

TERMINAL UNIT SCHEDULE						
ITEM	NAILOR MODEL & SIZE	NOMINAL CFM	MAX. P.D.	MAX. N.C. @ 1" S.P.	INLET SIZE	REMARKS
A	3004	150	0.06	LESS THAN 20	4"φ	50% MINIMUM
B	3005	250	0.03	20	5"φ	
C	3006	400	0.07	20	6"φ	
D	3007	550	0.01	20	7"φ	
E	3008	700	0.02	20	8"φ	
F	3009	900	0.01	22	9"φ	
G	3010	1100	0.01	21	10"φ	
H	3012	1600	0.01	23	12"φ	
I	3014	2100	0.01	23	14"φ	
K	3016	2800	0.01	25	16"φ	
M	3024	4000	0.12	35	24x16	

ITEM	NAILOR MODEL & SIZE	MAX. CFM	MAX. P.D.	MAX. N.C. @ 1" S.P.	MBH	GPM	RUNOUT SIZE	INLET SIZE
1	30RW04	150	0.08	LESS THAN 20	3.0	0.5	1/2"	4"φ
2	30RW05	250	0.08	20	4.5	0.5		5"φ
3	30RW06	400	0.17	20	6.0	0.5		6"φ
4	30RW07	550	0.10	20	7.5	1.0		7"φ
5	30RW08	700	0.22	20	11.25	1.0		8"φ
6	30RW09	900	0.21	22	15.0	1.0		9"φ
7	30RW10	1100	0.21	21	23.0	1.5		10"φ
8	30RW12	1600	0.31	23	30.0	2.0		12"φ
9	30RW14	2100	0.31	23	37.5	2.5	3/4"	14"φ
10	30RW16	2800	0.31	25	52.5	4.0	3/4"	16"φ
11	30RW2416	4000	0.32	35	75.5	6.0	3/4"	24x16

SCHEDULE NOTES

- ① HEATING CAPACITY BASED UPON 55F ENTERING AIR TEMP. 180F ENTERING WATER, 1 ROW COIL.

MECHANICAL ABBREVIATION LIST

AABC ACD AFF AP AUTO AHU (AH) AD APD AF AFMS ACU (AC)	AMERICAN AIR BALANCE COUNCIL AUTOMATIC CONTROL DAMPER ABOVE FINISH FLOOR ACCESS PANEL AUTOMATIC AIR HANDLING UNIT ACCESS DOOR AIR PRESSURE DROP AIR FOIL AIR FLOW MEASURING STATION AIR CONDITIONING UNIT	FCU (FC) F FB FCM FPM FT FM FLA FG	FAN COIL UNIT DEGREES FAHRENHEIT FAN POWERED BOX UNIT FORWARD CURVED FEET PER MINUTE FEET FLOW METER FULL LOAD AMPS FIBERGLASS	NA NC NO NEBB NEC NFFPA NIC NTS	NOT APPLICABLE NORMALLY CLOSED NORMALLY OPEN NATIONAL ENVIRONMENTAL BALANCING BUREAU NATIONAL ELECTRIC CODE NATIONAL FIRE PROTECTION ASSOCIATION NOT IN CONTRACT NOT TO SCALE	WB WG WMS WC WP WPD UNO	WET BULB TEMPERATURE WATER GAUGE WIRE MESH SCREEN WATER COLUMN WORKING PRESSURE WATER PRESSURE DROP UNLESS NOTED OTHERWISE
B BHP BTU BOS BOD BI	BOILER BREAK HORSE POWER BRITISH THERMAL UNIT BOTTOM OF STEEL BOTTOM OF DUCT BACKWARD INCLINE	GA GAL GC GPM GR GBS GEF	GAUGE GALLONS GENERAL CONTRACTOR GALLONS PER MINUTE GRILLE GALVANIZED BIRD SCREEN GENERAL EXHAUST FAN	OED OFCl	OPEN END DUCT OWNER FURNISHED CONTRACT INSTALLED		
CFM CH CU CV CO2 CHWP CF CC CD	CUBIC FEET PER MINUTE CHILLER CONDENSING UNIT CONSTANT VOLUME CARBON DIOXIDE CHILLED WATER PUMP CHEMICAL POT FEEDER COOLING COIL CEILING DIFFUSER	HD HP HR HZ HOA HWP HC	HEAD HORSE POWER HOUR HERTZ HAND OFF AUTO HOT WATER PUMP HEATING COIL	SD SP SS SQ FT (#) SF	SMOKE DAMPER STATIC PRESSURE STAINLESS STEEL SQUARE FEET SUPPLY FAN		
DIFF DB DDC DDCFF DDCFP DIA (φ) DN DX	DIFFUSER DRY BULB TEMPERATURE DIRECT DIGITAL CONTROL DIRECT DIGITAL CONTROL FIELD PANEL DIAMETER DOWN DIRECT EXPANSION	IN (") IBC IMC IPC IH	INCH INTERNATIONAL BUILDING CODE INTERNATIONAL MECHANICAL BUILDING CODE INTERNATIONAL PLUMBING BUILDING CODE INTAKE HOOD	TF T TAB TSP TYP TD TDH TU TCP	TRANSFER FAN TEMPERATURE TESTING AND BALANCING TOTAL STATIC PRESSURE TYPICAL TEMPERATURE DIFFERENCE TOTAL DEVELOPED HEAD TERMINAL UNIT TEMPERATURE CONTROL PANEL		
EMCS E EAT EFF EWT EXH EC EF ESP ET	ENERGY MANAGEMENT CONTROL SYSTEM EXISTING ENTERING AIR TEMPERATURE EFFICIENCY ENTERING WATER TEMPERATURE EXHAUST EVAPORATIVE COOLER EXHAUST FAN EXTERNAL STATIC PRESSURE EXPANSION TANK	LAT LBS LWT	LEAVING AIR TEMPERATURE POUNDS LEAVING WATER TEMPERATURE	UMC UPC	UNIFORM MECHANICAL CODE UNIFORM PLUMBING CODE		
		MBH MAX MCA MCCP MCC MIN MA	1000 BRITISH THERMAL UNITS PER HOUR MAXIMUM MAXIMUM CIRCUIT AMPS MAXIMUM OVERRIDE CURRENT PROTECTION MOTOR CONTROL CENTER MINIMUM MIXED AIR	VAV VD VFD V	VARIABLE AIR VOLUME VOLUME DAMPER (MANUAL) VARIABLE FREQUENCY DRIVE VOLT		

