2009 IECC

Construction Site

Section 1: Project Information Project Type: New Construction Project Title: Keller Springs Lofts

Designer/Contractor

Section 2: General Information Suilding Location (for weather data) Climate Zone.
Building Type for Enveloce Requirements: Residential Vertical Glazing / Wall Area Pct. Activity Type(s)

Section 3: Requirements Checklist

81-2: Wood Frame, Any Spacing

B1-ALT: Wood Frame, Any Spacing

B2: Wood Frame, Any Spacing

Project Title: Keller Springs Lofts Report date: 08/09/11

Climate-Specific Requirements: Gross Area Cavity R- Cont. R- Proposed Budget U-
 or Perimeter Value
 Value
 U-Factor
 Factor(a)

 10 2000
 -38.0
 0.0
 0.027
 0.027
 Roof 1. All-Wood Joist/Rafter/Trus Floor 1, Stab-On-Grade Unheated E1: Wood Frame, Any Specing Window 1: Vinvi Frame Double Pane with Low-E, Clear, SHGC 54 - - 0.490 0,650 PF: Vinyl Frame Double Pane with Low-E., Clear, SHGC 0.29, PF 1197 - 0.490 0.650 WINDOWS: Virryl Frame Double Pane with Low-E, Clear, SHGC 342 -- -- 0.490 0.650
 Window 4: Vinyl Frame Double Pane with Low-E, Clear, SHGC
 1296
 - - 0.490
 0.650

 0 29
 - - - 0.490
 0.650

 Window 5: Vinyl Frame: Double Pane with Low-E, Clear, SHGC
 792
 —
 —
 0.490
 0.650

 0.29
 A1-1: Wood Frame, Any Spacing Window 8. Vinyl Frame, Double Pane with Low-E, Clear, SHGC 495 — 0.490 0.650 0.29, PF 0.75 216. 13.0 0.0 0.089 0.089 A1-3. Wood Frame, Any Spacing Window 7: Vinyl Frame Double Pane, with Low-E, Clear, SHGC 99 -- -- 0.490 0.650 0.29; PF 0.75

Project Title: Keller Springs Lofts Report date, 08/09/11 Data filèname, Q \ Project2011\:1130355-Keller:Springs Lofts - Réstart\ Référence\ CómCheck\ Building cok Page 1

216 13.0 0.0 0.089 0.089 Window 8: Vinyl Frame: Double Pane with Low-E. Clear, SHGC 126 --- 0.490 0.650 0.29 A2: Wood Frame, Any Spacing Window 9: Vinyl Frame: Double Pane with Low-E, Clear, SHGC 2925 -- - 0.490 0.650 0.29, PF 0.85 Window 10: Vinyl Frame: Double Pane with Low-E. Clear, SHGC 243 --- -- 0.490 0.650 A2-2: Wood Frame, Any Spacing Window: Vinyl Frame:Double Pane with Low-E, Clear. SHGC 243 -- - 0.490 0.850 0.29, PF 0.85
 Window copy 1. Vinyl Frame: Double Pane with Low-E, Clear, SHGC 0.29
 216
 - - 0.490
 0.650
 A2-SP: Wood Frame, Any Spacing Window copy 2; Vinyl Frame: Double Pane with Low-E, Clear, 171 --- 0.490 0:650 A3; Wood Frame, Any Spacing Window copy 1: Vinyl Frame:Double Pane with Low-E, Clear, 936 --- -- 0.490 0.650 SHGC 0.29 243 13.0 0.0 0.089 0.089 A3-2: Wood Frame, Any Spacing Window copy 2: Vinyl Frame: Double Pane with Low-E, Clear, 99 --- - 0.490 0.650 SHGC 0.29, PF 0.85 A3-3: Wood Frame. Any Spacing 243 13.0 0.0 0.089 0.089 Window copy 3: Vinyl Frame: Double Pane with Low-E, Clear, 63 --- -- 0.490 0.650 SHGC 0.29. PF 0.85 Window copy 4, Vinyl Frame: Double Pane with Low-E, Clear, 54 --- 0.490 0.650 Window copy 5; Vinyl Frame: Double Pane with Low-E, Clear. 108 --- 0.490, 0.650 972 13.0 0.0 0.089 0.089 A3-3 ALT-2: Wood Frame, Any Spacing Window copy 6; Vinyl Frame: Double Pane with Low-E, Clear. 108 --- -- 0.490 0.650 SHGC 0.29 A3-3 ALT-3: Wood Frame, Any Spacing Window copy 7: Vinyl Frame:Double Pane with Low-E, Clear, 108 --- 0.490 0.650 6561 13.0 0.0 0.089 0.089 A3-3 ALT-D: Wood Frame, Any Spacing Window: Vinyl Frame; Double Pane with Low-E, Clear, SHGC 1701 -- - 0.490 0.650 0.29, PF 0.61 Window: Vinyl Frame: Double Pane with Low-E, Clear. SHGC 1458 --- -- 0.490 0.650 3 ALT-E: Wood Frame, Any Spacing 972 13.0 0.0 0.089 0.089
 Window copy 1: Vinyl Frame: Double Pane with Low-E, Clear, SHGC, 0.29, PF 0.61
 97.2
 13.0
 0.0
 0.089
 0.089
 0.089
 Window copy 2: Vinyl Frame: Double Pane with Low-E, Clear. 216 --- -- 0.490 0.650 11320 13.0 0.0 0.089 0.089 A4: Wood Frame, Any Spacing Window copy 2: Vinyl Frame: Double Pane with Low-E, Clear, 2000 --- -- 0.490 0.650 Window copy 3: Vinyl Frame: Double Pane with Low-E, Clear. 2709 --- 0.490 0.650 SHGC 0.29 PF 0.61 6300 13.0 0.0 0.089 0.089 B1: Wood Frame, Any Spacing Window copy 3; Vinyl Frame: Double Pane with Low-E. Clear. 2160 --- 0.490. 0.650 Window copy 4: Vinyl Frame:Double Pane with Low-E, Clear, 1260 --- -- 0.490 0.650 SHGC 0.29, PF 0.44

