

**ADDENDUM 1**

DLR GROUP  
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March 18, 2016

NOTICE TO BIDDERS: Amend the Project Manuals and Drawings to the above referenced project as follows:

**PROJECT MANUAL**

SEE APPENDIX 1 FOR ADDED OR REPLACED SPEC SECTIONS AS REFERENCED BELOW.

ITEM NO. 1 SECTION 024119 SELECTIVE DEMOLITION

- A. 3.5, C. Remove "Work in Historic Areas" section as there are no historic areas in this project.

ITEM NO. 2 SECTION 098433 SOUND-ABSORBING WALL UNITS

- A. 1.4, B. Remove this portion. WSSP is not required for this project.  
B. 2.1, A. Remove this portion. There are no source limitations or Section 098436.  
C. 2.3, A. Remove reference to three SAW-1 types. There is only one Sound-Absorbing Wall Panel type within this project.

ITEM NO. 3 SECTION 101423 PANEL SIGNAGE

- A. Add this specification in its entirety. See attached.

ITEM NO. 4 SECTION 116623 ATHLETIC EQUIPMENT

- A. 2.1, A. Remove "~~Backstops shall be ceiling mounted, folding, with electric operators and superstructure, and shall be of the following type and manufacturer:~~" and replace with "*Two backstops on west wall above bleachers shall be ceiling mounted, folding, with electric operators and superstructure, and shall be of the following type and manufacturer:*"  
B. 2.1, A, 1, a. Remove "~~No. TF-20 Forward Fold with...~~" and replace with "*TBS-26-B Side Folding with...*".  
C. 2.1, A, 2: Remove "~~Provide one for each Main Court backboard unit~~" and replace with "*Provide one for each of the two west backboard units above bleachers.*"  
D. 2.1: ADD the following section after section 2.1, A:  
*B. Four backstops, two on Main Court and two on east wall, shall be wall mounted, side folding, with electric operators and superstructure, and shall be of the following type and manufacturer:*  
*1. Backstops: Draper Inc.*  
*a. DGW-E wall-mounted, side-folding, electrically-operated backstop with A0136 glass banks with No. 5032 bolt-on safety padding, and A0581 Tube Tie Breakaway goals complete with mounting hardware and nylon anti-whip net.*

ITEM NO. 5 SECTION 232923 VARIABLE FREQUENCY MOTOR CONTROLLERS

- A. Add this specification in its entirety. See attached.

## **DRAWINGS**

SEE APPENDIX 2 FOR DRAWING SKETCHES AS REFERENCED BELOW.

### **ARCHITECTURAL**

ITEM NO. A1 SHEET A5.1 – EXTERIOR ELEVATIONS

- A. Keynote 3: Revise to read as follows: “*Main Entry Text to be Dimensional Letter Signage. See Spec Section 101419.*”

### **MECHANICAL**

ITEM NO. M1 SHEET M1.2 – MECHANICAL PLAN – AREA B – BASE BID

- B. Add return grilles and tags per attached sketch SK-M1.  
C. Add IH-2 and associated ductwork per attached sketch SK-M1. This equipment and duct is required as part of base bid and alternate bid.  
D. Add tag VAV-2-4 to VAV terminal unit just north of 109 Snack Bar.

ITEM NO. M2 SHEET M2.2 ALT – MECHANICAL PIPING PLAN – AREA B – ALT BID

- A. Add tag to device located between VAV-2-2 and VAV-2-3 on 1-1/4” HWS. Tag to read “PRESSURE DIFFERENTIAL SENSOR.”

ITEM NO. M3 SHEET M4.1 – MECHANICAL CONTROLS

- B. Detail 1/M4.1 SINGLE ZONE VAV AHU SEQUENCE OF OPERATIONS: Delete Building Pressure Differential schematic as shown in attached sketch SK-M2.  
C. ADD Detail 2 SPLIT SYSTEM A/C CONTROL per attached sketch SK-M3.  
D. ADD GENERAL NOTES per attached sketch SK-M3.  
E. ADD DOMESTIC HOT WATER HEATER SEQUENCE OF OPERATIONS per attached sketch SK-M4.  
F. ADD VAV TERMINAL UNIT SEQUENCE OF OPERATIONS per attached sketch SK-M4.

ITEM NO. M4 SHEET M4.2 – MECHANICAL CONTROLS

- G. Detail 1/M4.2 SCHEDULED EXHAUST FAN SEQUENCE OF OPERATIONS: Delete Intake Air Damper per attached sketch SK-M5.  
H. ADD Detail 4 HIGH VOLUME CEILING FAN SEQUENCE OF OPERATIONS AND SCHEMATIC per attached sketch SK-M6.  
I. ADD Detail 5 HEATING HOT WATER SYSTEM SEQUENCE OF OPERATIONS & SCHEMATIC per attached sketch SK-M6.  
J. ADD the following GENERAL NOTES:

1. FOR ADDITIONAL PIPING REQUIREMENTS SEE MECHANICAL DETAILS, M5.1.

2. UNLESS EXPLICITLY INDICATED IN DIVISION 26 CONTRACT DOCUMENTS, ALL ELECTRICAL WIRING, RACEWAY, ENCLOSURES, OVERCURRENT PROTECTION, MISC. COMPONENTS AND CONNECTIONS NECESSARY FOR A COMPLETE AND OPERATING CONTROLS SYSTEM SHALL BE PROVIDED AS PART OF SPECIFICATION SECTION 230900. CONVENIENCE OUTLETS INDICATED IN DIVISION 26 CONTRACT DOCUMENTS SHALL NOT BE USED AS A POWER SOURCE. ALL WORK SHALL BE IN ACCORDANCE WITH DIVISION 26 REQUIREMENTS.

