

CENTRIFUGAL CHILLER SCHEDULE

| UNIT NO. | PWM UNIT NO. | LOCATION | COOLING (TONS) | REFRIG. TYPE | COMPRESSOR QUANTITY | EVAPORATOR | | | | | | | | | | CONDENSER | | | | | | | | | | FLUID | | | | | | | | | | OPERATING WEIGHT LBS. | | | | | | | | | | ELECTRICAL DATA | | | | | | | | | | OVERALL dBA | ASHRAE 90.1 COMPLIANT | MANUFACTURER AND MODEL NUMBER | NOTES |
|----------|--------------|------------------------|----------------|--------------|---------------------|------------|---------|--------|-----|-----|---------|--------|----------|-----|-----|-----------|--------------------------------|-------|-------|------|------|-------|------|-------|-------|-------|-----|-------------|-----------------------|-------------------------------|--------|---------------|--------|------------|-----|-----------------------|--|--|--|--|--|--|--|--|--|-----------------|--|--|--|--|--|--|--|--|--|-------------|-----------------------|-------------------------------|-------|
| C-1 | C-3 | MECHANICAL EQUIP. ROOM | 475 | HFC-123 | 1 | MAX GPM | MIN GPM | PD FT. | EWT | LWT | FOULING | GPM | FT. W.G. | EWT | LWT | FOULING | 100% | 75% | 50% | 25% | LRA | RLA | MCA | MCC | VOLTS | PH | HZ | OVERALL dBA | ASHRAE 90.1 COMPLIANT | MANUFACTURER AND MODEL NUMBER | NOTES | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | 810.5 | 335 | 14.5 | 56 | 42 | 0.0010 | 1404.7 | 32.3 | 85 | 95 | 0.00025 | 85% WATER/15% PROPYLENE GLYCOL | 278.2 | 150.1 | 72.0 | 43.2 | 26427 | 2169 | 399.5 | 509 | 800 | 460 | 3 | 60 | 82.6 | R-410A | 370 x 78 x 64 | 16,000 | TRANE CVHE | 1-6 | | | | | | | | | | | | | | | | | | | | | | | | |

DESIGN CONDITIONS

| PORTLAND JETPORT | INSIDE | OUTSIDE |
|------------------|---------------|-------------------|
| SUMMER | 74°F / 50% RH | 86°F DB / 73°F WB |
| WINTER | 74°F | -3°F |

NOTE: INSIDE CONDITIONS ARE FOR ADMIN. OFFICE, AND PUBLIC SPACES. OTHER SPACES SUCH AS BAGGAGE MAKEUP AREAS WILL VARY WITHIN RANGES. BAGGAGE INSPECTION SPACE TO BE MAINTAINED BETWEEN 50-80 DEG F AND 10-60% RH PER TSA STANDARDS.

1. FURNISH WITH VARIABLE FREQUENCY DRIVE.
2. CHILLER PLANT SIZED FOR PRESENT LOAD ONLY. FUTURE LOADS ARE NOT INCLUDED.
3. FURNISH WITH SOUND ATTENUATING BLANKET.

4. CHILLER IS PART OF A VARIABLE-PRIMARY FLOW SYSTEM AND SHALL BE FURNISHED WITH APPROPRIATE FLOW SENSORS AND OPERATING CONTROLS TO OPTIMIZE OPERATING EFFICIENCY AND AVOID UPSET DURING LOAD TRANSITIONS. CHILLER SHALL BE CAPABLE OF OPERATING AT 30% OF DESIGN FLOW.

5. CHILLER PLANT CONTROL SYSTEM SHALL BE STAND ALONE BUT MUST BE TRANSPARENT TO OWNERS DDC SYSTEM ALLOWING PASS THROUGH OF DATA AND COMMANDS.