Window copy 4: Vinyl Frame; Double Pane with Low-E, Clear. 4752 -- 0.490 0.650

Window copy 4: Vinyl Frame: Double Pane With Low-E, Clear, 585 -- 0.490 0.650 SHGC 0.29, PF 0.85

Window copy 5: Vinyl Frame: Double Pane with Low-E, Clear, 270 --- 0.490 0.650

Window copy 4: Vinyl Frame: Double Pane with Low-E, Clear, 216 --- 0.490 0.650

(1130355-Keller Springs Lofts - Restart\ Reference\ ComCheck\ Building.cck Page 2

1575 13.0 0.0 0.089 0.089

Window copy 5: Vinyl Frame: Double Pane with Low-E. Clear. 189 --- -- 0.490 0.650 SHGC 0.29, PF 0.44
 BRIGO 0.29, PT 0.44

 B2-1; Wood Frame, Any Spacing
 945
 13.0
 0.0
 0.089
 0.089

 Window copy 5; Vinyl Frame: Double Pane with Low-E. Clear.
 216
 -- -- -0.490
 0.650
 Window copy 6: Vinyl Frame:Double Pane with Low-E, Clear, 189 --- -- 0.490 0.650 SHGC 0.29, PF 0.67 3780 13.0 0.0 0.089 0.089 B2-C: Wood Frame, Any Spacing Window copy 6: Vinyl Frame: Double Pane with Low-E, Clear, 1080 - 0.490 0.650 SHGC 0.29 B2-5A: Wood Frame, Any Spacing Window copy 7: Vinyl Frame: Double Pane with Low-E, Clear, 135 --- -- 0.490 0.650 B2-1A: Wood Frame. Any Spacing 315 13.0 0,0 0.089 0.089 B2-2A: Wood Frame. Any Spacing Window copy 9: Vinyl Frame: Double Pane with Low-E, Clear. 153 -- - 0.490 0.650 SHGC 0.29 315 13.0 0.0 0.039 0.089 B2-3A: Wood Frame, Any Spacing Window copy 10: Vinyl Frame:Double Pane with Low-E, Clear. 135 -- 0.490 0.650 B2-ALT 2: Wood Frame. Any Spacing 1931 13.0 0.0 0.089 0.089 Window copy 11: Vinyl Frame: Double Pane with Low-E, Clear. 591 -- - 0.490 0.650 SHGC 0.29 B2-4: Wood Frame, Any Spacing Window copy 12: Vinyl Frame; Double Pane with Low-E, Clear, 72 --- 0.490 0.650 Window copy 13: Viny! Frame:Double Pane with Low-E, Clear, 117 --- 0.490 0.650 SHGC 0.29, PF 0.66 B2-ALT3: Wood Frame, Any Spacing Window copy 12: Vinyl Frame:Double Pane with Low-E, Clear, 459 --- 0.490 0:650 1053 13.0 0.0 0.089 0.089 B2-ALT4: Wood Frame. Any Spacing Window copy 13: Vinyl Frame:Double Pane with Low-E, Clear, 135 --- 0.490 0.650 B2-ALT5: Wood Frame Any Spacing 1053 13.0 0.0 0.089 0.089 Window copy 14: Vinyl Frame.Double Pane with Low-E, Clear. 459 -- 0.490 0.650 SHGC 0.29

 SHGC 0.29

 B2-ALT1: Wood Frame Any Spacing
 2106
 13.0
 0.0
 0.089
 0.089

 Window copy 15: Vinyl Frame Double Pane with Low-E, Clear.
 1026
 - - 0.490
 0.650

 Window copy 16: Vinyl Frame Double Pane with Low-E, Clear. 1026 --- -- 0.490 0.659 B3-ALT B: Wood Frame, Any Spacing Window copy 17: Vinyl Frame:Double Pane with Low-E, Clear. 810 --- 0.490 0.650 B3-1: Wood Frame, Any Spacing Window copy 17: Vinyl Frame:Double Pane with Low-E, Clear, 342 --- 0.490 0.650 216 13.0 0,0 0,089 0,089 A1-HC: Wood Frame, Any Spacing Window copy 18: Vinyl Frame:Double Pane with Low-E, Clear, 18 --- -- 0.490 0.650 Window copy 19: Vinyl Frame.Double Pane with Low-E; Clear. 63 --- 0.490 0.650 SHGC 0.29, PF 0.67

 SHGC 0.29, PF 0.67

 B1-HC; Wood Frame, Any Spacing
 315
 13.0
 0.0
 0.089
 0.089

 Window copy 19: Viny, Frame: Double, Pane with Low-E; Clear.
 203
 -- -- 0.490
 0.650

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements. Air Leakage, Component Certification, and Vapor Retarder Requirements:

Project Title: Keller Springs Lofts Report date: 08/09/11

Data filename: Q:\ Project2011\ 1130355-Keller Springs Lofts - Restart\ Reference\ ComCheck\ Building.cck Page 3

🗆 1. All joints and penetrations are caulked, gasketed or covered with a moisture vapor-permeable wrapping material installed

COMcheck Software Version 3.8.2 Mechanical Compliance Certificate

Section 1: Project Information

2009 IECC

Project Type: New Construction Project Title: Keller Springs Lofts Construction Site: Designer/Contractor

Section 2: General Information Building Location (for weather data). Addison, Texas

Section 3: Mechanical Systems List

Quantity System Type & Description AH-A1 (Single Zone);
Heating! 48 each - Central Furnace, Electric, Capacity = 6 kBtu/h
Coeling, 48 each - Shift System, Capacity = 15 kBtu/h, Efficiency = 13.00 SEER, Air-Cooled Condenser AH-AIR (Single Zone):
Heating: 16 each - Central Furnace, Electric, Capacity = 8 kBtu/n
Cooling: 16 each - Split System, Capacity = 19 kBtu/n, Efficiency = 13.00 SEER, Air-Cooled Condenser

AH-A2 (Single Zone).