3. GATEWAYS SHALL BE PROVIDED AS PART OF SPECIFICATION SECTION 230900 WORK WHERE REQUIRED TO INTERFACE BETWEEN FACTORY MOUNTED UNIT CONTROLS AND CENTRAL CONTROL SYSTEM. IF INDICATED DATA IS NOT AVAILABLE VIA UNIT MFR CONTROL SYSTEM, PROVIDE DATA VIA HARDWIRE CONNECTION.

ITEM NO. M5 SHEET M6.1 – MECHANICAL SCHEDULES

- K. VAV TERMINAL UNIT SCHEDULE – ALT. BID, VAV-2-5: Change Unit to AHU-2 in lieu of AHU-4.
- L. FAN SCHEDULE: EF-2: Change Basis of Design to GC-168.
- M. ROOF HOOD SCHEDULE: Add IH-2 with the following features: MARK: IH-2; SERVES: EXISTING AHU; OVERALL HOOD SIZE: 34x36x19; THROAT SIZE: 24x24; BASIS OF DESIGN: GREENHECK FGI; NOTES: 1.

**PLUMBING**

ITEM NO. P1 SHEET P0.2 – PLUMBING UNDERFLOOR PLAN – AREA B – BASE

- A. ADD storm piping per attached sketch SK-P1.

ITEM NO. P2 SHEET P1.2ALT – PLUMBING PLAN – AREA B – ALTERNATE BID

- N. Pipe sizing, equipment tags and installation notes North of Grid 'C': Reference P1.2 Plumbing Plan – Area B – Based Bid for applicable notes in this area.

ITEM NO. P3 SHEET P2.1 – ENLARGED PLUMBING PLANS

- O. Detail 1/P2.1 ENLARGED PLAN – RESTROOM 107: Add ORD-1/RD-1 and associated piping as shown in attached sketch SK-p2.

**ELECTRICAL**

ITEM NO. E1 SHEET E2.2 – POWER & SPECIAL SYSTEMS PLAN – AREA B

- P. Add power for trap primer TP-1 in Storage 101
- Q. Add power for trap primer TP-1 in Sprinkler Riser 103A

ITEM NO. E2 SHEET E2.2ALT – POWER & SPECIAL SYSTEMS PLAN – AREA B

- R. Add rough-in location for card reader outside of Admin Reception 300.

**RESPONSE TO BIDDER'S QUESTIONS**

*SEE APPENDIX 3 FOR RESPONSES TO BIDDER'S QUESTIONS.*

**APPROVED SUBSTITUTIONS**

*SEE APPENDIX 4 FOR APPROVED SUBSTITUTIONS LIST.*

**PRE-BID WALK THROUGH SIGN-IN SHEETS**

*SEE APPENDIX 5 FOR PRE-BID WALK THROUGH SIGN-IN SHEETS.*

**END OF ADDENDUM 1**

ELMIRA HIGH SCHOOL  
FERN RIDGE SCHOOL DISTRICT  
ELMIRA, OREGON

DLR GROUP PROJECT NO. 74-13107-40  
ADDENDUM 1  
MARCH 18, 2016

**ADDENDUM 1 APPENDIX 1**

PROJECT MANUAL SECTIONS

## SECTION 101423 - PANEL SIGNAGE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Room-identification signs.

#### 1.3 DEFINITIONS

- A. Accessible: In accordance with the accessibility standard.

#### 1.4 COORDINATION

- A. Furnish templates for placement of sign-anchorage devices embedded in permanent construction by other installers.
- B. Furnish templates for placement of electrical service embedded in permanent construction by other installers.

#### 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For panel signs.
  - 1. Include fabrication and installation details and attachments to other work.
  - 2. Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.
  - 3. Show message list, typestyles, graphic elements, including raised characters and Braille, and layout for each sign at least half size.
- C. Samples for Initial Selection: For each type of sign assembly, exposed component, and exposed finish.
  - 1. Include representative Samples of available typestyles and graphic symbols.

- D. Sign Schedule: Use same designations specified or indicated on Drawings or in a sign schedule.

## 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For signs to include in maintenance manuals.

## 1.7 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

## 1.8 FIELD CONDITIONS

- A. Field Measurements: Verify locations and relationship to other construction by field measurements before fabrication, and indicate measurements on Shop Drawings.

## 1.9 WARRANTY

- A. Warranty Period: One year from date of Substantial Completion.

# PART 2 - PRODUCTS

## 2.1 PANEL SIGNS, GENERAL

## 2.2 PERFORMANCE REQUIREMENTS

- A. Accessibility Standard: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities and ICC A117.1 for signs.

