN/D	CENT	-	1575	150W	120/1	-	VCDB 030	1, 2
EF72-2	MENS TOILETS, SHOWRRS	250	.38	INLN/D	CENT	-	1100	230W	120/1	-	VCDB 045	1, 2
EF72-3	WORK ROOM, WORKOUT	200	.25	CEIL/D	CENT	-	1600	150W	120/1	-	VCDB 030	1, 2
EF72-4	ELECTRICAL ROOM	800	.25	PNL/D	PROP	12	1500	1/6	120/1	-	LYDK 12K2	1.
EF72-5	NORTH TOILETS	775	.38	INLN/D	CENT	-	1050	350W	120/1	-	VCDB 095	1, 2
RAF72-6	AHU72-2 / GRND MECH	830	.50	INLN/D	CENT	10	1300	1/2	480/3	85	VIDK 10	1, 2
RAF72-7	AHU72-3 / GRND MECH	1000	.50	INLN/D	CENT	10	1500	1/2	480/3	85	VIDK 10	1, 2
EF72-8	PRIV.TOILET/ ATTIC	75	.38	INLN/D	CENT	-	1000	110W	120/1	85	VCDB 015	1, 2
EF72-9	BREAK RMS, CONF./ATTIC	200	.35	INLN/D	CENT	-	1575	150W	120/1	-	VCDB 030	1, 2
EF 73-1	KIT. TOILET / BLDG 73	75	.38	CEIL/D	CENT	-	1325	60W	120/1	-	VCDB 010	1,2
REF 73-2	KITCHEN HOOD / BLDG 73	1600	1.5	ROOF/B	CENT	15	1450	1 1/2	480/3	130	VRBK 15	1,3
EF 73-3	BREAK ROOM / 2ND FLR	100	.25	CEIL/D	CENT	-	1625	110W	120/1	-	VCDB 015	1,2,4
EF 73-4	BREAK ROOM / 3RD FLR	100	.25	CEIL/D	CENT	-	1625	110W	120/1	-	VCDB 015	1,2,4
REF 73-5	TOILETS/ROOF	1350	.5	ROOF/D	CENT	12	1500	1/2	480/3	70	VEDK 12	1,2
REF 73-6	ELEV MACHINE RM/ ROOF	830	.5	ROOF/D	CENT	10	1200	1/4	120/1	85	VEDK 10	1,2
REF 73-7	M.E.R. VENT.	3500	.125	PNL/D	PROP	21	1000	1/2	480/3	100	LYDK 21P3	1,5

1. BASED ON CARNES
2. PROVIDE VARIABLE SPEED SWITCH AT FAN FOR BALANCING
3. SHALL MEET NFPA 96 REQUIREMENTS FOR GREASE LADEN AIR, PROVIDE EXTENDED CURB WITHOUT DAMPER
4. PROVIDE VXCAB 245 EXTTRUDED ALUM. BRICK VENT.
5. PROVIDE WALL COLLAR, MENA 1 DISC. ALL ALUMINUM CONSTRUCTION.

COMPUTER ROOM UNITS

MARK	SERV/LOCATION	AIR CAPACITY TOTAL	AIR CAPACITY ESP	AIR CAPACITY FAN HP	SYSTEM CAPACITY TOT. MBH	SYSTEM CAPACITY SEN MBH	REHEAT KW	REHEAT STGS.	HUMIDIFIER #/HR	HUMIDIFIER KW	ELECTRICAL CHAR. V / ø	ELECTRICAL CHAR. FLA	ELECTRICAL CHAR. OPD	OPER. WEIGHT	MODEL	NOTE(S)
AC-1	SERVER ROOM	2300	.3	1.0	39.8	37.6	9	2	11	4.8	460/3	20.4	25	600	BF042A	1
AC-2	COMP. RM. (SM)	3000	.3	2.0	59.9	53.0	15	2	11	4.8	460/3	33.1	45	650	BF067A	1
AC-3	COMP. RM. (LG)	3000	.3	2.0	59.9	53.0	15	2	11	4.8	460/3	33.1	45	650	BF067A	1
AC-4	COMP. RM. (LG)	3000	.3	2.0	59.9	53.0	15	2	11	4.8	460/3	33.1	45	650	BF067A	1