Heating: 61 each - Central Furnace, Electric, Capacity = 6 kBtu/n

Cooling: 61 each - Split System, Capacity = 15 kBtu/n, Efficiency = 13.00 SEER, Air-Cooled Condenser AH-A2SP (Single Zone). Heating: 3-each - Central Furnace, Electric, Capacity = 8 kBtu/h Cooling: 3 each - Split System; Capacity = 19 kBtu/n, Efficiency = 13 00 SEER, Air-Cooled Condenser AH-A3 (Single Zone):
Heating: 49 each - Central Furnace; Electric, Capacity = 8 kBtu/h
Cooling: 49 each - Spit System, Capacity = 19 kBtu/h, Efficiency = 13.00 SEER, Air-Cooled Condenser AH-A4 (Single Zone):
Heating: 59 each - Central Furnace, Electric, Capacity = 8 kBtu/n
Cooling: 59 each - Split:System; Capacity = 19 kBtu/h, Efficiency = 13.00 SEER, Air-Cooled Condenser

AH-B1A (Single Zone)
Heating; 59 each - Central Furnace, Electric, Capacity = 6 kBtu/n Cooling: 59 each - Split System, Capacity = 15 kBtu/h, Efficiency = 13.00 SEER, Air-Cooled Condenser AH-B1B (Singlé Zone) **
Heating: 59 each - Central Furnace, Electric, Capacity = 6 kBtu/n Cooling: 59 each - Split System, Capacity = 15 kBtu/h, Efficiency = 13 00 SEER, Air-Cooled Condenser AH-B2A (Single Zone):
Heating: 43 each - Central Furnace, Electric, Capacity = 6 kBtu/n
Cooling: 43 each - Split System, Capacity = 15 kBtu/n, Efficiency = 13.00 SEER, Air-Cooled Condenser AH-B2B (Single Zone) AH-B28 (Single: Zone) Heating: 43 each - Central Furnace, Electric, Capacity = 6 k8tu/h Cooling: 43 each - Spilt System, Capacity = 15 kBtu/n, Efficiency = 13.00 SEER; Air-Cooled Condenser

AH-B3A (Single Zone) : Heating: 12 each - Central Furnace, Electric, Capacity = 8 kBtu/h

Project Title: Keller Springs Lofts Report date: 08/09/11 1 1\ 1130355-Keller Springs Lofts - Restart\ Reference\ ComCheck\ Building.cck Page 5

COMcheck Software Version 3.8.2 Mechanical Compliance Certificate

2009 IECC Section 1: Project Information

Project Type: New Construction Project Title: Keller Springs Lofts Construction Site: Owner/Agent:

Designer/Contractor: Beeler Guest Owens Architects 4144 N. Central eXPY Suite 855 Dallas, TX 75204

Section 2: General Information Building Location (for weather data): Addison, Texas

Section 3: Mechanical Systems List

Quantity System Type & Description AH-A4 (Single Zone) ; Heating: 48 each - Central Furnace, Electric, Capacity = 6 kBtw/h Cooling: 48 each - Spitt System, Capacity = 15 kBtw/n, Efficiency = 13 00 SEER, Air-Cooled Condenser AH-A1R (Single Zone) Heating; 16 each - Central Furnace, Electric, Capacity = 8 kBtu/h

colling: 16 each - Split System, Capacity = 19 kBtu/n, Efficiency = 13 00 SEER, Air-Cooled Condenser Heating: 61 each - Central Furnace, Electric, Capacity = 6 kBtu/h Gooling 61 each - Split System, Capacity = 15 kBtu/h, Efficiency = 13,00 SEER, Air-Cooled Condenser AH-A3SP (Single Zone):
Heáting: 3 each - Central Furnace, Electric, Capacity = 8 kBtu/h
Cooling: 3 each - Split System, Capacity = 19 kBtu/h, Efficiency = 13.00 SEER, Air-Cooled Condenser AH-A3 (Single Zone)

Heating: 49 each - Central Furnace, Electric, Capacity = 8 kBtu/h

Cooling: 49 each - Split System, Capacity = 19 kBtu/h, Efficiency = 13,00 SEER, Air-Cooled Condenser

AH-A4 (Single Zone) Heating: 59 each - Central Furnace, Electric, Capacity = 8 kBtt://h Cooling 59 each - Split-System, Capacity = 19 kBtt://h. Efficiency = 13 00 SEER, Air-Cooled Condenser: AH-B1A (Single Zone):
Heating: 59 each - Central Furnace, Electric, Capacity = 6 kBtu/h
Cooling: 59 each - Split System, Capacity = 15 kBtu/h, Efficiency = 13 00 SEER, Air-Cooled Condenser AH-B1B (Single Zone) .. Heating: 59 each - Central Furnace, Electric, Capacity = 6 kBts/h Cooling: 59 each - Split System, Capacity = 15 kBtu/h, Efficiency = 13 00 SEER, Air-Cooled Condenser

Heating: 43 each - Central Furnace, Electric, Capacity = 6 kBtu/h Cooling: 43 éach - Split System, Capacity = 15 kBtu/h, Efficiency = 13 00 SEER, Xir-Cooled Condenser AH-B2B (Single Zone): Heating: 43 each - Central Furnace, Electric, Capacity = 8 kBtu/h Cooling: 43 each - Split System, Capacity = 15 kBtu/h, Efficiency = 13 00 SEER, Air-Cooled Condenser AH-B3A (Single Zone) :
Heating: 12 each - Central Furnace, Electric, Capacity = 8 kBtw/h

Project Title: Keller Springs Lofts Report date: 08/09/11 Q:\(\text{Q:X}\) Project 2011\(\text{1130355-Keller Springs Lofts - Restart\) Reference\(\text{ComCheck\}\) Building.cok Page 5

Cooling: 12 each - Split System, Capacity = 19 kBtu/h, Efficiency = 13,00 SEER, Air-Cooled Condenser AH-B3B (Single Zone):
Heating: 12 each - Central Furnace, Electric. Capacity = 8 kBtu/h
C∞ling: 12 each - Split System, Capacity = 19 kBtu/h, Efficiency = 13.00 SEER, Air-Cooled Condenser AH-E1 (Single Zone): Heating: 2 each - Central Furnace, Electric, Capacity = 6 kBtu/r

