



2800 SO. RANCHO RD.
LAS VEGAS, NEVADA 89102
(702) 871-6164

CITY OF LAS VEGAS, NEVADA
FIRE STATION #44
MECHANICAL NOTES

DEPARTMENT OF PUBLIC WORKS
ARCHITECTURAL SERVICES
400 EAST STEWART AVENUE
LAS VEGAS, NEVADA 89101
PHONE: (702) 229-8525
FAX: (702) 229-8522
TDD: (702) 229-8528

DESIGN ENGINEERING CONSULTANT
DRAWN: KJB
DATE: 7/15/01
SCALE: AS SHOWN
PROJECT: 030.07
SHEET NO: 75 OF 106
M-01

Mechanical Schedule		General Notes		Air Distribution Schedule		Mechanical Legend																																																																																																																																																																																																																																																													
<p>UNIT HEATER 1A THRU 1E</p> <p>REZNOR MODEL FT-75 NATURAL GAS FIRED, POWER-VENTED FAN TYPE UNIT HEATER WITH A TUBULAR HEAT EXCHANGER. 980 CFM. PROVIDE UNIT HEATER COMPLETE WITH INTERNAL OVERLOAD PROTECTION FOR THE FAN MOTOR, 24 VOLT CONTROL VOLTAGE TRANSFORMER, 4-POINT 3/8" 16 THREADED HANGARS, A TUBULAR ALUMINIZED STEEL HEAT EXCHANGER AND A REMOVEABLE ALUMINIZED STEEL BURNER RACK, SINGLE STAGE GAS VALVE, DIRECT SPARK IGNITION WITH 100% SHUT OFF, COMBUSTION AIR PRESSURE SWITCH, FAN GUARD, VENT CAP, THERMOSTAT, ORIFICES FOR 2,048.50 FT. ELEVATION. LIMITED WARRANTY ON THE HEAT EXCHANGER.</p> <p>ELEC: 115/1 #50 HZ, 5.0 FLA, 1/20 HP FAN MOTOR OP WT: 107 LBS.</p>		<p>1. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SUPPORTS, SEISMIC CONNECTIONS, AND CONSTRAINTS FOR THE MECHANICAL EQUIPMENT AND SYSTEM COMPONENTS (I.E. AC UNITS, AH UNITS, EXHAUST FANS, DUCTWORK, PIPING, ETC.). THE MECHANICAL CONTRACTOR SHALL RETAIN THE SERVICES OF A NEVADA REGISTERED PROFESSIONAL CIVIL OR STRUCTURAL ENGINEER. SUBMIT STAMPED AND SIGNED DRAWINGS AND CALCULATIONS TO THE BUILDING OFFICIAL AND THE STRUCTURAL ENGINEER OF RECORD FOR COORDINATION AND APPROVAL.</p> <p>2. ANY PENETRATIONS OF GALVANIZED ROOF DECK FOR MECHANICAL EQUIPMENT, DUCTWORK, OR PIPING SHALL BE COORDINATED WITH THE STRUCTURAL ENGINEER OF RECORD. PENETRATIONS SHALL BE MADE BY THE GENERAL CONTRACTOR. ALL CUT EDGES TO BE FINISHED AND SEALED FOR CORROSION PROTECTION.</p> <p>3. NO MATERIAL CAN BE HUNG FROM THE GALV. METAL ROOF DECK - CONTRACTOR SHALL USE STRUCTURAL MEMBERS OR PROVIDE SUPPORT FROM STRUCTURAL MEMBERS.</p>		<p>EXAMPLES</p> <p>MANUFACTURER SHALL BE EH- PRICE UNLESS OTHERWISE NOTED. COLOR SHALL BE OFF-WHITE WITH INTERIOR FLAT BACK UNLESS NOTED OTHERWISE.