ENERGY COMPLIANCE CALCULATIONS

90.1 (2004) Standard

Section 1: Project Information
 Project Type: New Construction
 Project Title: Saenger Theater Renewal Project
 Construction Site: 142 North Rampart Street, New Orleans, LA
 Owner/Agent: Saenger Theater Redevelopment Company, 200 West Loop South, Suite 1040, Houston, TX 77002
 Designer/Contractor: JBA Consulting Engineers, 3525 North Causeway Blvd., Suite 500, Metairie, LA 70002 (504)830-0139

Section 2: General Information
 Building Location (for weather data): New Orleans, Louisiana
 Climate Zone: 2A

Section 3: Mechanical Systems List

Quantity	System Type & Description
1	Air Handler AH-1: Heating: Hydronic or Steam Coil, Hot Water, Capacity 220 kBtu/h / Cooling: Hydronic Coil, Capacity 856 kBtu/h / Single Zone
1	Air Handler AH-2: Heating: Hydronic or Steam Coil, Hot Water, Capacity 329 kBtu/h / Cooling: Hydronic Coil, Capacity 1272 kBtu/h / Single Zone
2	Air Handler AH-3 & AH-4: Heating: Hydronic or Steam Coil, Hot Water, Capacity 300 kBtu/h / Cooling: Hydronic Coil, Capacity 856 kBtu/h / Single Zone
1	Air Handler AH-5: Heating: Hydronic or Steam Coil, Hot Water, Capacity 100 kBtu/h / Cooling: Hydronic Coil, Capacity 264 kBtu/h / Single Zone
1	Air Handler AH-6: Heating: Hydronic or Steam Coil, Hot Water, Capacity 129 kBtu/h / Cooling: Hydronic Coil, Capacity 384 kBtu/h / Single Zone
1	Air Handler AH-7: Heating: Hydronic or Steam Coil, Hot Water, Capacity 188 kBtu/h / Cooling: Hydronic Coil, Capacity 104 kBtu/h / Single Zone
31	Fan Coils w/ capacity < 25kBtu/h: Heating: Hydronic or Steam Coil, Hot Water, Capacity 25 kBtu/h / Cooling: Hydronic Coil, Capacity 49 kBtu/h / Single Zone
7	Fan coils w/ cap. >25k-45kBtu/h: Heating: Hydronic or Steam Coil, Hot Water, Capacity 34 kBtu/h / Cooling: Hydronic Coil, Capacity 49 kBtu/h / Single Zone
10	Chillers CH-1 thru CH-10: Cooling: Water Chiller, Capacity 70 tons, Condenser Air-Cooled, Efficiency: 5.60 COP, Non-Standard Centrifugal Chiller
3	Boilers B-1 thru B-3: Heating: Hot Water Boiler, Capacity 1200 kBtu/h, Gas, Efficiency: 90.00 % EL, with Waterloo Heat Pump

Section 4: Requirements Checklist

Requirements Specific To: Air Handler AH-1 :
 1. Hot gas bypass limited to 25% of total cooling capacity

Requirements Specific To: Air Handler AH-2 :
 1. Hot gas bypass limited to 25% of total cooling capacity

Requirements Specific To: Air Handler AH-3 & AH-4 :
 1. Hot gas bypass limited to 25% of total cooling capacity