OWNER SUPPLIED: SEE GENERAL NOTE B THIS SHEET

WATER TO WATER HEAT PUMP SCHEDULE

| UNIT NO. | LOCATION | WORKING FLUID | | | | | | | | | | COOLING MODE PERFORMANCE | | | | | | | | | | HEATING MODE PERFORMANCE | | | | | | | | | | ELECTRICAL DATA | | | | | | | | | | OVERALL dBA | REF. | DIMENSIONS LxWxH (IN) | OPER. WGT LBS. | MANUF. & MODEL NO. | NOTES |
|----------|------------------------|---------------|---------------------------|----------|------|----------|----------|-------------|----------|-------------|-------------|--------------------------|------------|---------------|------------|---------------|---------------|------------|----------|----------|-------------|--------------------------|-------------|-------------|------------|------------|---------------|------------|---------------|---------------|--------|-----------------|--------|---|-------|----|----|--|--|--|--|-------------|------|-----------------------|----------------|--------------------|-------|
| | | LOAD SIDE | SOURCE SIDE | MAX TONS | EER | LOAD EWT | LOAD LWT | LOAD PD FT. | LOAD GPM | LOAD LGV °F | LOAD HGV °F | SOURCE EWT | SOURCE LWT | SOURCE PD FT. | SOURCE GPM | SOURCE LGV °F | SOURCE HGV °F | COEFF. COP | LOAD EWT | LOAD LWT | LOAD PD FT. | LOAD GPM | LOAD LGV °F | LOAD HGV °F | SOURCE EWT | SOURCE LWT | SOURCE PD FT. | SOURCE GPM | SOURCE LGV °F | SOURCE HGV °F | MCA 1 | MCA 2 | MOP 1 | MOP 2 | VOLTS | PH | HZ | | | | | | | | | | |
| WHP-1 | MECHANICAL EQUIP. ROOM | 100% WATER | 85% WATER/15% PROP GLYCOL | 462 | 15.5 | 52°F | 42°F | 791.5 | 16.4 | 85°F | 95°F | 1592.7 | 32.9 | 493.6 | 2.9 | 110°F | 130°F | 605.3 | 8.9 | 39.5°F | 1676.2 | 32.9 | 500 | 498 | 600 | 600 | 460 | 3 | 60 | 82.6 | R-410A | 370 x 78 x 64 | 16,000 | MULTISTACK (6) M570XHQH HEAT PUMPS WITH (6) WIE VALVE MODULES | 1-5 | | | | | | | | | | | | |

NOTE: CAPACITIES AND GPM FLOWS ARE FOR 100% COOLING OR HEATING AND WILL NOT OCCUR IN ACTUAL OPERATION.
 1. PLANT SIZED FOR PRESENT LOAD ONLY. FUTURE LOADS ARE NOT INCLUDED.
 2. HEAT PUMPS ARE PART OF A VARIABLE-PRIMARY FLOW SYSTEM AND SHALL BE FURNISHED WITH APPROPRIATE FLOW SENSORS AND OPERATING CONTROLS TO OPTIMIZE OPERATING EFFICIENCY AND AVOID UPSET DURING LOAD TRANSITIONS. EQUIPMENT SHALL BE CAPABLE OF OPERATING AT 30% OF DESIGN FLOW.
 3. PLANT CONTROL SYSTEM SHALL BE STAND ALONE BUT MUST BE TRANSPARENT TO OWNERS DDC SYSTEM ALLOWING PASS THROUGH OF DATA AND COMMANDS.
 4. OWNER SUPPLIED: SEE GENERAL NOTE B THIS SHEET