</p> <table border="1"> <thead> <tr> <th>SYMBOL</th> <th>TYPE</th> <th>FACE</th> <th>FRAME</th> <th>MODEL #</th> <th>REMARKS</th> </tr> </thead> <tbody> <tr> <td>CD-1</td> <td>SUPPLY</td> <td>MODULAR CORE</td> <td>LAY-IN</td> <td>SMCD</td> <td></td> </tr> <tr> <td>CD-2</td> <td>SUPPLY</td> <td>MODULAR CORE</td> <td>SURFACE</td> <td>SMCD</td> <td></td> </tr> <tr> <td>SW-1</td> <td>SUPPLY</td> <td>LOUVERED</td> <td>SURFACE</td> <td>LBMR</td> <td></td> </tr> <tr> <td>RG-1</td> <td>RETURN</td> <td>EGG CRATE</td> <td>LAY-IN</td> <td>SERIES 80</td> <td></td> </tr> <tr> <td>RG-2</td> <td>RETURN</td> <td>EGG CRATE</td> <td>SURFACE</td> <td>SERIES 80</td> <td></td> </tr> <tr> <td>EG-1</td> <td>EXHAUST</td> <td>EGG CRATE</td> <td>SURFACE</td> <td>SERIES 80</td> <td></td> </tr> </tbody> </table>		SYMBOL	TYPE	FACE	FRAME	MODEL #	REMARKS	CD-1	SUPPLY	MODULAR CORE	LAY-IN	SMCD		CD-2	SUPPLY	MODULAR CORE	SURFACE	SMCD		SW-1	SUPPLY	LOUVERED	SURFACE	LBMR		RG-1	RETURN	EGG CRATE	LAY-IN	SERIES 80		RG-2	RETURN	EGG CRATE	SURFACE	SERIES 80		EG-1	EXHAUST	EGG CRATE	SURFACE	SERIES 80		<p>Mechanical Legend</p> <table border="1"> <thead> <tr> <th>ABBR.</th> <th>SYMBOL</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>SA</td> <td></td> <td>SUPPLY AIR</td> </tr> <tr> <td>RA</td> <td></td> <td>RETURN AIR</td> </tr> <tr> <td>EA</td> <td></td> <td>EXHAUST AIR</td> </tr> <tr> <td>OA</td> <td></td> <td>OUTSIDE AIR</td> </tr> <tr> <td>VD</td> <td></td> <td>MANUAL VOLUME DAMPER</td> </tr> <tr> <td>FLEX</td> <td></td> <td>FLEXIBLE DUCT</td> </tr> <tr> <td>LINED</td> <td></td> <td>LINED DUCTWORK - SIZES ARE NET INSIDE DIMENSIONS</td> </tr> <tr> <td>FSD</td> <td></td> <td>FIRE AND SMOKE DAMPER</td> </tr> <tr> <td>CD</td> <td></td> <td>FIRE DAMPER</td> </tr> <tr> <td>M</td> <td></td> <td>MOTORIZED DAMPER OPERATOR</td> </tr> <tr> <td>DMSD</td> <td></td> <td>SMOKE DETECTOR (DUCT MOUNTED)</td> </tr> <tr> <td>D</td> <td></td> <td>BACKFLOW PREVENTER</td> </tr> <tr> <td>PTRV</td> <td></td> <td>DRAIN PIPING</td> </tr> <tr> <td>FC</td> <td></td> <td>PRESSURE & TEMPERATURE RELIEF VALVE</td> </tr> <tr> <td></td> <td></td> <td>FLEX CONNECTOR - PIPING</td> </tr> <tr> <td></td> <td></td> <td>THERMOMETER</td> </tr> <tr> <td></td> <td></td> <td>THERMOSTAT</td> </tr> <tr> <td></td> <td></td> <td>HUMIDISTAT</td> </tr> <tr> <td></td> <td></td> <td>TEMPERATURE SENSOR IN WELL</td> </tr> <tr> <td></td> <td></td> <td>PRESSURE GAUGE</td> </tr> <tr> <td></td> <td></td> <td>BRANCH - TOP CONNECTION</td> </tr> <tr> <td></td> <td></td> <td>BRANCH - BOTTOM CONNECTION</td> </tr> <tr> <td></td> <td></td> <td>BRANCH - SIDE CONNECTION</td> </tr> <tr> <td></td> <td></td> <td>HEATING WATER SUPPLY</td> </tr> <tr> <td></td> <td></td> <td>HEATING WATER RETURN</td> </tr> <tr> <td></td> <td></td> <td>REFRIGERANT LIQUID PIPING</td> </tr> <tr> <td></td> <td></td> <td>REFRIGERANT SUCTION PIPING</td> </tr> <tr> <td></td> <td></td> <td>AIR FILTER</td> </tr> <tr> <td></td> <td></td> <td>ABOVE, BELOW FINISHED FLOOR</td> </tr> <tr> <td></td> <td></td> <td>ABOVE, BELOW FINISHED GRADE</td> </tr> <tr> <td></td> <td></td> <td>ACCESS DOOR</td> </tr> <tr> <td></td> <td></td> <td>EXHAUST AIR DAMPER</td> </tr> <tr> <td></td> <td></td> <td>BACKDRAFT DAMPER</td> </tr> <tr> <td></td> <td></td> <td>CEILING DIFFUSER WITHOUT OBD</td> </tr> <tr> <td></td> <td></td> <td>CUBIC FEET PER MINUTE</td> </tr> <tr> <td></td> <td></td> <td>DUCT MOUNTED DIFFUSER</td> </tr> <tr> <td></td> <td></td> <td>ENTERING, LEAVING AIR TEMPERATURE</td> </tr> <tr> <td></td> <td></td> <td>ENTERING, LEAVING WATER TEMPERATURE</td> </tr> <tr> <td></td> <td></td> <td>EXHAUST FAN</td> </tr> <tr> <td></td> <td></td> <td>EXHAUST GRILLE</td> </tr> <tr> <td></td> <td></td> <td>FEET PER MINUTE</td> </tr> <tr> <td></td> <td></td> <td>GRILLE</td> </tr> <tr> <td></td> <td></td> <td>GALLONS PER MINUTE</td> </tr> <tr> <td></td> <td></td> <td>HORSEPOWER</td> </tr> <tr> <td></td> <td></td> <td>OUTSIDE AIR DAMPER</td> </tr> <tr> <td></td> <td></td> <td>THOUSAND BTU PER HOUR</td> </tr> <tr> <td></td> <td></td> <td>MOUNTED</td> </tr> <tr> <td></td> <td></td> <td>RETURN GRILLE</td> </tr> <tr> <td></td> <td></td> <td>REVOLUTIONS PER MINUTE</td> </tr> <tr> <td></td> <td></td> <td>SHUT OFF VALVE</td> </tr> <tr> <td></td> <td></td> <td>SIDE WALL DIFFUSER WITHOUT OBD</td> </tr> <tr> <td></td> <td></td> <td>TEMPERATURE CONTROL VALVE</td> </tr> <tr> <td></td> <td></td> <td>TOTAL DYNAMIC HEAD</td> </tr> <tr> <td></td> <td></td> <td>TOTAL STATIC PRESSURE</td> </tr> <tr> <td></td> <td></td> <td>WET, DRY BULB TEMPERATURE</td> </tr> <tr> <td></td> <td></td> <td>INCHES OF WATER COLUMN</td> </tr> <tr> <td></td> <td></td> <td>PRESSURE DROP, PRESSURE DIFFERENCE</td> </tr> </tbody> </table>		ABBR.	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<p>RELIEF HOOD (BAROMETRIC) 1 THRU 3</p> <p>GREENHECK FABRA HOOD FHR GRAVITY RELIEF NON DUCTED ROOF MOUNTED VENTILATOR. HOOD SHALL HAVE A MINIMUM THROAT AREA OF 8.0 SQUARE FEET WITH A 24" x 48" THROAT SIZE OPENING. PROVIDE HOOD COMPLETE WITH 12" HIGH ROOF CURB, 1/2" GALVANIZED STEEL MESH BIRD SCREEN, AND BACKDRAFT DAMPER.</p> <p>OP WT. 75 LBS.