Requirements Specific To: Air Handler AH-5 :

Requirements Specific To: Air Handler AH-6 :
 1. Hot gas bypass limited to 25% of total cooling capacity

Requirements Specific To: Air Handler AH-7 :
 1. Hot gas bypass limited to 25% of total cooling capacity

Requirements Specific To: Fan Coils w/ capacity < 25kBtu/h :
 1. Hot gas bypass limited to 50% of total cooling capacity

Requirements Specific To: Fan coils w/ cap. >25k-45kBtu/h :
 1. Hot gas bypass limited to 50% of total cooling capacity

Requirements Specific To: Chillers CH-1 thru CH-10 :
 1. Equipment minimum efficiency: Chiller: 2.8 COP (2.5 IPLV)
 2. Meets the condenser heat recovery requirement for service water heating
 3. Hot gas bypass prohibited unless system has multiple stages of unloading or continuous capacity modulation

Requirements Specific To: Boilers B-1 thru B-3 :
 1. Equipment minimum efficiency: Boiler Thermal Efficiency 75% EL
 2. Loop temperature controlled with 20 degrees F deadband where neither cooling tower/flood cooler nor boiler can operate
 3. Two-position valve on each heat pump having total heat pump system power >10hp

General Requirements: Must be met by all systems to which the requirement is applicable:

- 1. Load calculations per ASHRAE Fundamentals
- 2. Automatic Controls: Setback to 55 degrees F (heat) and 85 degrees F (cool); 7-day clock, 2-hour occupant override, 10-hour backup
 - Exception: Continuously operating zones
- 3. Hot water pipe insulation: 1 in. for pipes <=1.5 in. and 2 in. for pipes >1.5 in. Chilled water/refrigerant/brine pipe insulation: 1 in. for pipes <=1.5 in. and 1.5 in. for pipes >1.5 in. Steam pipe insulation: 1.5 in. for pipes <=1.5 in. and 3 in. for pipes >1.5 in.
 - Exception: Piping within HVAC equipment.
 - Exception: Fluid temperatures between 60 and 105 degrees F.
 - Exception: Fluid not heated or cooled.
 - Exception: Runouts <= 8 ft in length.
 - Exception: Pipe unions in heating systems.
- 4. Load calculations per acceptable engineering standards and handbooks
- 5. Thermostatic controls have 5 degrees F deadband
 - Exception: Thermostats requiring manual changeover between heating and cooling
 - Exception: Special occupancy or special applications where wide temperature ranges are not acceptable and are approved by the authority having jurisdiction.
- 6. Hot water distribution systems >=200 kBtu/h must have one of the following: a) controls that reset supply water temperature by 25% of supply/return delta T b) mechanical or electrical adjustable-speed pump drive(s) c) two-way valves at all heating coils d) multiple-stage pumps e) other system controls that reduce pump flow by at least 50% based on load - calculations required
- 7. Pumping system balancing required. Means for measurement or testing pressure across each pump required
- 8. Where separate thermostats are used for heating and cooling, acceptable measures are used to prevent simultaneous heating and cooling
- 9. Stair and elevator shaft vents are equipped with motorized dampers
- 10. Acceptable measures used to prevent simultaneous humidification and dehumidification
 - Exception: Desiccant systems and systems for uses requiring specific humidity levels (approval required)
- 11. Automatic controls for freeze protection systems present
- 12. Automatic ventilation controls (e.g., CO2 controls) or exhaust air heat recovery present for high design occupancy areas (>100 person/1000 sq) with >3,000 cfm outside air capacities
- 13. Duct, plenum, and piping insulation surfaces suitably protected from weather, moisture, or likely damage
- 14. Duct Sealing: a) Pressure sensitive tape is not used as the primary sealant, b) longitudinal and transverse seams for ducts in unconditioned spaces, c) longitudinal and transverse seams and duct wall penetrations for ducts outside the building, d) transverse seams on buried ducts
- 15. Motorized, automatic shutoff dampers required on exhaust and outdoor air supply openings
 - Exception: Gravity dampers acceptable in buildings <3 stories

Section 5: Compliance Statement
 Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 90.1 (2004) Standard requirements in COMcheck Version 3.7.0 and to comply with the mandatory requirements in the Requirements Checklist.

Section 6: Post Construction Compliance Statement
 The above post construction requirements have been completed.

THE SAENGER THEATRE RENEWAL PROJECT

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New Orleans, LA

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DATE:	No.:	ISSUE:
02.19.10	1	PERMIT SET
04.02.10	2	GMP CONTRACT SET

DATE:	No.:	REVISION:
06.16.10	1	PERMIT SET REVISION
11.11.10		CONTRACT SET

SHEET TITLE:
SCHEDULES & ENERGY COMPLIANCE CALC.'S

M-0.01

REVISED ENTIRE SHEET