Cooling: 2 each - Split System, Capacity = 15 kBtu/h, Efficiency = 13.00 SEER. Air-Cooled Condenser AH-E1R (Single Zone):
Heating: 1 each - Central Furnace. Electric. Capacity = 6 kBlu/h
Cooling: 1 each - Split System, Capacity = 15 kBtu/h, Efficiency = 13.00 SEER, Air-Cooled Condenser

AH-1 (Single Zone):
Heating: 1 each - Central Furnace, Electric, Capacity = 15 kBtu/h
Cooling: 1 each - Split System, Capacity = 55 kBtu/h, Efficiency = 13.00 SEER, Air-Cooled Condenser, No
Economizer, Economizer exception: Humidity Requirements AH-2 (Single Zone): Heating: 1 each - Central Furnace, Electric, Capacity = 15 kBtu/h Coding: 1 each - Split System, Capacity = 55 kBtu/h, Efficiency = 13.00 SEER. Air-Cooled Condenser, No Economizer , Economizer exception: Humidity Requirements

AH-4 (Single Zone) : AH-4 (single Zone):
Heating: 1 each - Central Furnace. Electric. Capacity = 15 kBtu/h
Cooling: 1 each - Split System, Capacity = 55 kBtu/h, Efficiency = 13,00 SEER, Air-Cooled Condenser, No
Economizer , Economizer exception: Humidity Requirements AH-5 (Single Zone):
Heating: 1 each - Central Furnace, Electric, Capacity = 15 kBtu/h
Cooling: 1 each - Split System, Capacity = 55 kBtu/h, Efficiency = 13.00 SEER, Air-Cooled Condenser, No Economizer, Economizer exception: Humidity Requirements

AH-3 (Single Zone):
Heating: 1 each - Central Furnace Electric. Capacity = 5 kBtu/n
Cooling. 1 each - Split System, Capacity = 17 kBtu/n, Efficiency = 13.00 SEER. Air-Cooled Condenser RTU (Single Zone):
Heating: 5 each - Central Furnace. Gas. Capacity = 125 kBtu/h, Efficiency = 82.40% Et
Cooling: 5 each - Roottop Package Unit. Capacity = 71 kBtu/h, Efficiency = 12.00 EER. Air-Cooled Condenser,
Air Economizer

Water Heater 1: Electric Storage Water Heater, Capacity: 50 gallons, Efficiency: 0.91 EF Water Heater 2: Electric Storage Water Heater, Capacity: 30 gallons. Efficiency, 0.93 EF

Section 4: Requirements Checklist

Requirements Specific To: AH-A1 ☐ 1. Equipment minimum efficiency: Split System: 13.0 SEER □ 2. Newly purchased equipment meets the efficiency requirements ☐ 3. Hot gas bypass limited to 50% of total cooling capacity

Requirements Specific To: AH-A1R : ☐ 1. Equipment minimum efficiency: Split System: 13:0 SEER □ 2. Newly purchased equipment meets the efficiency requirements ☐ 3. Hot gas bypass limited to 50% of total cooling capacity Requirements Specific To: AH-A2: ☐ 1. Equipment minimum efficiency: Split System: 13.0 SEER

☐ 3. Hot gas bypass limited to 50% of total cooling capacity Requirements Specific To: AH-A2SP ☐ 1. Equipment minimum efficiency: Split System: 13.0 SEER ☐ 2. Newly purchased equipment meets the efficiency requirements ☐ 3. Hot gas bypass limited to 50% of total cooling capacity

☐ 2. Newly purchased equipment meets the efficiency requirements

Requirements Specific To: AH-A3: FI 1 Equipment minimum efficiency: Split System: 13.0 SEER ☐ 2. Newly purchased equipment meets the efficiency requirements 3. Hot gas bypass limited to 50% of total cooling capacity Requirements Specific To: AH-A4:

☐ 1. Equipment minimum efficiency: Split System: 13.0 SEER

Project Title: Keller Springs Lofts Report date: 06/09/11
Data filename: Q:\ Project2011\ 1130355-Keller Springs Lofts - Restart\ Reference\ ComCheck\ Building.cck Page 6

☐ 2. Newly purchased equipment meets the efficiency requirements

1 1. Equipment minimum efficiency: Split System: 13.0 SEER

1. Equipment minimum efficiency: Split System: 13.0 SEER

□ 1. Equipment minimum efficiency: Split System: 13.0 SEER

1. Equipment minimum efficiency: Split System: 13.0 SEER

☐ 2. Newly purchased equipment meets the efficiency requirements

1. Equipment minimum efficiency: Split System: 13.0 SEER 2. Newly purchased equipment meets the efficiency requirements

☐ 1. Equipment minimum efficiency: Split System: 13.0 SEER

□ 1. Equipment minimum efficiency: Split System: 13.0 SEER

☐ 1. Equipment minimum efficiency: Split System: 13.0 SEER

☐ 1. Equipment minimum efficiency: Split System: 13.0 SEER

☐ 1. Equipment minimum efficiency: .Split System: 13.0 SEER

□ 1. Equipment minimum efficiency: Split System: 13.0 SEER

☐ 1. Equipment minimum efficiency: Split System: 13.0 SEER

☐ 2. Newly purchased equipment meets the efficiency requirements

011\ 1130355-Keller Springs Lofts - Restart\ Reference\ ComCheck\ Building.cck Page 7

