- Exception: Duct insula. s not required when the design temperature differenc .ween the interior and exterior of the duct or plenum does not exceed 15 degrees F.

8. All joints, longitudinal and transverse seams, and connections in ductwork must be securely sealed using weldments; mechanical fasteners with seals, gaskets, or mastics; mesh and mastic sealing systems; or tapes. Tapes and mastics must be listed and labeled in accordance with UL 181A or UL 181B.
   - Exception: Continuously welded and locking-type longitudinal joints and seams on ducts operating at static pressures less than 2 inches w.g. pressure classification.
9. Mechanical fasteners and seals, mastics, or gaskets must be used when connecting ducts to fans and other air distribution equipment, including multiple-zone terminal units.
10. All pipes serving space-conditioning systems must be insulated as follows: Hot water piping for heating systems: 1 in. for pipes <=1 1/2-in. nominal diameter 2 in. for pipes >1 1/2-in. nominal diameter. Chilled water, refrigerant, and brine piping systems: 1 in. insulation for pipes <=1 1/2-in. nominal diameter 1 1/2 in. insulation for pipes >1 1/2-in. nominal diameter. Steam piping: 1 1/2 in. insulation for pipes <=1 1/2-in. nominal diameter 3 in. insulation for pipes >1 1/2-in. nominal diameter.
    - Exception: Pipe insulation is not required for factory-installed piping within HVAC equipment.
    - Exception: Pipe insulation is not required for piping that conveys fluids having a design operating temperature range between 55 degrees F and 105 degrees F.
    - Exception: Pipe insulation is not required for piping that conveys fluids that have not been heated or cooled through the use of fossil fuels or electric power.
    - Exception: Pipe insulation is not required for runout piping not exceeding 4 ft in length and I in. in diameter between the control valve and HVAC coil.
11. Operation and maintenance documentation must be provided to the owner that includes at least the following information:a) equipment capacity (input and output) and required maintenance actionsb) equipment operation and maintenance manualsc) HVAC system control maintenance and calibration information, including wiring diagrams, schematics, and control sequence descriptions; desired or fielddetermined set points must be permanently recorded on control drawings, at control devices, or, for digital control systems, in programming commentsd) complete narrative of how each system is intended to operate.
12. Each supply air outlet or diffuser and each zone terminal device (such as VAV or mixing box) must have its own balancing device. Acceptable balancing devices include adjustable dampers located within the ductwork, terminal devices, and supply air diffusers.
13. Hot water distribution systems with total system capacities of 600 kBtu/h and greater must have controls that:a) automatically reset the hot water supply temperature, based on heating load, by at least 25% of the design supply-to-return water temperature difference orb) reduce pump flow by at least 50% of design flow rate by using- adjustable-speed drive(s) on pump(s)- multiple-stage pumps allowing at least 1/2 of the total pump horsepower to be automatically turned off- control valves designed to modulate or step down and close as a function of load- other approved means (supporting documentation or calculations must be submitted).
14. Service water heating equipment must meet minimum Federal efficiency requirements included in the National Appliance Energy Conservation Act and the Energy Policy Act of 1992, which meet or exceed ASHRAE 90.1 Code. New service water heating equipment can be assumed to meet these requirements.
15. Water-heating equipment must be provided with controls that allow the user to set the water temperature to 110 degrees F for dwelling units and 90 degrees F for other occupancies. Controls must limit output temperatures of lavatories in public facility restrooms to 110 degrees F.
16. Hot water space-heating systems with a capacity exceeding 300 kBtu/h supplying heated water to comfort conditioning systems must include controls that automatically reset supply water temperatures by representative building loads (including return water temperature) or by outside air temperature. Exceptions: - Where the supply temperature reset controls cannot be implemented without causing improper operation of heating, cooling, humidification, or dehumidification systems. - Hydronic systems that use variable flow to reduce pumping energy.
17. Stair and elevator shaft vents must be equipped with motorized dampers capable of being automatically closed during normal building operation and interlocked to open as required by fire and smoke detection systems. All gravity outdoor air supply and exhaust hoods, vents, and ventilators must be equipped with motorized dampers that will automatically shut when the spaces served are not in use. Exceptions: - Gravity (non-motorized) dampers are acceptable in buildings less than three stories in height above grade. - Ventilation systems serving unconditioned spaces