MODULAR AIR HANDLING UNIT SCHEDULE

| UNIT NO. | PWM UNIT NO. | LOCATION | FAN DATA | | | | | | | | | | HOT WATER COIL DATA | | | | | | | | | | CHILLED WATER COIL DATA | | | | | | | | | | RETURN FAN DATA | | | | | | | | | | FILTERS | | | |
|----------|--------------|----------------------|-----------|-------------|-------------|-------------|------------|------|-----|---------|-----------|-------------|---------------------|----------|-----------------|--------------|------|-----------|--------|----------|--------|----------|-------------------------|--------------|------|-----------|-------------|-------------|------------|-----|------|-----|-----------------|------|---------|-----------|-------|----|-----|------|------|-----------|---------|-----|------|------|
| | | | TOTAL CFM | MIN. OA CFM | ESP (IN) WG | TSP (IN) WG | WHEEL TYPE | RPM | BHP | HP | TOTAL MBH | ENT TEMP °F | LVG TEMP °F | WPD (FT) | MIN. FA SQ. FT. | FINS PER FT. | ROWS | TOTAL MBH | EAT °F | LAT °F | LWT °F | WPD (FT) | MIN. FA SQ. FT. | FINS PER FT. | ROWS | TOTAL CFM | ESP (IN) WG | TSP (IN) WG | WHEEL TYPE | RPM | BHP | HP | TYPE | MERV | MIN. FA | APD (IN.) | DIRTY | | | | | | | | | |
| AHU-1 | AHU-7 | MECH. EQUIPMENT ROOM | 98,000 | 14,600 | 5.3 | 8.5 | AF | 1644 | 197 | 3 x 7.5 | 3190 | 55 | 85 | 0.18 | 319 | 130 | 110 | 1.4 | 206 | OPTIMIZE | 4 | 5014 | 80 | 67 | 50 | 49.9 | 1.0 | 707 | 42 | 56 | 9 | 206 | OPTIMIZE | 8 | 98,000 | 1.30 | 1.85 | AF | 634 | 45.3 | 3x20 | FLAT/ELEC | 8/13 | 221 | 0.85 | 2.20 |
| AHU-2 | AHU-8 | MECH. EQUIPMENT ROOM | 70,000 | 10,750 | 6.2 | 8.6 | AF | 1447 | 149 | 2 x 7.5 | 2279 | 55 | 85 | 0.18 | 228 | 130 | 110 | 4.1 | 240 | OPTIMIZE | 3 | 3600 | 80 | 67 | 50 | 49.5 | 1.0 | 505 | 42 | 56 | 12.5 | 140 | OPTIMIZE | 6 | 70,000 | 1.20 | 1.35 | AF | 631 | 27.4 | 2x20 | FLAT/ELEC | 8/13 | 97 | 0.85 | 2.20 |

NOTE: SEE CONTINUED SECTION OF SCHEDULE BELOW

MODULAR AIR HANDLING UNIT SCHEDULE (CONTINUED)

| UNIT NO. (CONT.) | SOUND PWR (dB RE 10 ⁻¹² WATTS) @ OCTAVE BAND & CENTER FREQ. (HZ) | | | | | | | | | | | | | | | | WEIGHT LB | ELECTRICAL DATA | | | DIMENSIONS L x W x H | MANUFACTURER AND MODEL NUMBER | NOTES |
|------------------|---|-----|-----|-----|-----|----|----|----|-------------------|-----|-----|-----|----|----|----|----|-----------|-----------------|----|----|----------------------|-------------------------------|-------|
| | DISCHARGE | | | | | | | | INLET AND CABINET | | | | | | | | | VOLTS | PH | HZ | | | |
| AHU-1 | 103 | 103 | 105 | 105 | 101 | 98 | 91 | 84 | 99 | 101 | 104 | 105 | 93 | 92 | 85 | 78 | 92,000 | 480 | 3 | 60 | 715' x 284' x 136' | TRANE CUSTOM AIR HANDLER | 1-7 |
| AHU-2 | 103 | 103 | 104 | 103 | 99 | 95 | 88 | 82 | 98 | 103 | 105 | 102 | 92 | 89 | 82 | 78 | 79,000 | 480 | 3 | 60 | 717' x 230' x 120' | TRANE CUSTOM AIR HANDLER | 1-7 |

NOTE:
 1. FIXED PITCH BELT DRIVE FOR VARIABLE FREQUENCY DRIVE APPLICATION
 2. FURNISH WITH HIGH EFFICIENCY DESIGN E MOTOR
 3. FURNISH W/ VFD
 4. FURNISH W/ ELECTRONIC AIR CLEANER EQUAL TO MERV 13 FILTERS AND 30% EFF. PRE FILTERS
 5. UNITS ARE PENTHOUSE TYPE WITH FACTORY INSTALLED FANS, COILS AND DAMPERS.
 6. VENDOR SHALL PROVIDE SINGLE POINT ELECTRICAL DISCONNECT FOR SUPPLY AND RETURN FANS.
 7. VENDOR SHALL PROVIDE TERMINAL JUNCTION BOX ON EXTERIOR FOR CONNECTION OF SENSORS AND CONTROLS INSTALLED AND WIRED IN UNITS AT FACTORY.