☐ 2. Newly purchased equipment meets the efficiency requirements

☐ 2. Newly purchased equipment meets the efficiency requirements

□ 2. Newly purchased equipment meets the efficiency requirements

☐ 3. Hot gas bypass limited to 50% of total cooling capacity

□ 3. Hot gas bypass limited to 50% of total cooling capacity

 \square 3. Hot gas bypass limited to 50% of total cooling capacity

☐ 3. Hot gas bypass limited to 50% of total cooling capacity

☐ 2. Newly purchased equipment meets the efficiency requirements

☐ 2. Newly purchased equipment meets the efficiency requirements

2. Newly purchased equipment meets the efficiency requirements

☐ 2. Newly purchased equipment meets the efficiency requirements

3. Newly purchased equipment meets the efficiency requirements

2. Newly purchased equipment meets the efficiency requirements

☐ 3. Hot gas bypass limited to 50% of total cooling capacity

☐ 3. Hot gas bypass limited to 50% of total cooling capacity

☐ 3. Hot gas bypass limited to 50% of total cooling capacity

3. Hot gas bypass limited to 50% of total cooling capacity

□ 3. Hot gas bypass limited to 50% of total cooling capacity

☐ 3. Hot gas bypass limited to 50% of total cooling capacity

☐ 3. Hot gas bypass limited to 50% of total cooling capacity

☐ 3. Hot gas bypass limited to 50% of total cooling capacity

Requirements Specific To: AH-B1A:

Requirements Specific To: AH-B1B:

Requirements Specific To: AH-B2A:

Requirements Specific To: AH-B2B:

Requirements Specific To: AH-B3A:

Requirements Specific To: AH-B3B:

Requirements Specific To: AH-E1

Requirements Specific To: AH-E1R:

Requirements Specific To: AH-1:

Requirements Specific To: AH-2:

Requirements Specific To: AH-4:

Requirements Specific To: AH-5:

Requirements Specific To: AH-3:

Requirements Specific To: RTU:

4. Integrated air economizer required

☐ 2. First 8 ft of outlet piping is insulated

Project Title: Keller Springs Lofts Report date: 08/09/11

☐ 3. Hot gas bypass limited to 50% of total cooling capacity

☐ 3. Hot gas bypass limited to 50% of total cooling capacity

□ 5. Hot gas bypass limited to 50% of total cooling capacity

□ 4. Heat traps provided on inlet and outlet of storage tanks

☐ 4. Heat traps provided on inlet and outlet of storage tanks

☐ 2. Minimum one temperature control device per system

☐ 4. Load calculations per ASHRAE/ACCA Standard 183

Exception: Continuously operating zones

R-8 supply and return air duct insulation outside the building

Exception: Ducts located within equipment

Exception: Runouts <4 ft in length.

Project Title: Keller Springs Lofts Report date: 08/09/11

Exception: Systems with heat recovery.

dampers are interlocked with fan

specifically exempted

☐ 19. Automatic controls for freeze protection systems present

Section 5: Compliance Statement

Corey Hewitt - Mechanical

Larger pipe insulated to 1 in, thickness

Exception: 2 kW demand or less, submit calculations

7. R-5 supply and return air duct insulation in unconditioned spaces

Requirements Specific To: Water Heater 1:

Requirements Specific To: Water Heater 2:

2. First 8 ft of outlet piping is insulated

☐ 1. Equipment minimum efficiency: Split System: 13.0 SEER

☐ 2. Newly purchased equipment meets the efficiency requirements

3.2. Equipment minimum efficiency: Rooftop Package Unit: 11.0 EER

☐ 1. Electric Water Heater efficiency: 0.9 EF (267 SL, Btu/h (if > 12 kW))

☐ 1. Electric Water Heater efficiency: 0.9 EF (211 St. Btu/h (if > 12 kW))

☐ 3. Hot water storage temperature adjustable down to 120°F or lower

☐ 1. Plant equipment and system capacity no greater than needed to meet loads

☐ 3. Hot water storage temperature adjustable down to 120°F or lower

□ 1. Equipment minimum efficiency: Central Furnace (Gas): 80,0 % Et (or 78% AFUE)

□ 3. Cooling system provides a means to relieve excess outdoor air during economizer operation.

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

5. Automatic Controls: Setback to 55°F (heat) and 85°F (cool): 7-day clock, 2-hour occupant override, 10-hour backup

🗆 9. Ducts sealed - longitudinal seams on rigid ducts; transverse seams on all ducts; UL 181A or 181B tapes and mastics

Exception: Fluid not heated or cooled with renewable energy. Exception: Piping within room fan-coil (with AHRI440 rating) and unit ventilators (with AHRI840 rating).

Exception: Special occupancy or special applications where wide temperature ranges are not acceptable and are

☐ 16. Demand control ventilation (DCV) present for high design occupancy areas (>40 person/1000 ft2 in spaces >500 ft2)

and served by systems with any one of 1) an air-side economizer, 2) automatic modulating control of the outdoor air damper,

Exception: Multiple-zone systems without DDC of individual zones communicating with a central control panel.

🗆 17. Total cooling capacity without economizers must be less than 480 kBtu/h. This project lists 374082 kBtu/h capacity

20. Exhaust air heat recovery included for systems 5,000 cfm or greater with more than 70% outside air fraction or

Exception: Gravity dampers acceptable in buildings <3 stories

Exception: Gravity dampers acceptable in systems with outside or exhaust air flow rates less than 300 cfm where

Exception: Hazardous exhaust systems, commercial kitchen and clothes dryer exhaust systems that the International

Exception: Where more than 60 percent of the outdoor heating energy is provided from site-recovered or site solar

Exception: Laboratory fume hood exhaust systems that have either a variable air volume system capable of reducing

exhaust and makeup air volume to 50 percent or less of design values or, a separate make up air supply meeting the following makeup air requirements: a) at least 75 percent of exhaust flow rate. b) heated to no more than 2°F below

room setpoint temperature, c) cooled to no lower than 3°F above room setpoint temperature, d) no humidification

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 2009 IECC requirements in GOM/Check Version 3.8.2 and to comply with the mandatory requirements in the Requirements Checklist.

Project Title: Keller Springs Lofts Report date: 08:09/11

Data filename: Q^\project2011\.1130355-Keller Springs Lofts - Restart\ Reference\ ComCheck, Building.cck Page 9

Exception: Cooling systems in climates with a 1 percent cooling design wet-bulb temperature less than 64°F. Exception: Systems requiring dehumidification that employ energy recovery in series with the cooling cdil.