## 2.3 SIGNS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Basis of Design: ASI InTouch Photopolymer ADA Ready.
  - 2. Vomar Products, Inc.
  - 3. Signs Now.
- B. Room-Identification Sign: Sign with smooth, uniform surfaces; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:

1. Laminated-Sheet Sign: face sheet with raised graphics laminated to backing sheet to produce composite sheet.
  - a. Composite-Sheet Thickness: Manufacturer's standard for size of sign.
  - b. Color(s): As selected by Architect from manufacturer's full range.
  - c. Edge Condition: Beveled.
  - d. Corner Condition in Elevation: Square.
  - e. Size: 6"w x 7-3/4"h nominally.
2. Mounting: Surface mounted to wall with two-face tape.
3. Text and Typeface: Accessible raised characters and Braille, Times Roman. Finish raised characters to contrast with background color, and finish Braille to match background color

## 2.4 PANEL-SIGN MATERIALS

- A. Acrylic Sheet: ASTM D 4802, category as standard with manufacturer for each sign, Type UVF (UV filtering).
- B. Polycarbonate Sheet: ASTM C 1349, Appendix X1, Type II (coated, mar-resistant, UV-stabilized polycarbonate), with coating on both sides.
- C. Fiberglass Sheet: Multiple laminations of glass-fiber-reinforced polyester resin with UV-light stable, colorfast, nonfading, weather- and stain-resistant, colored polyester gel coat, and with manufacturer's standard finish.
- D. PVC Sheet: Manufacturer's standard, UV-light stable, PVC plastic.
- E. Plastic-Laminate Sheet: NEMA LD 3, general-purpose HGS grade, 0.048-inch (1.2-mm) nominal thickness.
- F. Vinyl Film: UV-resistant vinyl film of nominal thickness indicated, with pressure-sensitive, permanent adhesive on back; die cut to form characters or images as indicated and suitable for exterior applications.
- G. Paints and Coatings for Sheet Materials: Inks, dyes, and paints that are recommended by manufacturer for optimum adherence to surface and are UV and water resistant for colors and exposure indicated.

## 2.5 ACCESSORIES

- A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signage, noncorrosive and compatible with each material joined, and complying with the following:
  1. Use concealed fasteners and anchors.
- B. Two-Face Tape: Manufacturer's standard high-bond, foam-core tape, 0.045 inch (1.14 mm) thick, with adhesive on both sides.

## 2.6 FABRICATION

- A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.
  - 1. Preassemble signs and assemblies in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.
  - 2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
  - 3. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
- B. Surface-Engraved Graphics: Machine engrave characters and other graphic devices into panel surface indicated to produce precisely formed copy, incised to uniform depth.
  - 1. Engraved Plastic Laminate: Engrave through exposed face ply of plastic-laminate sheet to expose contrasting core ply.

## 2.7 GENERAL FINISH REQUIREMENTS

- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- C. Directional Finishes: Run grain with long dimension of each piece and perpendicular to long dimension of finished trim or border surface unless otherwise indicated.
- D. Organic, Anodic, and Chemically Produced Finishes: Apply to formed metal after fabrication but before applying contrasting polished finishes on raised features unless otherwise indicated.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of signage work.
- B. Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.
- C. Verify that anchor inserts are correctly sized and located to accommodate signs.



- D. Verify that electrical service is correctly sized and located to accommodate signs.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.
  - 1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
  - 2. Install signs so they do not protrude or obstruct according to the accessibility standard.
  - 3. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.
  - 4. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.
- B. Room-Identification Signs and Other Accessible Signage: Install in locations on walls as indicated in schedule below and according to accessibility standard.
- C. Mounting Methods:
  - 1. Two-Face Tape: Clean bond-breaking materials from substrate surface and remove loose debris. Apply tape strips symmetrically to back of sign and of suitable quantity to support weight of sign without slippage. Keep strips away from edges to prevent visibility at sign edges. Place sign in position, and push to engage tape adhesive.
  - 2. Shim-Plate Mounting: Provide 1/8-inch- (3-mm-) thick, concealed aluminum shim plates with predrilled and countersunk holes, at locations indicated, and where other direct mounting methods are impractical. Attach plate with fasteners and anchors suitable for secure attachment to substrate. Attach signs to plate using method specified above.
  - 3. Concealed fasteners: Flat head stainless steel screws can be used to mount the large frame signs by lifting the clear acrylic and fastening through the masonite backer and then re-inserting the acrylic. Use no less than 2 screws.
- D. Signs Mounted on Glass: Provide opaque sheet matching sign material and finish onto opposite side of glass to conceal back of sign.

### 3.3 SCHEDULE

- A. Laminate Sheet Sign:
  - 1. Every interior door (except those covered in paragraph B below) shall receive one of these signs on the wall beside it (strike side). Each shall have a 3 digit number with a room name below and the Braille equivalent below that. The schedule shall be generated between the Architect and the Owner. For purposes of bidding, assume the room name is the title of the room on the contract documents.

- a. At all restrooms, the sign shall also have a graphic depicting male or female or unisex.
- b. There will be 6 additional signs beyond what is described above:
  - 1) Two (2) gang-style restrooms that have no entry doors
  - 2) Four (4) occupant load signs (2 science, tech lab, and media center).

#### 3.4 ADJUSTING AND CLEANING

- A. Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.
- B. Remove temporary protective coverings and strippable films as signs are installed.
- C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION 101423

## SECTION 232923 - VARIABLE-FREQUENCY MOTOR CONTROLLERS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes separately enclosed, pre-assembled, combination VFCs, rated 600 V and less, for speed control of three-phase, squirrel-cage induction motors.
- B. Related Sections:
  - 1. Division 23 Section "Instrumentation and Control for HVAC".
  - 2. Division 23 Section "Hydronic Pumps".
- C. VFCs shall be of same model line by a single manufacturer and shall be furnished and installed as part of Division 23 Section "Instrumentation and Control for HVAC" except for VFCs provided as part of Division 23 Section "Packaged, Rooftop Heating and Ventilating Units." Installation shall include connection between motor and controller unless explicitly indicated otherwise.

