

Mechanical Compliance Certificate
Standard 90.1-2001

COMcheck-EZ Software Version 3.0 Release 2b
Data filename: P:\06.0109\Drawings\Mechanical\CALCS\5TH STREET.sch

Section 1: Project Information

Project Name: 5TH STREET SCHOOL
Design/Contractor: _____
Telephone: _____
Document Author: _____
Telephone: _____
Date: _____

Section 2: General Information

Building Location (for weather data): Las Vegas, Nevada
Heating Degree Days (base 65 degrees F): 2652
Cooling Degree Days (base 50 degrees F): 6091
Project Type: Addition

Section 3: Mechanical Systems List

Quantity	System Type & Description
1	HVAC System 1: Heating: Hydronic or Steam Coil, Hot Water, Heating Capacity >=225 kBtu/h / Cooling: Hydronic Coil, Capacity >=240 - <760 kBtu/h, Water-Cooled Condenser / Single Zone
1	HVAC System 4: Heating: Hydronic or Steam Coil, Hot Water, Heating Capacity >=225 kBtu/h / Cooling: Hydronic Coil, Capacity >=240 - <760 kBtu/h, Water-Cooled Condenser / Single Zone
1	HVAC System 2: Heating: Hydronic or Steam Coil, Hot Water, Heating Capacity >=225 kBtu/h / Cooling: Hydronic Coil, Capacity >=240 - <760 kBtu/h, Water-Cooled Condenser / Single Zone
1	HVAC System 3: Heating: Hydronic or Steam Coil, Hot Water, Heating Capacity >=225 kBtu/h / Cooling: Hydronic Coil, Capacity >=240 - <760 kBtu/h, Water-Cooled Condenser / Single Zone
7	HVAC System 5: Heating: Hydronic or Steam Coil, Hot Water, Heating Capacity <65 kBtu/h / Cooling: Hydronic Coil, Capacity <65 kBtu/h, Water-Cooled Condenser / Single Zone
1	HVAC System 6: Cooling: Hydronic Coil, Capacity <65 kBtu/h, Water-Cooled Condenser / Single Zone
1	HVAC System 9: Water Loop Heat Pump, Cooling Capacity <65 kBtu/h, Water-Cooled Condenser / Single Zone

Section 4: Requirements Checklist

Req. No. | Bldg. | Dept. | Use | Description
 [] 1. Water economizer is included and calculations required

[] 2. Hot gas bypass limited to 25% of total cooling capacity

Requirements Specific To: HVAC System 4
 [] 1. Water economizer is included and calculations required
 [] 2. Hot gas bypass limited to 25% of total cooling capacity

Requirements Specific To: HVAC System 2
 [] 1. Water economizer is included and calculations required
 [] 2. Hot gas bypass limited to 25% of total cooling capacity

Requirements Specific To: HVAC System 3
 [] 1. Water economizer is included and calculations required
 [] 2. Hot gas bypass limited to 25% of total cooling capacity

Requirements Specific To: HVAC System 5
 [] 1. Hot gas bypass limited to 50% of total cooling capacity

Requirements Specific To: HVAC System 6
 [] 1. Hot gas bypass limited to 50% of total cooling capacity

Requirements Specific To: HVAC System 9
 [] 1. Equipment minimum efficiency:
 Heat Pump: 4.2 COP, 12.0 EER
 [] 2. Heat pump thermostat required when supplemental electric resistance heat is installed

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

[] 1. Load calculations per 1997 ASHRAE Fundamentals
 [] 2. Thermostat controls: 5 degrees F deadband
 - Exception: Thermostats requiring manual changeover between heating and cooling

[] 3. 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
 - Exception: Residential occupancies may use controls that can start and stop the system under two different time schedules per week.