Exception: Spaces where the supply airflow rate minus any makeup or outgoing transfer air requirement is less than

Data filename: Q:\ Project2011\ 1130355-Keller Springs Lofts - Restart\ Reference\ ComCheck\ Building.cck Page 8

Exception: Standby equipment automatically off when primary system is operating

Exception: Multiple units controlled to sequence operation as a function of load

☐ 3. Minimum one humidity control device per installed humidification/dehumidification system

☐ 6. Outside-air source for ventilation; system capable of reducing OSA to required minimum

R-8 insulation between ducts and the building exterior when ducts are part of a building assem

☐ 8. Mechanical fasteners and sealants used to connect ducts and air distribution equipment

10. Hot water pipe insulation: 1.5 in, for pipes <=1.5 in, and 2 in, for pipes >1.5 in.

☐ 13. Lavatory faucet outlet temperatures in public restrooms limited to 110°F (43°C)

Exception: Systems with a design outdoor airflow less than 1200 cfm.

Exception: Heating systems in climates with less than 3600 HDD.

☐ 18. Motorized, automatic shutoff dampers required on exhaust and outdoor air supply openings

Mechanical Code prohibits the use of energy recovery systems.

Exception: Systems serving spaces that are heated and not cooled to less than 60°F.

□ 14. Thermostatic controls have 5°F deadband Exception: Thermostats requiring manual changeover between heating and cooling

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 55 and 105°F.

1. Operation and maintenance manual provided to building owner

☐ 12. Piping, insulated to 1/2 in. if nomina! diameter of pipe is <1.5 in.;

approved by the authority having jurisdiction. ☐ 15. Balancing devices provided in accordance with IMC (2006) 603.17

Exception: Ducts with interior and exterior temperature difference not exceeding 15°F

hilled water/refrigerant/brine pipe insulation; 1.5 in. for pipes <=1.5 in. and 1.5 in. for pipes >1.5 in.

COMcheck Software Version 3.8.2 **Mechanical Requirements** Description

2009 IECC

The following list provides more detailed descriptions of the requirements in Section 4 of the Mechanical Compliance

Requirements Specific To: AH-A1

Requirements Specific To: AH-A2:

1. The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency: Split System: 13.0 SEER 2. The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be ssumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency 3. For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity. Requirements Specific To: AH-A1R:

1. The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency: Split System: 13.0 SEER 2. The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be assumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency. 3.For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity.

1. The specified heating and/or cooling equipment is covered by the ASHRÄE 90.1 Code and must meet the following minimum efficiency: Split System: 13.0 SEER 2. The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be assumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency. 3. For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity.

Requirements Specific To: AH-A2SP: 1. The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency: Split System: 13.0 SEER 2 The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be assumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency. 3. For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity.

Requirements Specific To: AH-A3: 1. The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency: Split System: 13.0 SEER 2. The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be sumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency

Requirements Specific To: AH-A4 1. The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency: Split System: 13.0 SEER 2. The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be assumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency.

3. For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity.

3. For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity Requirements Specific To: AH-B1A: 1. The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum

Project Title: Keller Springs Lofts Report date: 08/09/11 Data filename. Q \ Project2011\ 1130355-Keller Springs Lofts - Restart\ Reference\ ComCheck\ Building.cck Page:10

efficiency: Split System: 13.0 SEER 2. The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be assumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficien 3.For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity.

Requirements Specific To: AH-B1B: 1. The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency: Split System: 13.0 SEER 2.The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be assumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency. 3.For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity.

Requirements Specific To: AH-B2A: 1.The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency: Split System: 13.0 SEER 2.The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be assumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency.

3.For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity. Requirements Specific To: AH-B2B : 1. The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency: Split System: 13.0 SEER 2. The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be umed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency 3. For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity.

Requirements Specific To: AH-B3A: 1.The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency: Split System: 13.0 SEER 2.The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be assumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency.

3.For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity. Requirements Specific To: AH-B3B: 1.The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum 2 The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be

assumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency. 3.For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity. Requirements Specific To: AH-E1 : 1.The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency: Split System: 13.0 SEER

2.The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be issumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency. 3.For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity.

1. The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency: Split System: 13.0 SEER 2.The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be assumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency. 3. For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity. Requirements Specific To: AH-1:

1. The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency: Split System: 13.0 SEER 2.The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be assumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency. 3.For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity: Requirements Specific To: AH-2: 1. The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum

Project Title: Keller Springs Lofts Report date: 08/09/11 Data filename: Q:\ Project2011\ 1130355-Keller Springs Lofts - Restart\ Reference\ ComCheck\ Building.cck Page 11

efficiency: Split System: 13:0 SEER 2. The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be assumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency

3.For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity. 1.The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency: Split System: 13:0 SEER

2.The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be assumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency. 3.For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity. Requirements Specific To: AH-5:

 The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency:
 Split System: 13.0 SEER 2. The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be sumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficiency 3.For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity.

Requirements Specific To: AH-3: 1. The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency: Split System: 13.0 SEER 2.The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be ssumed to meet or exceed ASHRAE 90.1 Code requirements for equipment efficienc 3.For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity.

1.The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency: Central Furnace (Gas): 80.0 % Et (or 78% AFUE) 2.The specified heating and/or cooling equipment is covered by the ASHRAE 90.1 Code and must meet the following minimum efficiency: Rooftop Package Unit 11.0 EER Rooftop Package Unit: 11.0 EER 3. Cooling system provides a means to relieve excess outdoor air during economizer operation to prevent overpressurizing the 4,An integrated air economizer is required for individual cooling systems over 54 kBtu/h in the selected project location and allows simultaneous operation of outdoor-air and mechanical cooling. 5.For cooling systems <= 240 kBtu/h, maximum hot gas bypass capacity must be no more than 50% total cooling capacity.

