



DANNY E. ORDIZ, AIA  
 ARCHITECT C-14,728  
 WILLIAM J. MELBY, AIA  
 ARCHITECT C-16,835

IDENTIFICATION STAMP  
 DIVISION OF STATE ARCHITECT  
 OFFICE OF REGULATION SERVICES  
 APP. #: 02-112027  
 FILE #: 15-6  
 AC FILE # 11/18/12  
 DATE 11/18/12  
 PTN # 63321-112

NEW ELEMENTARY  
 SCHOOL  
 9801 HIGHLAND KNOLLS DR  
 BAKERSFIELD  
 CALIFORNIA  
 93306  
 NEW MIDDLE SCHOOL  
 4115 VINELAND ROAD  
 BAKERSFIELD  
 CALIFORNIA  
 93306

FOR:  
 BAKERSFIELD CITY  
 SCHOOL DISTRICT  
 1300 BAKER STREET  
 BAKERSFIELD  
 CALIFORNIA  
 93305

**CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 4) MECH-1C**

Project Name: BCSO School Bld E Classrooms Date: 1/5/2012  
 Project No: Bakersfield Address: 8,360 n/a

**GENERAL INFORMATION**

Building Type:  Nonresidential  High-Rise Residential  Hotel/Motel Guest Room  
 Schools (Public School)  Relocatable Public School Bldg  Conditioned Spaces  Unconditioned Spaces (Attached)

Phase of Construction:  New Construction  Addition  Alteration

Approach of Compliance:  Component  Overall Envelope TDV  Unconditioned (to affix)

Front Orientation: N, E, S, W or In Degrees: 0 deg

**HVAC SYSTEM DETAILS**

Equipment <sup>1</sup>	Inspection Criteria	Pass	Fail - Describe Reason <sup>2</sup>
Item or System Type (i.e. AC-1, RTU-1, HP-1)	CUFC = 1, 2	<input type="checkbox"/>	<input type="checkbox"/>
Equipment Type <sup>2</sup>	Split DX	<input type="checkbox"/>	<input type="checkbox"/>
Number of Systems	2	<input type="checkbox"/>	<input type="checkbox"/>
Max Allowed Heating Capacity <sup>3</sup>	18,000 Btu/hr	<input type="checkbox"/>	<input type="checkbox"/>
Minimum Heating Efficiency <sup>3</sup>	n/a	<input type="checkbox"/>	<input type="checkbox"/>
Max Allowed Cooling Capacity <sup>3</sup>	15,000 Btu/hr	<input type="checkbox"/>	<input type="checkbox"/>
Cooling Efficiency <sup>3</sup>	14.0 SEER / 13.0 EER	<input type="checkbox"/>	<input type="checkbox"/>
Unit Location: R, V, W	n/a	<input type="checkbox"/>	<input type="checkbox"/>
When duct testing is required, submit MECH-1A & MECH-4-HERS	No	<input type="checkbox"/>	<input type="checkbox"/>
Economizer	No Economizer	<input type="checkbox"/>	<input type="checkbox"/>
Thermostat	setback Required	<input type="checkbox"/>	<input type="checkbox"/>
Fan Control	Constant Volume	<input type="checkbox"/>	<input type="checkbox"/>

1. If the actual installed equipment performance efficiency and capacity is less than the Proposed from the energy compliance submitted or from the building plans, the responsible party shall provide energy compliance to update the new changes.  
 2. For additional related discrepancy see Page 2 of the Inspection Checklist Form. Compliance with a Fail box is checked.  
 3. Indicate Equipment Type: Gas (HP or Split), VAV, HP (HP or split), Hydraulic, PTAC, or other

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**CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 2 of 4) MECH-1C**

Project Name: BCSO School Bld E Classrooms Date: 1/5/2012  
 Project No: Bakersfield Address: 8,360 n/a

**Discrepancies:**

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**CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 3 of 4) MECH-1C**

Project Name: BCSO School Bld E Classrooms Date: 1/5/2012  
 Project No: Bakersfield Address: 8,360 n/a

**Required Acceptance Tests**

**Designer:**  
 This form is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for mechanical systems. The designer is required to check the applicable boxes by all acceptance tests that apply and listed equipment that requires an acceptance test. If all equipment of a certain type requires a test, list the equipment description and the number of systems. The AIA number designates the Section in the Appendix of the International Reference Appendices Manual that describes the test. Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately.