[] 4. Hot water pipe insulation: 1 in. for pipes <=1.5 in. and 2 in. for pipes >1.5 in.
 Chilled water/mixing/return 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 temperature between 55 and 105 degrees F
 - Exception: Fluid not heated or cooled

[] 5. Hot water distribution systems >=300 kBtu/h must have one of the following:
 a) controls that reset supply water temperatures 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

[] 6. Pumping system balancing required. Means for measurement or testing pressure across each pump required

[] 7. Where separate thermostats are used for heating and cooling, acceptable measures used to prevent simultaneous heating and cooling

[] 8. Motorized, automatic shut-off dampers required on exhaust and outdoor air supply openings
 - Exception: Gravity dampers acceptable in buildings <3 stories
 - Exception: Gravity (non-motorized) dampers are acceptable in systems with a design outside air intake or exhaust capacity of 500 cfm (140 L/s) or less.

[] 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 persons/1000 ft²) with >5,000 cfm outside air capacities
 - weather, moisture, or likely damage

[] 13. R-6 supply and return air duct insulation in unconditioned spaces
 R-8 supply and return air duct insulation outside the building
 R-3.5 supply and return air duct insulation underground

[] 14. Duct Sealing:
 Pressure sensitive tape is not used as the primary sealant
 Longitudinal and transverse seams for ducts in unconditioned spaces
 Longitudinal and transverse seams and duct wall penetrations for ducts outside the building
 Transverse seams on buried ducts

[] 15. Time-pipe systems not used
 [] 16. Humidistat controls prevent reheating, recooling, and mixing of mechanically heated air with mechanically cooled air

[] 17. Chilled water pumping systems with multiple chillers must automatically reduce chilled water flow rates proportionately when chillers are not operating
 hot water flow rates proportionately when boilers are not operating

[] 18. Exhaust air heat recovery included for systems 5,000 cfm or greater with more than 70% outside air fraction or specifically exempted

[] 19. Kitchen hoods >5,000 cfm provided with 50% makeup air that is uncooled and heated to no more than 60 degrees F unless specifically exempted

[] 20. Buildings with fume hood systems must have variable air volume hood design, exhaust heat recovery, or separate makeup air supply meeting the following:
 a) 75% make up air quantity, and /or
 b) within 2 degrees F of room temperature and/or
 c) no humidification
 d) no simultaneous heating and cooling

Section 5: 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 Standard 90.1-2001 requirements in COMcheck-EZ Version 3.0 Release 2b and to comply with the mandatory requirements in the Requirements Checklist.

KARL M. PETROFF
 Principal Mechanical Designer-Name
 Signature: *Karl M. Petroff*
 Date: 12/6/06

Section 6: Post Construction Compliance Statement

1. HVAC record drawings of the actual installation and performance data for each equipment provided to the owner within 90 days after system acceptance.
2. HVAC O&M documents for all mechanical equipment and system provided to the owner within 90 days after system acceptance.
3. Written HVAC balancing report provided to the owner.

The above post construction requirements have been completed.

Mechanical Designer or Contractor: _____ Signature: _____ Date: _____

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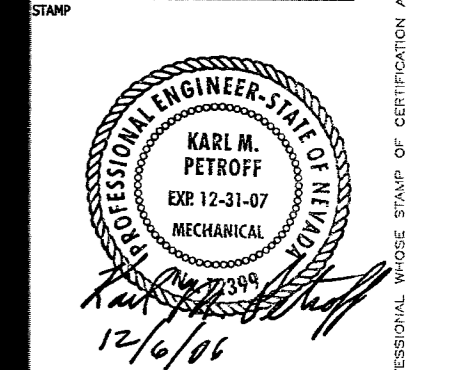
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 PHONE: 202-39-4442



FIFTH STREET SCHOOL
 REHABILITATION
 BUILDING DEPARTMENT SUBMITTAL

REVISED 12/07



OWNER: CITY OF LAS VEGAS
 DEPARTMENT OF PUBLIC WORKS
 ARCHITECTURAL SERVICES

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PLANS APPROVED
 PLUMBING/MECHANICAL
 Building & Safety Dept.
 City of Las Vegas, Nevada

DATE: 12/12/2006

MRB: JAN 26 2007

NO SCALE
 5D-6SE

SHEET NO. M0.04

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