#### 1.3 DEFINITIONS

- A. BAS: Building automation system.
- B. CPT: Control power transformer.
- C. EMI: Electromagnetic interference.
- D. IGBT: Insulated-gate bipolar transistor.
- E. LAN: Local area network.
- F. LED: Light-emitting diode.
- G. MCP: Motor-circuit protector.
- H. NC: Normally closed.
- I. NO: Normally open.
- J. OCPD: Overcurrent protective device.

- K. PID: Control action, proportional plus integral plus derivative.
- L. PWM: Pulse-width modulated.
- M. RFI: Radio-frequency interference.
- N. VFC: Variable-frequency motor controller.
- O. VFD: Variable-frequency drive, alternative description of VFC.

#### 1.4 SUBMITTALS

- A. Product Data: For each type and rating of VFC indicated.
- B. Shop Drawings: For each VFC indicated. Include dimensioned plans, elevations, and sections; and conduit entry locations and sizes, mounting arrangements, and details, including required clearances and service space around equipment.
  - 1. Show tabulations of installed devices, equipment features, and ratings.
  - 2. Schematic and Connection Wiring Diagrams: For power, signal, and control wiring.
- C. Coordination Drawings: Floor plans, drawn to scale, showing dimensioned layout, required working clearances, and required area above and around VFCs. Show VFC layout and relationships between electrical components and adjacent structural and mechanical elements. Show support locations, type of support, and weight on each support. Indicate field measurements.
- D. Product certificates.
- E. Operation and maintenance data.

#### 1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.

#### 1.6 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace VFCs that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: Five years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURED UNITS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. ABB.
  - 2. Cerrus Industrial
  - 3. Danfoss Inc.; Danfoss Drives Div.
  - 4. Siemens Energy & Automation, Inc.
  - 5. Square D; a brand of Schneider Electric.
- B. General Requirements for VFCs: Comply with NEMA ICS 7, NEMA ICS 61800-2, and UL 508C.
- C. Application: Variable torque.
- D. VFC Description: Variable-frequency power converter (rectifier, dc bus, and IGBT, PWM inverter) factory packaged in an enclosure, with integral disconnecting means and overcurrent and overload protection; listed and labeled by an NRTL as a complete unit; arranged to provide self-protection, protection, and variable-speed control of one or more three-phase induction motors by adjusting output voltage and frequency.
  - 1. Units suitable for operation of NEMA MG 1, Design A and Design B motors as defined by NEMA MG 1, Section IV, Part 30, "Application Considerations for Constant Speed Motors Used on a Sinusoidal Bus with Harmonic Content and General Purpose Motors Used with Adjustable-Voltage or Adjustable-Frequency Controls or Both."
  - 2. Units suitable for operation of inverter-duty motors as defined by NEMA MG 1, Section IV, Part 31, "Definite-Purpose Inverter-Fed Polyphase Motors."
  - 3. Listed and labeled for integrated short-circuit current (withstand) rating by an NRTL acceptable to authorities having jurisdiction.
- E. Design and Rating: Match load type, such as fans, blowers, and pumps; and type of connection used between motor and load such as direct or through a power-transmission connection.
- F. Output Rating: Three-phase; 10 to 60 Hz, with voltage proportional to frequency throughout voltage range; maximum voltage equals input voltage.
- G. Unit Operating Requirements:
  - 1. Input AC Voltage Tolerance: Plus 10 and minus 10 percent of VFC input voltage rating.
  - 2. Input AC Voltage Unbalance: Not exceeding 3 percent.
  - 3. Input Frequency Tolerance: Plus or minus 3 percent of VFC frequency rating.
  - 4. Minimum Efficiency: 96 percent at 60 Hz, full load.
  - 5. Minimum Displacement Primary-Side Power Factor: 96 percent under any load or speed condition.
  - 6. Minimum Short-Circuit Current (Withstand) Rating: 10 kA.
  - 7. Ambient Temperature Rating: Not less than 14 deg F and not exceeding 104 deg F.