EXPANSION TANK SCHEDULE

| UNIT NO. | PWM UNIT NO. | SERVES | SYSTEM VOLUME GAL. | MIN. OPERATE TEMP °F | MAX. OPERATE TEMP °F | MIN. FILL PRESS. PSIG | MAX. OPER. PRESS. PSIG | PRESS. RED VALVE PSIG IN | PRESS. RELIEF VALVE SETTING (PSIG) | TANK VOL. GALS | DIAM. (IN) | HEIGHT (IN) | WEIGHT (LBS) | MANUFACTURER AND MODEL NUMBER | NOTES | |
|----------|--------------|-------------------|--------------------|----------------------|----------------------|-----------------------|------------------------|--------------------------|------------------------------------|----------------|------------|-------------|--------------|-------------------------------|------------|-------|
| EXT-1 | EXT-101 | CHILLED WATER | 1400 | 40 | 90 | 22 | 90 | NOTE 2 | - | 100 | 37 | 20 | 40 | 200 | TACO CA140 | 1.2 |
| EXT-2 | EXT-102 | HT HYDRONIC WATER | 4200 | 50 | 180 | 22 | 120 | NOTE 2 | - | 125 | 38 | 30 | 72 | 460 | TACO CA600 | 1.2 |
| EXT-3 | EXT-103 | LT HYDRONIC WATER | 1000 | 50 | 180 | 22 | 120 | NOTE 2 | - | 125 | 35 | 20 | 40 | 200 | TACO CA140 | 1.2,3 |

NOTE:
 1. SET TANK AT FLOOR ON 4" CONCRETE PAD.
 2. ASME RATED FOR 125 PSIG
 OWNER SUPPLIED: SEE GENERAL NOTE B THIS SHEET

HOT WATER FIN TUBE RADIATION SCHEDULE

| UNIT NO. | TUBE SIZE (IN.) | ROWS | FINS PER FOOT | SIZE (IN) | ENCLOSURE HEIGHT (IN) | ENCLOSURE HEIGHT (IN) | HW CAPACITY BTU/HF | AVERAGE WATER TEMP °F | MANUFACTURER AND MODEL NUMBER | NOTES |
|----------|-----------------|------|---------------|-------------|-----------------------|-----------------------|--------------------|-----------------------|-------------------------------|-------|
| FR-1 | 1-14 | 1 | 40 | 4-14 x 4-14 | - | - | 900 | 170 | | 1 |

NOTE:
 1. INSTALL CONCEALED IN PROVIDED ARCHITECTURAL ENCLOSURE. REFER TO DETAIL 6 ON SHEET A12.13

HOT WATER BOILER SCHEDULE

| UNIT NO. | PWM UNIT NO. | FUEL | INPUT MBH | NET BR. RATING MBH | MINIMUM EFF. % | FLUE GAS SIZE (IN.) | BURNER MOTOR HP | ELECTRICAL DATA | | MANUFACTURER AND MODEL NUMBER | NOTES | |
|----------|--------------|----------------------------|-----------|--------------------|----------------|---------------------|-----------------|-----------------|---|-------------------------------|-----------------------|-------|
| B-1 | B-5 | NATURAL GAS/NO. 2 FUEL OIL | 2232 | 1941 | 85 | 14 | 1 | 208 | 3 | 60 | H.S. SMITH GC-28A-W-9 | 1,2,3 |
| B-2 | B-6 | NATURAL GAS/NO. 2 FUEL OIL | 2232 | 1941 | 85 | 14 | 1 | 208 | 3 | 60 | H.S. SMITH GC-28A-W-9 | 1,2,3 |

NOTE:
 1. FURNISH AND INSTALL EXHAUST VENT FAN SYSTEM AT TERMINATION OF BOILER STACK. (ONE RV8 400 FAN, XTP CONTROLLER, CABLE AND STACK PROBE, 280T DANFOSS VFD, 2815 DANFOSS VFD, EBC30 POWER SUPPLY, 8BM OR 8BF DAMPER, AND SCA FAN MOUNTING.) PROVIDE 208V3 PHASE ELECTRICAL SERVICE TO SYSTEM.
 2. FURNISH AND INSTALL WEBSTER MODEL JB2C-10 FORCED DRAFT DUAL FUEL BURNER WITH AUTOFLAME MODULATING CONTROL.
 3. OWNER SUPPLIED: SEE GENERAL NOTE B THIS SHEET