1. BASED ON LIEBERT, WITH INFARED HUMIDIFIER

AIR COOLED CONDENSER UNITS

MARK	SERVICE/LOCATION	CAP. MBH	ELECTRICAL CHARACTERISTICS V / ø	HP	FLA	OPD	OPER WEIGHT	MODEL	NOTE(S)
CU 1	AC-1 / AT GRADE	39.8	480/3	3/4	2.4	15	300	CSL-083L	1
CU 2	AC-2 / AT GRADE	59.9	480/3	3/4	2.4	15	300	CSL-083L	1
CU 3	AC-3 / AT GRADE	59.9	480/3	3/4	2.4	15	300	CSL-083L	1
CU 4	AC-4 / AT GRADE	59.9	480/3	3/4	2.4	15	300	CSL-083L	1

1. BASED ON LIEBERT, 95°F AMBIENT GROSS. PROVIDE FAN SPEED CONTROL FOR MIN. 0°F AMB. OPERATIONS. 5/8 OD LIQ. 7/8 OD HOT GAS.

VAV MODULES

MARK	SERVICE/LOCATION	TYPE	SERIES	CFM MAX	CFM MIN	MAX. APD	HV REHEAT MBH	HV REHEAT GPM	HV REHEAT MAX. WPD	MODEL	NOTE(S)
VAV69-1	CONF. RM/ 2ND FLOOR	THROT	AVV	900	450	.25	17.0	2.0	2.0	10	1
VAV69-2	CONF. RM./ 1ST FLOOR	THROT	AVV	900	450	.25	17.0	2.0	2.0	10	1
VAV69-3	MEETNG RM./ GRND FLOOR	THROT	AVV	500	250	.25	12.5	3.0	2.8	8	1
VAV70-1	CONF. RM/ 2ND FLOOR	THROT	AVV	1300	650	.25	25.0	3.0	< 1.0	12	1,2
VAV70-2	CONF. RM/ 3RD FLOOR	THROT	AVV	1300	650	.25	25.0	3.0	< 1.0	12	1,2
VAV71-1	CONF. RM/ 3RD FLOOR	THROT	AVV	900	450	.25	17.0	2.0	2.0	10	1
VAV71-2	CONF. RM./ 2ND FLOOR	THROT	AVV	900	450	.25	17.0	2.0	2.0	10	1
VAV72-1	CONF. RM.	THROT	AVV	500	250	.25	17.0	3.0	2.8	8	1
VAV 73-1	MTG RM / 3RD FLR	THROT	AVV	1800	900	.25	35.0	4.0	1.7	14	1
VAV 73-2	ASSOC DIR / 3RD FLR	THROT	AVV	900	450	.25	17.0	2.0	2.0	10	1
VAV 73-3	CONF RM / 3RD FLR	THROT	AVV	800	400	.25	17.0	2.0	2.0	10	1
VAV 73-4	2ND MTG RM / FOYER	THROT	AVV	1700	850	.25	35.0	4.0	1.7	14	1
VAV 73-5	HRG ROOM / 2ND FLR	THROT	AVV	640	320	.30	12.5	3.0	2.8	8	1
VAV 73-6	SUPERVISOR / 2ND FLR	THROT	AVV	500	250	.25	12.5	3.0	2.8	8	1
VAV 73-7	CONF RM / 1ST FLR	THROT	AVV	600	300	.25	12.5	3.0	2.8	8	1
VAV 73-8	CLASSROOM / 1ST FLR	THROT	AVV	600	300	.25	12.5	3.0	2.8	8	1

1. BASED ON CARNES AVV SERIES
2. 1 ROW HV COIL, AND SOUND ATTENUATOR

ELECTRIC HEATERS

MARK	SERVICE/LOCATION	TOTAL CAPACITY	ELECT. CHAR.	* MODEL	NOTE(S)
EUH69A-1	ELEC. SPACES/BLDG 69A	3.0 KW	208/1	MUH03-81	1
EUH71-1	ELEC. RM /BLDG 71	3.0 KW	208/1	MUH03-81	1
EUH72-1	VARIOUS/BLDG 72	3.0 KW	208/1	MUH03-81	1

1. BASED ON Q-MARK W/UNIT MOUNTED T-STAT, UNIVERSAL SUPPORT

KITCHEN EXHAUST HOOD

MARK	CFM	SIZE	MAX Δ P	OPER WGHT	MODEL	REMARKS
EH-1	1600	96X48	1.0	450 #	GHFW	1

1. BASED ON GREENHECK, SINGLE SHELL, FULL COMPENSATING WITH FIRE DAMPER IN SUPPLY COLLAR

CONDENSATE RETURN SETS (DUPLEX)

MARK	SERVICE/LOCATION	GPM	RECEIVER (GAL)	DISC. PRESS.	ELEC V / ø	MOTOR HP	MODEL	NOTE(S)
CR-1	MECH. EQUIP. RM. / #73	75	121	30 PSIG	480/3	2 @ 1.5 hp	CVV-5030	1