8. Ambient Storage Temperature Rating: Not less than minus 4 deg F and not exceeding 140 deg F.
  9. Humidity Rating: Less than 95 percent (noncondensing).
  10. Altitude Rating: Not exceeding 3300 feet.
  11. Vibration Withstand: Comply with IEC 60068-2-6.
  12. Overload Capability: 1.1 times the base load current for 60 seconds; minimum of 1.8 times the base load current for three seconds.
  13. Starting Torque: Minimum 100 percent of rated torque from 3 to 60 Hz.
  14. Speed Regulation: Plus or minus 5 percent.
  15. Output Carrier Frequency: Selectable; 0.5 to 15 kHz.
  16. Stop Modes: Programmable; includes fast, free-wheel, and dc injection braking.
- H. Inverter Logic: Microprocessor based, 16 or 32 bit, isolated from all power circuits.
- I. Isolated Control Interface: Allows VFCs to follow remote-control electrical signal over a minimum 40:1 speed range.
- J. Internal Adjustability Capabilities:
1. Minimum Speed: 5 to 25 percent of maximum rpm.
  2. Maximum Speed: 80 to 100 percent of maximum rpm.
  3. Acceleration: 0.1 to 999.9 seconds.
  4. Deceleration: 0.1 to 999.9 seconds.
  5. Current Limit: 30 to minimum of 150 percent of maximum rating.
- K. Self-Protection and Reliability Features:
1. Input transient protection by means of surge suppressors to provide three-phase protection against damage from supply voltage surges 10 percent or more above nominal line voltage.
  2. Loss of Input Signal Protection: Selectable response strategy, including speed default to a percent of the most recent speed, a preset speed, or stop; with alarm.
  3. Under- and overvoltage trips.
  4. Inverter overcurrent trips.
  5. VFC and Motor Overload/Overtemperature Protection: Microprocessor-based thermal protection system for monitoring VFCs and motor thermal characteristics, and for providing VFC overtemperature and motor overload alarm and trip; settings selectable via the keypad; NRTL approved.
  6. Critical frequency rejection, with three selectable, adjustable deadbands.
  7. Instantaneous line-to-line and line-to-ground overcurrent trips.
  8. Loss-of-phase protection.
  9. Reverse-phase protection.
  10. Short-circuit protection.
  11. Motor overtemperature fault.
- L. Automatic Reset/Restart: Attempt three restarts after drive fault or on return of power after an interruption and before shutting down for manual reset or fault correction; adjustable delay time between restart attempts.

- M. Bidirectional Autospeed Search: Capable of starting VFC into rotating loads spinning in either direction and returning motor to set speed in proper direction, without causing damage to drive, motor, or load.
- N. Torque Boost: Automatically varies starting and continuous torque to at least 1.5 times the minimum torque to ensure high-starting torque and increased torque at slow speeds.
- O. Motor Temperature Compensation at Slow Speeds: Adjustable current fall-back based on output frequency for temperature protection of self-cooled, fan-ventilated motors at slow speeds.
- P. Integral Input Disconnecting Means and OCPD: NEMA AB 1, instantaneous-trip circuit breaker or NEMA AB 1, molded-case switch, with power fuse block and current-limiting fuses or NEMA AB 1, thermal-magnetic circuit breaker or NEMA KS 1, nonfusible switch, with power fuse block and current-limiting fuses or NEMA KS 1, fusible switch with pad-lockable, door-mounted handle mechanism.
  - 1. Disconnect Rating: Not less than 115 percent of VFC input current rating.

## 2.2 CONTROLS AND INDICATION

- A. Status Lights: Door-mounted LED indicators displaying the following conditions:
  - 1. Power on.
  - 2. Run.
  - 3. Overvoltage.
  - 4. Line fault.
  - 5. Overcurrent.
  - 6. External fault.
- B. Panel-Mounted Operator Station: Manufacturer's standard front-accessible, sealed keypad and plain-English language digital display; allows complete programming, program copying, operating, monitoring, and diagnostic capability.
  - 1. Keypad: In addition to required programming and control keys, include keys for HAND, OFF, and AUTO modes.
  - 2. Security Access: Provide electronic security access to controls through identification and password with at least three levels of access: View only; view and operate; and view, operate, and service.
    - a. Control Authority: Supports at least four conditions: Off, local manual control at VFC, local automatic control at VFC, and automatic control through a remote source.
- C. Historical Logging Information and Displays:
  - 1. Running log of total power versus time.
  - 2. Total run time.
  - 3. Fault log, maintaining last four faults with time and date stamp for each.

- D. Indicating Devices: Digital display mounted flush in VFC door and connected to display VFC parameters including, but not limited to:
1. Output frequency (Hz).
  2. Motor speed (rpm).
  3. Motor status (running, stop, fault).
  4. Motor current (amperes).
  5. Motor torque (percent).
  6. Fault or alarming status (code).
  7. PID feedback signal (percent).
  8. DC-link voltage (V dc).
  9. Set point frequency (Hz).
  10. Motor output voltage (V ac).
- E. Control Signal Interfaces:
1. Electric Input Signal Interface:
    - a. A minimum of two programmable analog inputs: 0- to 10-V dc or 4- to 20-mA dc.
    - b. A minimum of six multifunction programmable digital inputs.
  2. Remote Signal Inputs: Capability to accept any of the following speed-setting input signals from the BAS or other control systems:
    - a. 0- to 10-V dc.
    - b. 4- to 20-mA dc.
    - c. Potentiometer using up/down digital inputs.
    - d. Fixed frequencies using digital inputs.
  3. Output Signal Interface: A minimum of one programmable analog output signal(s) (0- to 10-V dc or 4- to 20-mA dc, which can be configured for any of the following:
    - a. Output frequency (Hz).
    - b. Output current (load).
    - c. DC-link voltage (V dc).
    - d. Motor torque (percent).
    - e. Motor speed (rpm).
    - f. Set point frequency (Hz).
  4. Remote Indication Interface: A minimum of two programmable dry-circuit relay outputs (120-V ac, 1 A) for remote indication of the following:
    - a. Motor running.
    - b. Set point speed reached.
    - c. Fault and warning indication (overtemperature or overcurrent).
    - d. PID high- or low-speed limits reached.
- F. BAS Interface: Factory-installed hardware and software to enable the BAS to monitor, control, and display VFC status and alarms and energy usage. Allows VFC to be used with an external



system within a multidrop LAN configuration; settings retained within VFC's nonvolatile memory.

1. Network Communications Ports: Ethernet and RS-422/485.
2. Embedded BAS Protocols for Network Communications: ASHRAE 135 BACnet; protocols accessible via the communications ports.