DAY TANK SCHEDULE

| UNIT NO. | CAP. GAL. | DESCRIPTION | MANUFACTURER AND MODEL NUMBER | NOTE |
|----------|-----------|--------------------------------------|-------------------------------|------|
| DT-1 | 200 | DOUBLE WALL TANK. CONTROLS UL LISTED | FRYCOPY200MLDWD | 1 |

NOTE:
 1. FURNISH WITH LEAK DETECTION SENSOR/ALARM LIGHT/PUMP
 2. FURNISH WITH NORMALLY CLOSED SOLENOID VALVE. (PRYCO OPTION 360C)
 3. CUTOFF REMOTE CONTACTS FOR CONNECTION TO OWNERS BAS. (PRYCO OPTION 395)

FAN SCHEDULE

| UNIT NO. | PWM UNIT NO. | LOCATION | AREA SERVES | FAN TYPE | DRIVE TYPE | CFM | SP IN WG | HP (WATTS) | FAN RPM | MOTOR RPM | ELECTRICAL DATA | | | SOUND PWR (dB RE 10 ⁻¹² WATTS) @ OCTAVE BAND & CENTER FREQ. (HZ) | | | | | | | | MANUFACTURER AND MODEL NUMBER | NOTES | | | |
|----------|--------------|----------------------------------|---------------------------------|----------------|------------|--------|----------|------------|---------|-----------|-----------------|----|----|---|----|-----|----|----|----|----|----|-------------------------------|-------|--|--|--|
| | | | | | | | | | | | VOLTS | PH | HZ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | |
| EF-1 | EF-101 | BAGGAGE MAKE-UP AREA - WEST | SPACE EXHAUST | WALL | BELT | 15,000 | 0.25 | 2 | 279 | 1725 | 208 | 3 | 60 | 82 | 85 | 80 | 75 | 72 | 68 | 63 | 57 | COOK 60XLPH | 5 | | | |
| EF-2 | EF-102 | BAGGAGE MAKE-UP AREA - EAST | SPACE EXHAUST | WALL | BELT | 15,000 | 0.25 | 2 | 279 | 1725 | 208 | 3 | 60 | 82 | 85 | 80 | 75 | 72 | 68 | 63 | 57 | COOK 60XLPH | 5 | | | |
| EF-3 | EF-103 | NOT IN CONTRACT | | | | | | | | | | | | | | | | | | | | | | | | |
| EF-4 | EF-104 | NOT IN CONTRACT | | | | | | | | | | | | | | | | | | | | | | | | |
| EF-5 | EF-105 | JANITORS CLOSET 2513 | JAN SINK EXHAUST | CEILING | DIRECT | 400 | 0.375 | (279) | 1044 | - | 115 | 1 | 60 | 63 | 61 | 58 | 53 | 46 | 42 | 43 | 42 | COOK GC-640 | 1,3,7 | | | |
| EF-6 | EF-106 | NOT IN CONTRACT | | | | | | | | | | | | | | | | | | | | | | | | |
| EF-7 | EF-107 | ELEV. MACH. RM. LEVEL 1531 | SPACE EXHAUST | CEILING | DIRECT | 2800 | 0.375 | 1 | 1058 | - | 208 | 1 | 60 | 72 | 71 | 71 | 71 | 62 | 59 | 55 | 47 | COOK GC-2000 | 1,3 | | | |
| EF-8 | EF-108 | NOT IN CONTRACT | | | | | | | | | | | | | | | | | | | | | | | | |
| EF-9 | EF-109 | MECHANICAL ROOM ROOF | TOILET EXHAUST | ROOF - UPBLAST | BELT | 5,000 | 1 | 3.0 | 1506 | 1725 | 460 | 3 | 60 | 80 | 87 | 90 | 87 | 78 | 74 | 71 | 66 | COOK 180 ACRUB | 5 | | | |