**Building Departments:**  
 Systems Acceptance: Before occupancy permit is granted for a newly constructed building or space, or a new space-conditioning system serving a building or space is opened for normal use, all control devices serving the building or space shall be verified as meeting the Acceptance Requirements for Code Compliance.  
 Systems Acceptance: Before occupancy permit is granted, all newly installed HVAC equipment must be tested using the Acceptance Requirements.

The MECH-1C form is not considered a completed form and is not to be accepted by the building department unless the correct boxes are checked. The equipment requiring testing, persons performing the test (Example: HVAC installer, TAB contractor, controls contractor, PE in charge of project) and what Acceptance test must be conducted. The following checked-off items are required for ALL newly installed equipment. In addition, a Certificate of Acceptance forms shall be submitted to the building department that certifies plans, specifications, installation, certification, and operating and maintenance information meet the requirements of 910-105(b) and Title 24 Part 6. The building inspector must receive the properly filled out and signed forms before the building can receive final occupancy.

TEST DESCRIPTION	MECH-12A	MECH-13A	MECH-14A	MECH-15A	MECH-16A	MECH-17A	MECH-18A	MECH-19A	MECH-20A	MECH-21A	MECH-22A
Equipment: Fan Type, Installation, Controls, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Equipment: Fan Type, Installation, Controls, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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**CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 4 of 4) MECH-1C**

Project Name: BCSO School Bld E Classrooms Date: 1/5/2012  
 Project No: Bakersfield Address: 8,360 n/a

TEST DESCRIPTION	MECH-12A	MECH-13A	MECH-14A	MECH-15A	MECH-16A	MECH-17A	MECH-18A	MECH-19A	MECH-20A	MECH-21A	MECH-22A
Equipment: Fan Type, Installation, Controls, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Equipment: Fan Type, Installation, Controls, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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**AIR SYSTEM REQUIREMENTS (Part 1 of 2) MECH-2C**

Project Name: BCSO School Bld E Classrooms Date: 1/5/2012  
 Project No: Bakersfield Address: 8,360 n/a

**Indicate Air System Type (Central, Single Zone, Package, VAV, or etc...)**

Number of Systems: 2

**MANDATORY MEASURES**

MEASUREMENT	Requirement	Actual	Pass/Fail
Heating Equipment Efficiency	115% 3.20 COP	n/a	<input type="checkbox"/>
Cooling Equipment Efficiency	14.0 SEER 10.6 EER	16.0 SEER / 13.0 EER	<input type="checkbox"/>
HVAC Heat Pump Thermostat	1120a, 1120b	Yes	<input type="checkbox"/>
Fan Control/Thermostat	1120a, 1120b	n/a	<input type="checkbox"/>
Natural Ventilation	1120c	n/a	<input type="checkbox"/>
Mechanical Ventilation	1120d, 1.555 cfm	1.555 cfm	<input type="checkbox"/>
VAV Minimum Position Control	1120e	No	<input type="checkbox"/>
Demand Control Ventilation	1120f	Yes	<input type="checkbox"/>
Time Control	1120g	Programmable Switch	<input type="checkbox"/>
Setback and Setpoint Control	1120h	Setback Required	<input type="checkbox"/>
Outdoor Damper Control	1120i	Auto	<input type="checkbox"/>
Filter Status	1120j	n/a	<input type="checkbox"/>
Pre-Installation	1120k	Relinquished	<input type="checkbox"/>
Duct Leakage/Sealability	1120l	ABC, Roofing 1/4" ABC, Roofing 1/4"	<input type="checkbox"/>