1. BASED ON FEDERAL PUMP @ 3500 RPM.

LINEAR DIFFUSERS & REGISTERS

MARK	SIZE	SERVICE	SLOTS SIZE	SLOTS QTY	BLADES SPCNG	BLADES DEF.	MODEL	NOTES
LA	72X8	SUPPLY	1"	4	-	-	CHFB	1
LB	72X3.5	SUPPLY	-	-	1/4"	0°	CTQB	1,2
LC	36X3.5	SUPPLY	-	-	1/4"	0°	CTQB	1,2
LD	48X4	SUPPLY	-	-	1/4"	0°	CTQB	1,2
LE	72X4	SUPPLY	-	-	1/4"	0°	CTQB	1,2
LF	96X4	SUPPLY	-	-	1/4"	0°	CTQB	1,2
LG	72X4	SUPPLY	3/4"	3	-	-	CHDB	1
LH	48X4	SUPPLY	1"	2	-	-	CHFB	1
LI	72X4	SUPPLY	1"	2	-	-	CHFB	1
LJ	96X6	SUPPLY	-	-	1/4"	0°	CTLB	1,2,3
LK	96X8	RET	-	-	1/2"	15° UP	CWPB	1,2

1. BASED ON CARNES
2. O.B. VOLUME CONTROL DAMPER
3. DEBRIS SCREEN FOR FLOOR MOUNTING

REGISTERS, GRILLES, DIFFUSERS

MARK	SIZE	SERVICE	TYPE	REAR BLADE	MODEL	NOTES
A	6X6	SUPPLY	DIFF	-	SK	1
B	9X9	SUPPLY	DIFF	-	SK	1
C	12X12	SUPPLY	DIFF	-	SK	1
D	15X15	SUPPLY	DIFF	-	SK	1
E	18X18	SUPPLY	DIFF	-	SK	1
F	8X4	SUPPLY	REG	-	RTDAH	1,2
G	6X9	SUPPLY	DIFF	-	SK	1
H	6X12	SUPPLY	DIFF	-	SK	1
I	12X12	SUPPLY	REG	45	RTDAH	1,2
J	12X6	SUPPLY	REG	22/45	RTDAH	1,2
K	10X6	SUPPLY	REG	45	RTDAH	1,2
L	12X8	SUPPLY	REG	22/45	RTDAH	1,2
L1	18X8	SUPPLY	REG	45	RTDAH	1,2
L2	24X8	SUPPLY	REG	45	RTDAH	1,2
L3	30X10	SUPPLY	REG	-	RTDAH	1,2
L4	12X16	SUPPLY	REG	45	RTDAH	1,2
M	8X8	RET/EXH	REG	-	RTLAH	1
N	10X10	RET/EXH	REG	-	RTLAH	1
P	12X12	RET/EXH	REG	-	RTLAH	1
Q	16X16	RET/EXH	REG	-	RTLAH	1
R	22X22	RET/EXH	REG	-	RTLAH	1
S	24X18	RET	REG	-	RTLAH	1
T	22X8	RET	REG	-	RTLAH	1
U	36X8	RET	REG	-	RTLAH	1
V	20X10	RET	REG	-	RTLAH	1
W	16X12	RET	REG	-	RTLAH	1
MA	36X48	SUPPLY	REG	45	RTDAH	1,2
MB	36X48	RET	REG	-	RTHAH	1,2,3
MC	30X48	RET	REG	-	RTHAH	1,2,3
MD	24X36	RET	REG	-	RTHAH	1,2,3
ME	48X48	RET	REG	-	RTHAH	1,2,3
MF	60X36	RET	REG	-	RTHAH	1,2,3
MG	60X24	RET	REG	-	RTHAH	1,2,3
MH	48X30	RET	REG	-	RTHAH	1,2,3
MJ	24X18	RET	REG	-	RTHAH	1,2,3
MK	24X24	RET	REG	-	RTHAH	1,2,3
ML	36X60	RET	REG	-	RTHAH	1,2,3

1. BASED ON CARNES, W/ VOLUME CONTROL DAMPERS
2. DOUBLE DEFLECTION, HORIZ. FRONT BALDE.
3. HEAVY DUTY CONSRUCTION, 40° DEFLECTION. MOUNT AT 8' AFF.

LEGEND:

ONE WAY
TWO WAY CORNER
TWO WAY
THREE WAY
FOUR WAY
INDICATES TYPE AND/OR SERVICE
EXHAUST AIR
RETURN AIR
INDICATES SIZE
###
INDICATES CFM

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