Requirements Specific To: Water Heater 1: 1. Service water heating equipment used solely for heating potable water, pool heaters, and not water storage tanks must meet the following miniumum efficiency: Electric Water Heater efficiency: 0.9 EF (267 SL, Btu/h (if > 12 kW)) 2.Insulation must be provided for the first 8 ft of outlet piping for a constant temperature nonrecirculating storage system and for the inlet pipe between the storage tank and a heat trap in a storage system. 3. Temperature controls must be provided that allow for storage temperature adjustment from 120°F or lower to a maximum temperature compatible with the intended use except when the manufacturer's installation instructions specify a higher minimum thermostat setting to minimize condensation and resulting corrosion. Documentation of the installation instructions must be provided to be exempted from this requirement. 4. Heat traps must be provided on inlet and outlet vertical pipe risers serving storage water heaters and storage tanks not having integral heat traps and serving a nonrecirculating system.

Heat traps must be installed as close as practical to the storage tank. 'Acceptable heat traps are either) a device specifically designed for the purpose or

b) an arrangement of tubing that forms a loop of 360°F, or c) piping that from the point of connection to the water heater (inlet or outlet) includes a length of piping directed downwards efore connection to the vertical piping of the supply water or hot water distribution system Requirements Specific To: Water Heater 2:

1. Service water heating equipment used solely for heating potable water, pool heaters, and hot water storage tanks must meet the following miniumum efficiency. Electric Water Heater efficiency: 0.9 EF (211 SL, Btu/h (if > 12 kW)) 2. Insulation must be provided for the first 8 ft of outlet piping for a constant temperature nonrecirculating storage system and for the inlet pipe between the storage tank and a heat trap in a storage system. 3.Temperature controls must be provided that allow for storage temperature adjustment from 120°F or lower to a maximum temperature compatible with the intended use except when the manufacturer's installation instructions specify a higher minimum thermostats setting to minimize condensation and resulting corrosion. Documentation of the installation instructions must be provided to be exempted from this requirement.

Project Title: Keller Springs Lofts Report date: 08/09/11 Data filename: Q:\ Project2011\ 1130355-Keiler Springs Lofts - Restart\ Reference\ ComCheck\ Building.cck Page 12

4. Heat traps must be provided on inlet and outlet vertical pipe risers serving storage water heaters and storage tanks not having integral heat traps and serving a nonrecirculating system. Heat traps must be installed as close as practical to the storage tank. Acceptable heat traps are either a) a device specifically designed for the purpose or
 b) an arrangement of tubing that forms a loop of 360°F, or

c) piping that from the point of connection to the water heater (inlet or outlet) includes a length of piping directed downwards before connection to the vertical piping of the supply water or hot water distribution system.

Generic Requirements: Must be met by all systems to which the requirement is applicable: 1.All equipment and systèms must be sized to be no greater than needed to meet calculated loads. A single piece of

equipment providing both heating and cooling must satisfy this provision for one function with the capacity for the other function as small as possible, within available equipment options. Exception: The equipment and/or system capacity may be greater than calculated loads for standby purposes. Standby equipment must be automatically controlled to be off when the primary equipment and/or system is operating.

Exception: Multiple units of the same equipment type whose combined capacities exceed the calculated load are

allowed if they are provided with controls to sequence operation of the units as the load increases or decreases 2.Each heating or cooling system serving a single zone must have its own temperature control device. 3.Each humidification system must have its own humidity control device. 4.Design heating and cooling loads for the building must be determined using procedures in the ASHRAE Handbook of undamentals or an approved equivalent calculation procedure. 5. The system or zone control must be a programmable thermostat or other automatic control meeting the following criteria: a) capable of setting back temperature to 55°F during heating and setting up to 85°F during cooling. b) capable of automatically setting back or shutting down systems during unoccupied hours using 7 different day schedules,

d) have a battery back-up capable of maintaining programmed settings for at least 10 hours without power. Exception: A setback or shutoff control is not required on thermostats that control systems serving areas that operate Exception: A setback or shutoff control is not required on systems with total energy demand of 2 kW (6,826 Btu/h) or 6.The system must supply outside ventilation air as required by Chapter 4 of the International Mechanical Code. If the ventilation system is designed to supply outdoor-air quantities exceeding minimum required levels, the system must be capable of reducing outdoor-air flow to the minimum required levels.

7. Air ducts must be insulated to the following levels: a) Supply and return air ducts for conditioned air located in unconditioned spaces (spaces neither heated nor cooled) must be insulated with a minimum of R-5. Unconditioned spaces include attics, crawl spaces, unheated basements, and unheate garages. b) Supply and return air ducts and plenums must be insulated to a minimum of R-8 when located outside the building. c) When ducts are located within exterior components (e.g., floors or roofs), minimum R-8 insulation is required only between

the duct and the building exterior.

Exception: Duct insulation is not required on ducts located within equipment. Exception: Duct insulation is not required when the design temperature difference between the interior and exterior of the duct or plenum does not exceed 15°F. 8: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. 9.All joints, longitudinal and transverse seams, and connections in ductwork must be securely sealed using weldments;

listed and labeled in accordance with UL 181A and shall be marked '181A-P' for pressure sensitive tape, '181A-M' for mastic or '181A-H' for heat-sensitive tape. Tapes and mastics used to seal flexible air ducts and flexible air connectors shall comply with UL 181B and shall be marked '181B-FX' for pressure-sensitive tape or '181B-M' for mastic. Unlisted duct tape is not permitted as a sealant on any metal ducts. 10. All pipes serving space-conditioning systems must be insulated as follows:

Hot water piping for heating systems: 1 1/2 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 1/2 in. insulation for pipes <=1 1/2-in. nominal diameter 1 1/2 in. insulation for pipes >1 1/2-in. nominal diamete

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 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: Piping within room fan-coil (with AHRI440 rating) and unit ventilators (with AHRI840 rating).

mechanical fasteners with seals, gaskets, or mastics; mesh and mastic sealing systems; or tapes. Tapes and mastics must be

roject. Title: Keller Springs Lofts Report date: 08/09/11 Data filename: Q:\ Project2011\ 1130355-Keller Springs Lofts - Restart\ Reference\ ComCheck\ Building.cck Page 13

Exception: Pipe insulation is not required for runout piping not exceeding 4 ft in length and 1 in. in diameter between 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 actions b) equipment operation and maintenance manuals

by equipment operation and maintenance rand callibration information, including wiring diagrams, schematics, and control sequence descriptions; desired or field-determined set points must be permanently recorded on control drawings, at control devices, or, for digital control systems, in programming comments d) complete narrative of how each system is intended to operate.