## 2.3 ENCLOSURES

- A. VFC Enclosures: NEMA 250, to comply with environmental conditions at installed location.
  1. Dry and Clean Indoor Locations: Type 1.
  2. Other Wet or Damp Indoor Locations: Type 3R or Type 4, as required.
- B. Plenum Rating: UL 1995; NRTL certification label on enclosure, clearly identifying VFC as "Plenum Rated."

## 2.4 ACCESSORIES

- A. General Requirements for Control-Circuit and Pilot Devices: NEMA ICS 5; factory installed in VFC enclosure cover unless otherwise indicated.
  1. Push Buttons, Pilot Lights, and Selector Switches: Standard-duty type.
    - a. Push Buttons: Shielded types; momentary.
    - b. Pilot Lights: Incandescent or LED types; push to test.
    - c. Selector Switches: Rotary type.
- B. Control Relays: Auxiliary and solid-state time-delay relays.
- C. Monitoring Contacts: Auxiliary dry contacts for monitoring by EMCS as indicated.
- D. Phase-Failure, Phase-Reversal, and Undervoltage and Overvoltage Relays: Solid-state sensing circuit with isolated output contacts for hard-wired connections. Provide adjustable undervoltage, overvoltage, and time-delay settings.
  1. Current Transformers: Continuous current rating, basic impulse insulating level (BIL) rating, burden, and accuracy class suitable for connected circuitry. Comply with IEEE C57.13.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Wall-Mounting Controllers: Install VFCs on walls with tops at uniform height and with disconnect operating handles not higher than 79 inches above finished floor unless otherwise indicated, and by bolting units to wall or mounting on lightweight structural-steel channels

bolted to wall. For controllers not on walls, provide freestanding racks complying with Division 26 Section "Hangers and Supports for Electrical Systems."

- B. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.
- C. Install fuses in each fusible-switch VFC.
- D. Install fuses in control circuits if not factory installed. Comply with requirements in Division 26 Section "Fuses."
- E. Install heaters in thermal-overload relays. Select heaters based on actual nameplate full-load amperes after motors have been installed.
- F. Install, connect, and fuse thermal-protector monitoring relays furnished with motor-driven equipment.
- G. Comply with NECA 1.

### 3.2 IDENTIFICATION

- A. Identify VFCs, components, and control wiring. Comply with requirements for identification specified in Division 23 Section "Identification for HVAC piping & equipment."
  - 1. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.
  - 2. Label each VFC with engraved nameplate.
  - 3. Label each enclosure-mounted control and pilot device.

### 3.3 CONTROL WIRING INSTALLATION

- A. Install wiring between VFCs and remote devices. Comply with requirements in Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."
- B. Bundle, train, and support wiring in enclosures.
- C. Connect selector switches and other automatic control devices where applicable.
  - 1. Connect selector switches to bypass only those manual- and automatic control devices that have no safety functions when switches are in manual-control position.
  - 2. Connect selector switches with control circuit in both manual and automatic positions for safety-type control devices such as low- and high-pressure cutouts, high-temperature cutouts, and motor overload protectors.

### 3.4 ADJUSTING

- A. Program microprocessors for required operational sequences, status indications, alarms, event recording, and display features. Clear events memory after final acceptance testing and prior to Substantial Completion.
- B. Set field-adjustable switches, auxiliary relays, time-delay relays, timers, and overload-relay pickup and trip ranges.
- C. Adjust the trip settings of MCPs and thermal-magnetic circuit breakers with adjustable, instantaneous trip elements. Initially adjust to six times the motor nameplate full-load amperes and attempt to start motors several times, allowing for motor cool-down between starts. If tripping occurs on motor inrush, adjust settings in increments until motors start without tripping. Do not exceed eight times the motor full-load amperes (or 11 times for NEMA Premium Efficient motors if required). Where these maximum settings do not allow starting of a motor, notify Architect before increasing settings.