| EF-10 | EF-110 | ELECTRICAL ROOM NEXT TO STAIR 16 | SPACE EXHAUST | CABINET | BELT | 5,500 | 0.5 | 1 | 569 | - | 208 | 1 | 60 | 85 | 81 | 72 | 69 | 68 | 66 | 62 | 59 | COOK TBD-15 | 1,8 | | | |
| EF-11 | EF-111 | ELEV. MACH. RM. LEVEL 4 ZONE 5 | SPACE EXHAUST | CEILING | DIRECT | 300 | 0.375 | (137) | 1205 | - | 115 | 1 | 60 | 67 | 68 | 63 | 58 | 50 | 45 | 45 | 43 | COOK GC-180 | 1,3,7 | | | |
| EF-12 | EF-112 | NEW MECHANICAL ROOM | EMERGENCY REFRIGERATION EXHAUST | ROOF - UPBLAST | DIRECT | 2,500 | 0.25 | 0.75 | 1725 | 1725 | 208 | 1 | 60 | 81 | 92 | 89 | 81 | 74 | 74 | 69 | 62 | COOK 135R17D | 1,9 | | | |
| EF-13 | EF-113 | CLOSET 1533 | SPACE EXHAUST | INLINE | DIRECT | 300 | 0.375 | (137) | 1205 | 1205 | 120 | 1 | 60 | 67 | 68 | 63 | 58 | 50 | 45 | 45 | 43 | COOK GC-820 | 1 | | | |
| MC-1 | MC-101 | BAGGAGE MAKE-UP AREA - WEST | MAN COOLER | PROPELLER | DIRECT | 3,980 | - | 0.5 | 1725 | 1725 | 115 | 1 | 60 | 93 | 95 | 91 | 85 | 81 | 76 | 71 | 58 | GREENHECK MCY-18-328-A5 | 6 | | | |
| MC-2 | MC-102 | BAGGAGE MAKE-UP AREA - EAST | MAN COOLER | PROPELLER | DIRECT | 3,980 | - | 0.5 | 1725 | 1725 | 115 | 1 | 60 | 93 | 95 | 91 | 85 | 81 | 76 | 71 | 58 | GREENHECK MCY-18-328-A5 | 6 | | | |
| RF-1 | RF-101 | NOT IN CONTRACT | | | | | | | | | | | | | | | | | | | | | | | | |
| RF-2 | RF-102 | NOT IN CONTRACT | | | | | | | | | | | | | | | | | | | | | | | | |
| RF-3 | RF-103 | GENERATOR ROOM | COMB AIR/VENTILATION | ROOF | BELT | 6,000 | 0.375 | 1 | 1371 | - | 460 | 3 | 60 | 87 | 96 | 100 | 95 | 88 | 82 | 75 | 69 | COOK 24XMSMB | 5 | | | |
| RF-4 | RF-104 | NEW MECHANICAL ROOM | COMB AIR/VENTILATION | ROOF | BELT | 1,500 | 0.25 | 0.167 | 859 | - | 115 | 1 | 60 | 81 | 85 | 80 | 74 | 68 | 62 | 59 | 55 | COOK 20XMSMB | 5 | | | |
| PF-1 | PF-101 | FIXED LINK 2529 | SPACE PRESSURIZATION | INLINE | BELT | 1500 | .5 | 1/3 | 810 | 1725 | 115 | 1 | 60 | 68 | 74 | 72 | 65 | 64 | 62 | 58 | 57 | COOK DB-10 | - | | | |
| PF-2 | PF-102 | FIXED LINK 2528 | SPACE PRESSURIZATION | INLINE | BELT | 1500 | .5 | 1/3 | 810 | 1725 | 115 | 1 | 60 | 68 | 74 | 72 | 65 | 64 | 62 | 58 | 57 | COOK DB-10 | - | | | |
| PF-3 | PF-103 | FIXED LINK 2527 | SPACE PRESSURIZATION | INLINE | BELT | 1500 | .5 | 1/3 | 810 | 1725 | 115 | 1 | 60 | 68 | 74 | 72 | 65 | 64 | 62 | 58 | 57 | COOK DB-10 | - | | | |
| PF-4 | PF-104 | FIXED LINK 2526 | SPACE PRESSURIZATION | INLINE | BELT | 1500 | .5 | 1/3 | 810 | 1725 | 115 | 1 | 60 | 68 | 74 | 72 | 65 | 64 | 62 | 58 | 57 | COOK DB-10 | - | | | |
| PF-5 | PF-105 | FIXED LINK 2527 | SPACE PRESSURIZATION | INLINE | | | | | | | | | | | | | | | | | | | | | | |