**PRESCRIPTIVE MEASURES**

MEASUREMENT	Requirement	Actual	Pass/Fail
Calculated Design Heating Load	1440a & b	n/a	<input type="checkbox"/>
Proposed Heating Capacity	1440a & b	124,915 Btu/hr	<input type="checkbox"/>
Calculated Design Cooling Load	1440a & b	n/a	<input type="checkbox"/>
Proposed Cooling Capacity	1440a & b	190,478 Btu/hr	<input type="checkbox"/>
Fan Control	1440c	Variable Speed	<input type="checkbox"/>
DP Sensor Location	1440d	n/a	<input type="checkbox"/>
Supply Pressure Reset (SDC) units	1440e	n/a	<input type="checkbox"/>
Simultaneous Heat/Cool	1440f	No	<input type="checkbox"/>
Economizer	1440g	DP Temp (Integrated) DP Temp (Integrated)	<input type="checkbox"/>
Heat Air Supply Reset	1440h	Control Zone	<input type="checkbox"/>
Cool Air Supply Reset	1440i	Warmest Zone	<input type="checkbox"/>
Electric Resistance Heating <sup>1</sup>	1440j	n/a	<input type="checkbox"/>
Air Cooled Chiller Limitation	1440k	n/a	<input type="checkbox"/>
Duct Leakage Testing: Title 24, MECH-4-A must be submitted	1440l	No	<input type="checkbox"/>

1. Total installed capacity (MBtu/hr) of all electric heat on this project exclusive of electric auxiliary heat for heat pumps. If electric heat is used equal which exceeds by 1440j apply

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**MECHANICAL VENTILATION AND REHEAT (Part 1 of 2) MECH-3C**

Project Name: BCSO School Bld E Classrooms Date: 1/5/2012  
 Project No: Bakersfield Address: 8,360 n/a

**MECHANICAL VENTILATION (1120J)**

AREA BASIS	OCCUPANCY BASIS	VAV MINIMUM
Classroom 101	963 0.38 366	366 366
Classroom 102	923 0.38 350	350 350
Classroom 103	943 0.38 356	356 356
Work Room 104	249 0.38 91	91 91
Classroom 105	953 0.38 359	359 359
Classroom 106	853 0.38 320	320 320
Classroom 107	873 0.38 326	326 326
Work Room 108	249 0.38 91	91 91
HP F-2	176 0.15 26	26 26
Electrical Rooms	176 0.15 26	26 26
CUFC = 1, 2	176 0.15 26	26 26
Totals		Column Total Design Ventilation Air

**REHEAT LIMITATION (1444)**

Minimum reheat rate: per Section 1120, Table 3D.1A.  
 Based on total load or the greater of the suggested number of occupants and 50% of the CBC occupant load for areas purposes for space without fixed seating.  
 Required Ventilation Air (REQD V.A.) is the larger of the reheat rates calculated on an AREA BASIS or OCCUPANCY BASIS (Columns D or E).

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**ENVELOPE MANDATORY MEASURES: NONRESIDENTIAL ENV-MM**

Project Name: BCSO School Bld E Classrooms Date: 1/5/2012  
 Project No: Bakersfield Address: 8,360 n/a

**DESCRIPTION**

**Building Envelope Measures:**

1116(a) Insulated roofing material shall have been certified by the manufacturer to comply with the California Quality Standards for insulating material, Title 20 Chapter 4, Article 3.  
 1118(c) All insulating materials shall be installed in compliance with the flame spread rating and smoke density requirements of Sections 2602 and 707 of Title 24, Part 2.  
 1118(d) The opaque portions of framed glazing walls in nonresidential buildings shall have insulation with an installed R-value of no less than R-12 between framing members.  
 1117(a) All exterior joints and openings in the building that are observable sources of air leakage shall be caulked, gasketed, weatherstripped or otherwise sealed.  
 1118(a) 1. Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft<sup>2</sup> of window area, 0.3 cfm/ft<sup>2</sup> of door area for residential doors, 0.3 cfm/ft<sup>2</sup> of door area for nonresidential single doors (fenestration and doors), and 1.0 cfm/ft<sup>2</sup> for nonresidential double doors (fenestration).  
 1116(a) 2. Fenestration U-factor shall be rated in accordance with NFRC 100, or NFRC 100 for site-built fenestration or the applicable default SHGC.  
 1116(a) 3. Fenestration SHGC shall be rated in accordance with NFRC 100, or NFRC 100 for site-built fenestration or the applicable default SHGC.  
 1116(b) Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).