</p>		<p>Mechanical Equipment Schedules</p>		<p>Thermometer</p> <p>Thermostat</p> <p>Humidistat</p> <p>Temperature Sensor in Well</p> <p>Pressure Gauge</p>																																																																																																																																																																																																																																																															
<p>KITCHEN EXHAUST FAN KEF 1</p> <p>GREENHECK MODEL CUBE 140HP-5 BELT DRIVEN, ROOF MOUNTED, TOP DISCHARGE, CENTRIFUGAL KITCHEN EXHAUST FAN. FAN SHALL BE RATED FOR 1070 CFM @ 1.25 INCHES STATIC PRESSURE. FAN SHALL BE PROVIDED COMPLETE WITH PREFABRICATED ROOF CURB WITH HINGED ARRANGEMENT, REMOVABLE EXTERNAL COVERED GREASE TROUGH, EXTERNAL MOUNTED WEATHERPROOF J-BOX, MOTOR COMPARTMENT HEAT SHIELD, SINGLE SCREW ADJUSTMENT, VIBRATION ISOLATION AND DISCONNECT SWITCH. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR.</p> <p>INTERLOCK CONTROLS WITH EC-5 UNIT SERVING KITCHEN HOOD KH-1, FAN SHALL BE RATED FOR 2,048.50 FT. ELEVATION.</p> <p>ELEC: 208V/1PH 1/2 HP BLOWER MOTOR WEIGHT: 175 LBS.</p>		<p>PACKAGED AIR CONDITIONER, UNITARY</p> <table border="1"> <thead> <tr> <th>SYMBOL</th> <th>CARRIER MODEL NO.</th> <th>MINIMUM AIR FLOW CFM</th> <th>EXTERNAL STATIC PRESSURE IN WC</th> <th>MIN MOTOR HP</th> <th>AIR NOMINAL TONS</th> <th>CAPACITY TOTAL/SENS MBH</th> <th>HEAT IN/OUT MBH</th> <th>E.A.T. D.B./W.B.</th> <th>OUTDOOR AIR TEMP. °F</th> <th>SEER AT AIR CONDITIONS</th> <th>VOLTAGE</th> <th>PHASE</th> <th>HERTZ</th> <th>MCA</th> <th>MOCR</th> <th>MAX OPR. WT. 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MINIMUM AIR FLOW CFM	EXTERNAL STATIC PRESSURE IN WC	MIN MOTOR HP	AIR NOMINAL TONS	CAPACITY TOTAL/SENS MBH	HEAT IN/OUT MBH	E.A.T. D.B./W.B.	OUTDOOR AIR TEMP. °F	SEER AT AIR CONDITIONS	VOLTAGE	PHASE	HERTZ	MCA	MOCR	MAX OPR. WT. LBS.	FILTERS	REMARKS	1	48HJ0005	1450	0.6	1	4	43.3 / 31.8	72.0/59.0	83/82	115	13.0	208	3	60	22.5	30	900	2"	420	① ②	2	48HJ0005	1450	0.6	1	4	56.7 / 41.6	72.0/59.0	83/82	115	13.0	208	3	60	22.5	30	900	2"	240	① ②	3	48HJ0006	1750	0.6	1	5	22.1 / 17.0	72.0/59.0	83/82	115	13.0	208	3	60	28.9	35	900	2"	240	① ②	4	48GS024040	900	0.5	357 WATTS	2	25.9 / 20.9	40.0/32.8	83/82	115	10.0	208	1	60	18.2	30	500	2"	120	① ②	5	48GS030040	1125	0.5	451 WATTS	2.5	22.9 / 22.9	40.0/32.8	83/82	115	10.0	208	3	60	18.5	25	500	2"	200	① ②	6	48HJ0004	1200	0.6	3/4	3	31.5 / 30.9	72.0/59.0	83/82	115	12.0	208	3	60	18.5	25	800	2"	200	① ②	7	48GS024040	900	0.5	357 WATTS	2	22.1 / 17.0	40.0/32.8	83/82	115	10.0	208	1	60	18.2	30	500	2"	120	① ②	<p>Evaporative Cooler Schedule</p> <table border="1"> <thead> <tr> <th>CFM</th> <th>TSP</th> <th>SATURATION EFFICIENCY %</th> <th>MEDIA FACE AREA SQ. 