John Shields

From: Al Milasauskis[al@awmeng.com]
Sent: Monday, January 23,2006 5:13 PM
To: John F. Shields (E-mail)
Subject: FW: Valley Street Apartments

-----Original Message-----
From: Brant Miller
Sent: Monday, January 23, 2006 4:44 PM
To: 'lloyd@archetypepa.com'
Cc: Al Milasauskis; Bonnie Schucker
Subject: Valley Street Apartments

Please note that we forwarded the IECC (Comcheck) documentation to John Shields today. If you have any questions, please call.

In addition, there was a question about the capacity of the garage ventilation fan EF-1. I have reviewed it and it does need to be upsized to meet the 2003 IMC. The fan model stays the same, but following changes are required:

- upsize motor from 1/2 to 1 Hp
- upsize electrical service from 110 volt, 1 phase, 20 amp to 208 volt, 3 phase, 15 amp
- the air exhaust rate changes from 6500 CFM to 10000 CFM

Thank-you,

Brant ***S.*** Miller, P.E.
AWM Engineering, Inc.
88 State Street
Gorham, ME 04038
brant@awmeng.com
207.839.2167
207.839.2168 (fax)

Permit #

Permit Date

COMcheck Software Version 3.1 Release I

Envelope Compliance Certificate

2003 IECC

Report Date: 01/23/06

Data filename: G:\COMcheck\Projects\Valley Street Apartments - Envelope and Mechanical.cck

Section 1: Project Information

Project Title: Valley Street Apartments

Construction Site:
Gilman Street
Portland. ME

Owner/Agent:
315 Valley Street L.P.
P.O. Box 560
Portland, ME 04112

Designer/Contractor:
Archetype, P.A.
48 Union Wharf
Portland. ME 04101

Section 2: General Information

Building Location (for weather data):	Portland, Maine
Climate Zone:	**15**
Heating Degree Days (base 65 degrees F):	**7378**
Cooling Degree Days (base 65 degrees F):	**268**
Project Type:	New Construction
Glazing Area Percentage:	***29%***

Building Type	Floor Area
Multifamily	25307

Section 3: Requirements Checklist

Envelope PASSES: Design 10% better than code.

Climate-Specific Requirements:

Component Name/Description	Gross Area or Perimeter	Cavity R-value	Cont. R-value	Proposed U-Factor	Budget U-Factor
Roof: All-Wood Joist/Rafter/Truss	8100	38.0	0.0	0.028	0.053
Exterior Wall: Wood Frame, Any Spacing	9300	22.0	0.0	0.060	0.075
Windows: Vinyl Frame:Double Pane, Clear, SHGC 0.64	2730	---	---	0.500	0.526
Floor over Garage: Concrete Floor (over unconditioned space)	8500	---	24.0	0.037	0.043

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements

Air Leakage, Component Certification, and Vapor Retarder Requirements:

- ☐ 1 All joints and penetrations are caulked, gasketed, weather-stripped, or otherwise sealed
- ☐ 2 Windows, doors, and skylights certified as meeting leakage requirements
- ☐ 3 Component R-values & U-factors labeled as certified
- ☐ 4 Stair, elevator shaft vents, and other dampers integral to the building envelope are equipped with motorized dampers
- ☐ 5 Cargo doors and loading dock doors are weather sealed
- ☐ 6 Recessed lighting fixtures are (i) Type IC rated and sealed or gasketed, or (ii) installed inside an appropriate air-tight assembly with a 0 5 inch clearance from combustible materials and with 3 inches clearance from insulation material
- ☐ 7 Building entrance doors have a vestibule and equipped with closing devices

Exceptions

Building entrances with revolving doors.
Doors that open directly from a space less than 3000 **sq. ft.** in area.

❑ **8.** Vapor retarder installed.