### 3.5 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, reprogram, and maintain VFCs.

END OF SECTION 232923

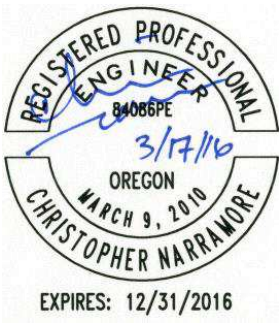
ELMIRA HIGH SCHOOL  
FERN RIDGE SCHOOL DISTRICT  
ELMIRA, OREGON

DLR GROUP PROJECT NO. 74-13107-40  
ADDENDUM 1  
MARCH 18, 2016

**ADDENDUM 1 APPENDIX 2**

DRAWING SKETCHES

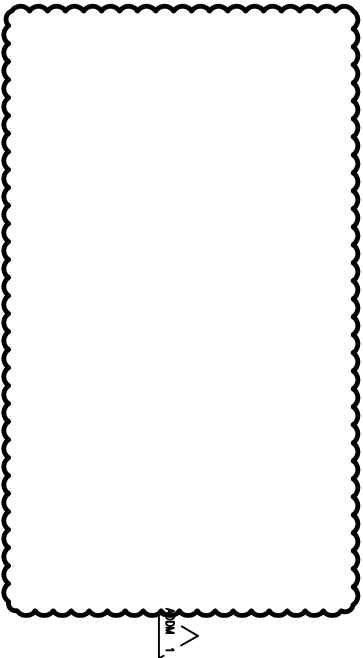
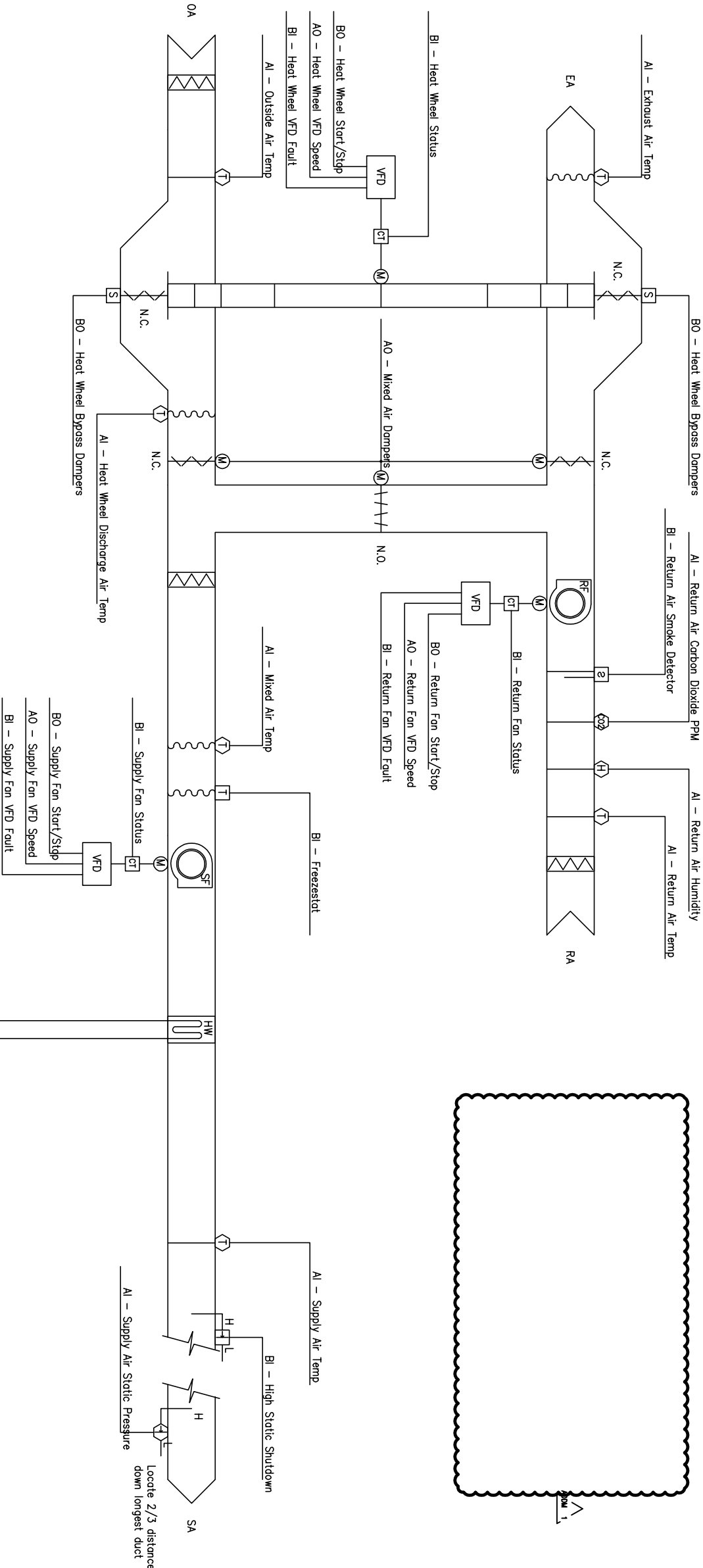