12. Service hot water piping, where required, must be insulated to 1/2 in. if pipe less than 1.5 in. nominal diameter. Larger pipe must be insulated to 1 in. Pipe insulation will have a conductivity of less than 0.28 Btu.in/(h-ft2-°F). 13.Temperature controlling means must be provided to limit the maximum temperature of water delivered from lavatory faucets in public facility restrooms to 110°F. 14.Thermostats controlling both heating and cooling must be capable of maintaining a 5°F deadband (a range of temperature where no heating or cooling is provided).

Exception: Deadband capability is not required if the thermostat does not have automatic changeover capability 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. 15.Balancing devices provided in accordance with IMC (2006) 603.17. 16 Demand control ventilation (DCV) required for high design occupancy areas (>40 person/1000 ft2 in spaces >500 ft2) and

served by systems with any one of 1) an air-side economizer, 2) automatic modulating control of the outdoor air damper, or 3) a design outdoor airflow greater than 3000 cfm.

Exception: Systems with heat recovery.

Exception: Multiple-zone systems without DDC of individual zones communicating with a central control panel. Exception: Systems with a design outdoor airflow less than 1200 cfm.

Exception: Spaces where the supply airflow rate minus any makeup or outgoing transfer air requirement is less than

17.Total cooling capacity without economizers must be less than 480 kBtu/h. This project lists 374082 kBtu/h capacity without 18.Outdoor air supply and exhaust systems must have motorized dampers that automatically shut when the systems or spaces served are not in use. Dampers must be capable of automatically shutting off during preoccupancy building warm-up, cool-down, and setback, except when ventilation reduces energy costs (e.g., night purge) or when ventilation must be supplied to meet code requirements. Both outdoor air supply and exhaust air dampers must have a maximum leakage rate of 3 cfm/ft2

at 1.0 in w.g. when tested in accordance with AMCA Standard 500.

Exception: Gravity (non-motorized) dampers are acceptable in buildings less than three stories in height.

Exception: Systems with a design outside air intake or exhaust capacity of 300 cfm (140 L/s) or less that are equipped with motor operated dampers that open and close when the unit is energized and de-energized, respectively. 19.All freeze protection systems, including self-regulating heat tracing, must include automatic controls capable of shutting off the systems when outside air temperatures are above 40°F or when the conditions of the protected fluid will prevent freezing Snow- and ice-melting systems must include automatic controls capable of shutting off the systems when the pavement emperature is above 50°F and no precipitation is falling, and an automatic or manual control that will allow shutoff when the outdoor temperature is above 40°F.

20.Individual fan systems with a design supply air capacity of 5000 cfm or greater and minimum outside air supply of 70 become the systems with a design supply at a capacity of your percent or greater and minute outside an apply of your percent or greater of the supply air capacity must have an energy recovery system with at least a 50 percent effectiveness. Where cooling with outdoor air is required there is a means to bypass or control the energy recovery system to permit cooling.

Exception: Hazardous exhaust systems, commercial kitchen and clothes dryer exhaust systems that the International Mechanical Code prohibits the use of energy recovery systems.

Exception: Systems serving spaces that are heated and not cooled to less than 60°F.

Exception: Where more than 60 percent of the outdoor heating energy is provided from site-recovered or site solar

energy.
Exception: Heating systems in climates with less than 3600 HDD. Exception: Cooling systems in climates with a 1 percent cooling design wet-bulb temperature less than 64°F. Exception: Systems requiring dehumidification that employ energy recovery in series with the cooling coil. Exception: Laboratory fume hood exhaust systems that have either a variable air volume system capable of reducing exhaust and makeup air volume to 50 percent or less of design values or, a separate make up air supply meeting the following makeup air requirements: a) at least 75 percent of exhaust flow rate, b) heated to no more than 2°F below room setpoint temperature, c) cooled to no lower than 3°F above room setpoint temperature, d) no humidification added. e) no simultaneous heating and cooling.

Project Title: Keller Springs Lofts Report date: 08/09/11 lename: Q:\ Project2011\ 1130355-Keller Springs Lofts - Restart\ Reference\ ComCheck\ Building.cck Page 14

in accordance with the manufacturer's installation instructions. \square 2. Windows, doors, and skylights certified as meeting leakage requirements. ☐ 3. Component R-values & U-factors labeled as certified. II 4. No roof insulation is installed on a suspended ceiling with removable ceiling panels. ☐ 5. 'Other' components have supporting documentation for proposed U-Factors. D 6. insulation installed according to manufacturer's instructions, in substantial contact with the surface being insulated, and in a manner that achieves the rated R-value without compressing the insulation. D.7. Stair, elevator shaft vents, and other outdoor air intake and exhaust openings in the building envelope are equipped with 8. Cargo doors and loading dock doors are weather sealed. □ 9, Recessed lighting fixtures installed in the building envelope are Type IC rated as meeting ASTM E283, are sealed with

Section 4: Compliance Statement

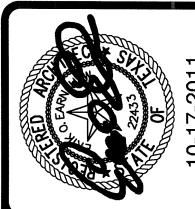
Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed envelope system has been designed to meet the 2009 ECC requirements in COMoheck Version 3.8.2 and to comply with the mandaryry requirements in the Requirements Chepkins,

Name - Title

Date

Date

roject Title: Keller Springs Lofts Report date: 08/09/11 cata filename: Q:\ Project2011\ 1190355-Keller Springs Lofts - Restart\ Reference\ ComCheck\ Building.cck Page 4



REVISIONS



Dallas. TX 75204 214.520.8878 bgoarchitects.com DATE

08-05-20°

PROJECT

SHEET NUMBER

COM. CHECK