Section 4: Compliance Statement

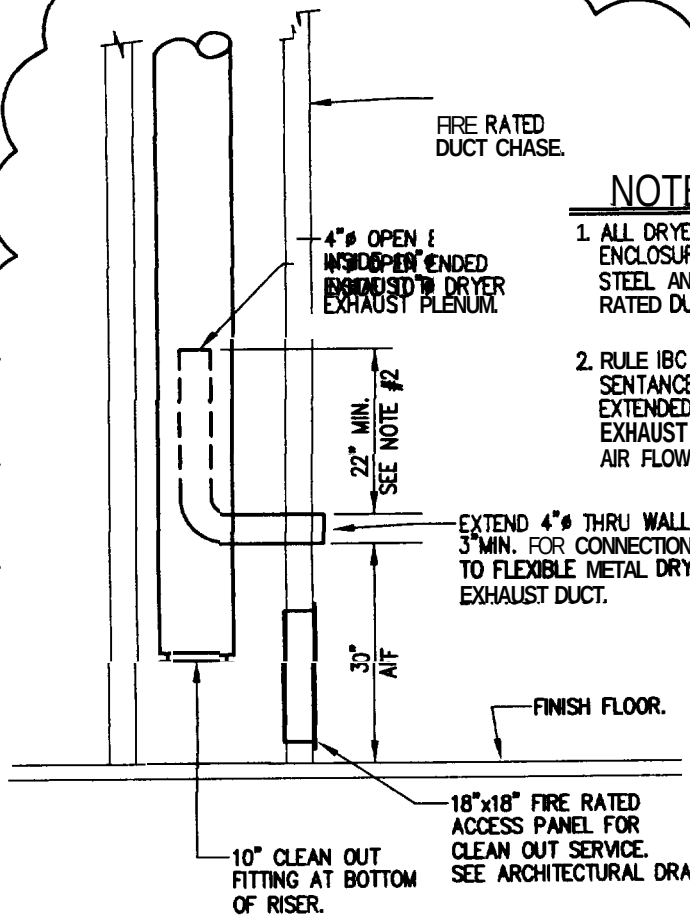
Compliance *Statement:* The proposed envelope design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed envelope system has been designed to meet the 2003 IECC requirements in COM*check* Version 3.1 Release 1 and to comply with the mandatory requirements in the Requirements Checklist.

John Shields — John Shields — 1/27/06

Principal Envelope Designer-Name | Signature | Date

Project Notes:

ENVELOPE AND MECHANICAL COMPLIANCE
(ALL SPACES EXCEPT UNCONDITIONED GARAGE)



NOTES:

1. ALL DRYER EXHAUST DUCTWORK IN FIRE RATED ENCLOSURES TO BE CONSTRUCTED OF GALVENIZED STEEL AND BUILT TO SMACNA STANDARDS FOR 3' RATED DUCTWORK..

2. RULE IBC 2003 PARAGRAPH 716.5.3.1 EXCEPTIONS #1 SENTANCE 11. 'STEEL EXHAUST SUB DUCTS ARE EXTENDED AT LEAST 22 INCHES VERTICALLY IN EXHAUST SHAFTS. PROVIDED THERE IS A CONTINUOUS AIR FLOW UPWARD TO THE OUTSIDE.

① DRYER EXHAUST DUCT DETAIL

SCALE: 1/2" = 1'-0"

NOTE:
THIS DETAIL SIMILAR OF 3RD AND 4TH FLOOR LAUNDRY ROOMS MINUS ACCESS PANEL AND CLEAN OUT.

1

REVISIONS:

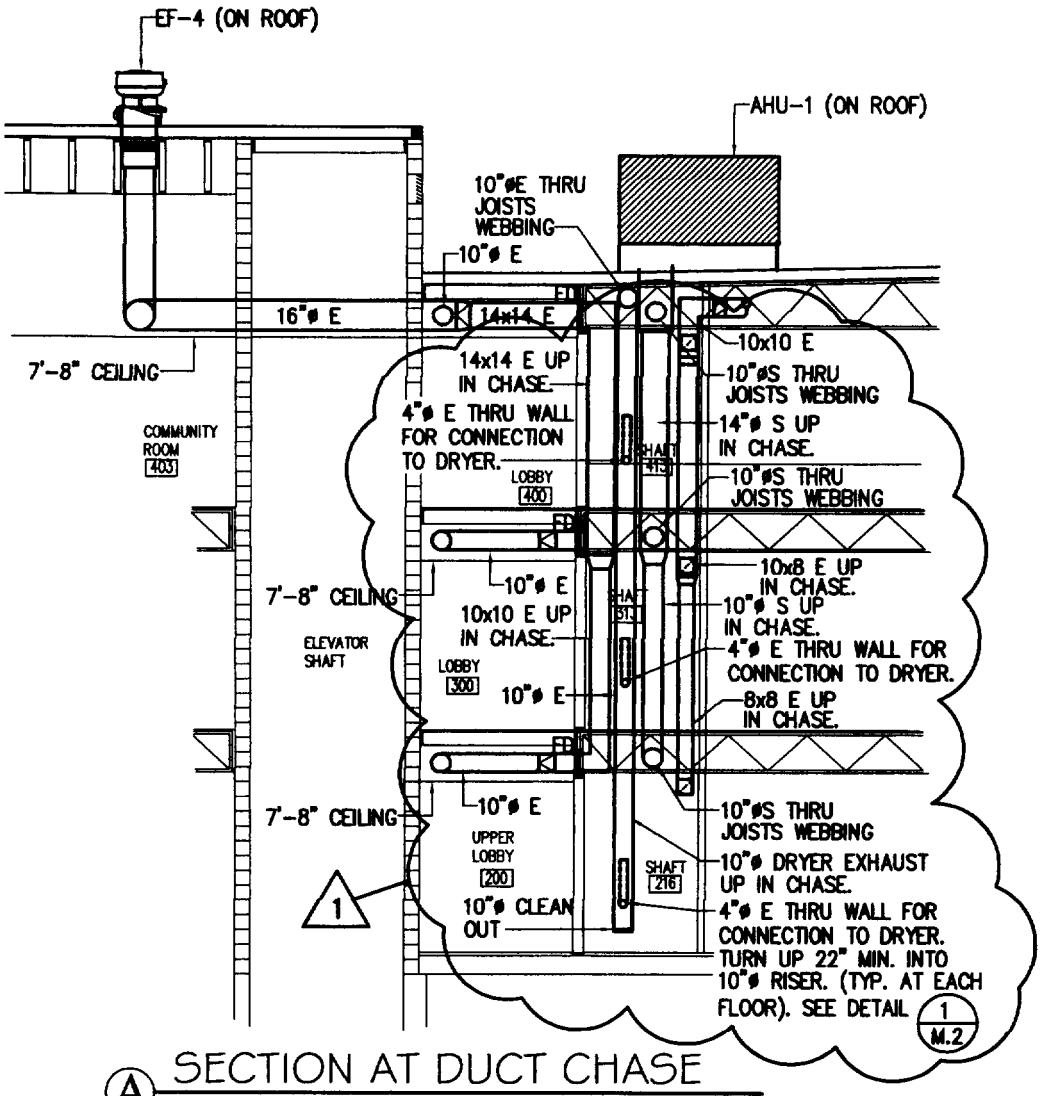
1 01-12-06 ADD DETAIL "1" TO SHEET M.3.
RECONFIGURE DRYER EXHAUST DUCTWORK IN CHASE AS SHOWN.

VALLEY STREET APARTMENTS
GILMAN STREET
PORTLAND, MAINE 04102

DRYER EXHAUST DUCT DETAIL-Ref. Sht. M.3

PROJECT NO:	SCALE:	DATE:	SHEET NO
05-007	AS NOTED	01-12-06	MSK-1

AWM engineering, inc.
CONSULTING ENGINEERS
Mechanical • Elect. • Enviro • Construction Management
88 State Street Gorham, Mains 04038
Telephone: (207)839-2167 * E-mail: stuf&wmeng.com



A SECTION AT DUCT CHASE

SCALE: 1/8" = 1'-0"

REVISIONS:

1 01-12-06
RECONFIGURE DRYER EXHAUST DUCTWORK IN CHASE AS SHOW.
RELOCATE FIRE DAMPERS TO CHASE WALL(S) WERE INDICATED.

VALLEY STREET APARTMENTS
GILMAN STREET
PORTLAND. MAINE 04102

SECTION AT DUCT CHASE-Ref. Sht. M.3

PROJECT NO:	SCALE:	DATE:	SHEET NO:
05-007	AS NOTED	01-12-06	MSK-2

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CONSULTING ENGINEERS
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