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**MECHANICAL MANDATORY MEASURES: NONRESIDENTIAL MECH-MM**

Project Name: BCSO School Bld E Classrooms Date: 1/5/2012  
 Project No: Bakersfield Address: 8,360 n/a

**Equipment and System Efficiencies**

1111 Any appliance for which there is a California standard established in the Appliance Efficiency Regulations will comply with the applicable standard.  
 1115(a) Fan type central furnaces shall not have a pilot light.  
 1123 Piping, except that conveying fluids at temperatures between 60 and 100 degrees Fahrenheit, or within HVAC equipment, shall be insulated in accordance with Standards Section 103.  
 1124 Air handling duct systems shall be installed and insulated in compliance with Sections 901, 652, 653, 654, and 605 of the CBC Standards.

**Controls**

1120(e) Each space conditioning system shall be installed with one of the following:  
 1A. Each space conditioning system serving building types such as offices and manufacturing facilities (and all others not explicitly exempted) on the Heating, Ventilating and Air Conditioning (HVAC) shall be installed with an automatic time switch with an adjustable manual override that allows operation of the system during off hours for up to 4 hours. The time switch shall be capable of programming different schedules for weekdays and weekends and have program backup capabilities that prevent the loss of the scheduler's program and time setting for at least 10 hours if power is interrupted or lost.  
 1B. An occupancy sensor to control the operating period of the system or.  
 1C. A 4-hour timer that can be manually operated to control the operating period of the system.  
 2. Each space conditioning system shall be installed with controls that temporarily restrict and temporarily operate the system as required to maintain a setback heating and/or a setpoint thermostat setpoint.  
 Each space conditioning system serving multiple zones with a combined conditioned floor area more than 25,000 square feet shall be provided with isolation devices. Each zone shall not exceed 50,000 square feet, shall be provided with isolation devices, such as valves or dampers that allow the supply of heating or cooling to the setback or shut off independently of other isolation areas, and shall be controlled by a time control device as described below.  
 1120(f) Thermostats shall have numeric setpoints (in degrees Fahrenheit (F)) and adjustable support stops accessible only to authorized personnel.  
 1120(g) Heat pumps shall be installed with controls to prevent electric resistance supplementary heater operation when the heating load can be met by the heat pump alone.  
 1120(h) Each space conditioning system shall be controlled by an individual thermostat that responds to temperature within the zone. Where used to control heating, the control shall be adjustable down to 55 degrees F or lower. For cooling, the control shall be adjustable up to 85 degrees F or higher. Where used for both heating and cooling, the control shall be capable of providing a deadband of at least 5 degrees F within which the supply of heating and cooling is shut off or reduced to a minimum.

**Ventilation**

1121(e) Controls shall be provided to allow outside air dampers or devices to be operated at the ventilation rates as specified on these plans.  
 1120(j) All gravity ventilating systems shall be provided with automatic or readily accessible manually operated dampers in all openings to the outside, except for combustion air openings.  
 1121(f) Ventilation System Acceptance: Before an occupancy permit is granted for a newly constructed building or space, or a new ventilation system serving a building or space is opened for normal use, all ventilation systems serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance.

**Service Water Heating Systems**

1119(a) Installation:  
 3. Temperature controls for public lavatories. The controls shall limit the outlet temperature to 110°F.  
 2. Circulating service water heating systems shall have a control capable of automatically turning off the circulating pump when hot water is not required.

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APPROVED  
 DIVISION OF STATE ARCHITECT  
 HIGH PERFORMANCE SECTION  
 APP.# DATE: 1-18-12  
 H. M. M.

**MDC**  
 MECHANICAL DESIGN CONCEPTS, INC.  
 5500 Ming Ave, Suite 251 Bakersfield, CA 93309  
 Tel #: (661) 397-2114 Fax #: (661) 397-2114  
 Job: 09091 Plt: 1-11-12

MARK	DATE	DESCRIPTION
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JOB NUMBER: 20010244  
 CAD DRAWING FILE  
 DRAWN BY: KW  
 CHECKED BY: MB  
 CHECK AND VERIFY ALL DIMENSIONS BEFORE PROCEEDING WITH THE WORK. REPORT DISCREPANCIES TO THE ARCHITECT.  
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 SHEET TITLE: TITLE 24 BUILDING "E"  
 SHEET IDENTIFICATION NUMBER: M-523