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WT. #</th> <th>MODEL #</th> <th>REMARKS</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>4050</td> <td>0.2</td> <td>89%</td> <td>1080</td> <td>5.5</td> <td>5.0</td> <td>3</td> <td>1</td> <td>208</td> <td>1</td> <td>8.8</td> <td>1</td> <td>250</td> <td>MASTER COOL PLUS #HPC850A</td> <td>① ③ ⑤ ⑥</td> </tr> <tr> <td>2</td> <td>4050</td> <td>0.2</td> <td>89%</td> <td>1080</td> <td>5.5</td> <td>5.0</td> <td>3</td> <td>1</td> <td>208</td> <td>1</td> <td>8.8</td> <td>1</td> <td>250</td> <td>MASTER COOL PLUS #HPC850A</td> <td>① ③ ⑤ ⑥</td> </tr> <tr> <td>3</td> <td>3180</td> <td>0.2</td> <td>79%</td> <td>900</td> <td>4.1</td> <td>3.2</td> <td>3</td> <td>3/4</td> <td>208</td> <td>1</td> <td>7.6</td> <td>1</td> <td>200</td> <td>MASTER COOL PLUS #HPC440</td> <td>① ③ ⑤ ⑥</td> </tr> <tr> <td>4</td> <td>3180</td> <td>0.2</td> <td>79%</td> <td>900</td> <td>4.1</td> <td>3.2</td> <td>3</td> <td>3/4</td> <td>208</td> <td>1</td> <td>7.6</td> <td>1</td> <td>200</td> <td>MASTER COOL PLUS #HPC440</td> <td>① ③ ⑤ ⑥</td> </tr> <tr> <td>5</td> <td>1700</td> <td>0.5</td> <td>80%</td> <td>900</td> <td>4.1</td> <td>3.2</td> <td>3</td> <td>1/2</td> <td>208</td> <td>1</td> <td>5.4</td> <td>1</td> <td>200</td> <td>MASTER COOL PLUS #HPC430</td> <td>① ② ④ ⑥</td> </tr> </tbody> </table> <p>NOTES: ① PROVIDE UNIT COMPLETE WITH COMFORTCYCLE THERMOSTAT HORIZONTAL DISCHARGE ② DOWNFLOW DISCHARGE ③ INTERLOCK CONTROLS WITH KEF-1, COORDINATE WITH THE ELECTRICAL CONTRACTOR ④ THERMOSTAT CONTRACTOR TO INSTALL AN AUTOMATIC FLUSH SYSTEM IN THE EVAPORATIVE COOLER DRAIN LINE, TO CONSIST OF ISOLATION VALVE, SOLENOID VALVE (NC WHEN DE-ENERGIZED), AND TIMER, INCLUDING WIRING, ETC.</p>		CFM	TSP	SATURATION EFFICIENCY %	MEDIA FACE AREA SQ. IN.	BLEED OFF RATE GPH	GPM	HEAD (FT.)	MOTOR HP	VOLTAGE	PHASE	AMPS	SPEED	OPER. WT. #	MODEL #	REMARKS	1	4050	0.2	89%	1080	5.5	5.0	3	1	208	1	8.8	1	250	MASTER COOL PLUS #HPC850A	① ③ ⑤ ⑥	2	4050	0.2	89%	1080	5.5	5.0	3	1	208	1	8.8	1	250	MASTER COOL PLUS #HPC850A	① ③ ⑤ ⑥	3	3180	0.2	79%	900	4.1	3.2	3	3/4	208	1	7.6	1	200	MASTER COOL PLUS #HPC440	① ③ ⑤ ⑥	4	3180	0.2	79%	900	4.1	3.2	3	3/4	208	1	7.6	1	200	MASTER COOL PLUS #HPC440	① ③ ⑤ ⑥	5	1700	0.5	80%	900	4.1	3.2	3	1/2	208	1	5.4	1	200	MASTER COOL PLUS #HPC430	① ② ④ ⑥
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