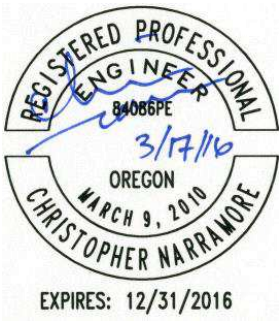


Mar 17 2016



Attachment No. SK-M2  
to ADD 1  
Dated: 03/08/2016





Mar 17 2016



Attachment No. SK-M3  
to ADD 1  
Dated: 03/18/2016

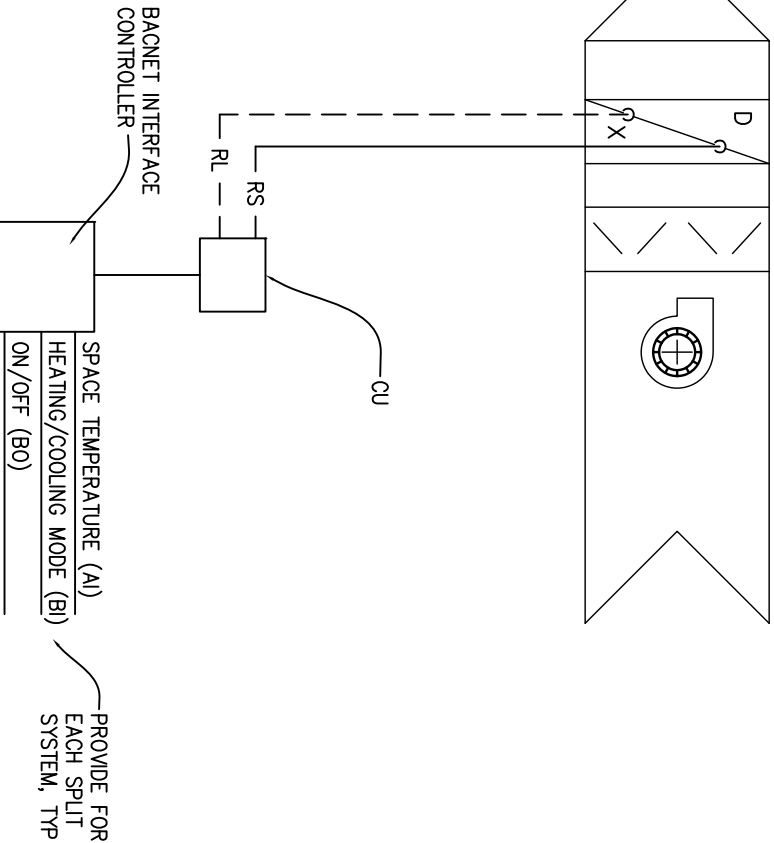
- GENERAL NOTES**
1. FOR ADDITIONAL PIPING REQUIREMENTS SEE MECHANICAL DETAILS, M5.1.
  2. UNLESS EXPLICITLY INDICATED IN DIVISION 26 CONTRACT DOCUMENTS, ALL ELECTRICAL WIRING, RACEWAY, ENCLOSURES, OVERCURRENT PROTECTION, MISCELLANEOUS COMPONENTS AND CONNECTIONS NECESSARY FOR A COMPLETE AND OPERATING CONTROLS SYSTEM SHALL BE PROVIDED AS PART OF SPECIFICATION SECTION 230900. CONVENIENCE OUTLETS INDICATED IN DIVISION 26 CONTRACT DOCUMENTS SHALL NOT BE USED AS A POWER SOURCE. ALL WORK SHALL BE IN ACCORDANCE WITH DIVISION 26 REQUIREMENTS.
  3. GATEWAYS SHALL BE PROVIDED AS PART OF SPECIFICATION SECTION 230900 WORK WHERE REQUIRED TO INTERFACE BETWEEN FACTORY MOUNTED UNIT CONTROLS AND CENTRAL CONTROL SYSTEM. IF INDICATED DATA IS NOT AVAILABLE VIA UNIT MFGR CONTROL SYSTEM, PROVIDE DATA VIA HARDWIRE CONNECTION.

ADD 1

ADD 1

SPACE TEMPERATURE (AI)

7-DAY PROGRAMMABLE  
THERMOSTAT BY CU MFGR



RUN CONDITIONS – AUTOMATIC OPERATION:  
THE UNIT SHALL RUN CONTINUOUSLY TO MAINTAIN THE FOLLOWING SETPOINTS:

- 75°F (ADJ.) COOLING SETPOINT

FAN:  
THE FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES.

COOLING – 1 COMPRESSOR STAGE:  
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND CYCLE THE COMPRESSOR TO MAINTAIN ITS SETPOINT. PROVIDE ANTI-SHORT CYCLE CONTROL.

## SPLIT SYSTEM A/C CONTROL

2  
M4.1  
NTS

TYPICAL FOR AC-1



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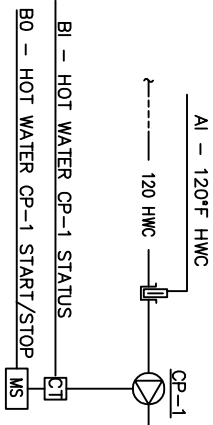
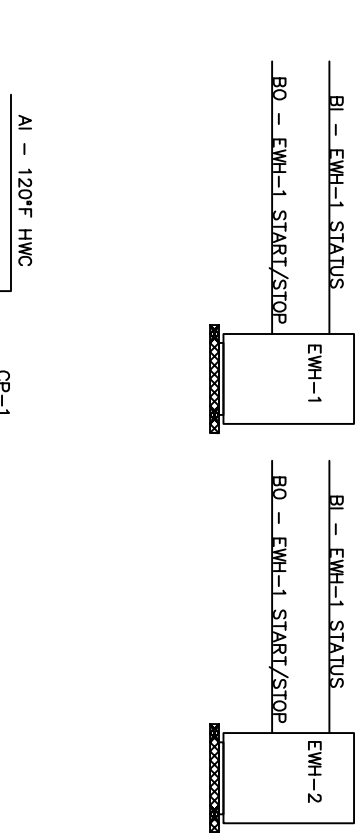
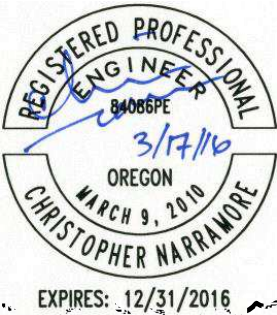
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**M4.1**

74-13107-40

03/03/2016

**MECHANICAL CONTROLS**  
**ELMIRA HIGH SCHOOL**  
**RENOVATIONS**



SEQUENCE: DOMESTIC HOT WATER (DHW) SYSTEMS:

EW-1 SHALL RUN ON INTERNAL CONTROLS TO MAINTAIN 120°F (ADJ.) BASED ON USER DEFINABLE SCHEDULE.

EW-2 SHALL RUN ON INTERNAL CONTROLS TO MAINTAIN 140°F (ADJ.) BASED ON USER DEFINABLE SCHEDULE.

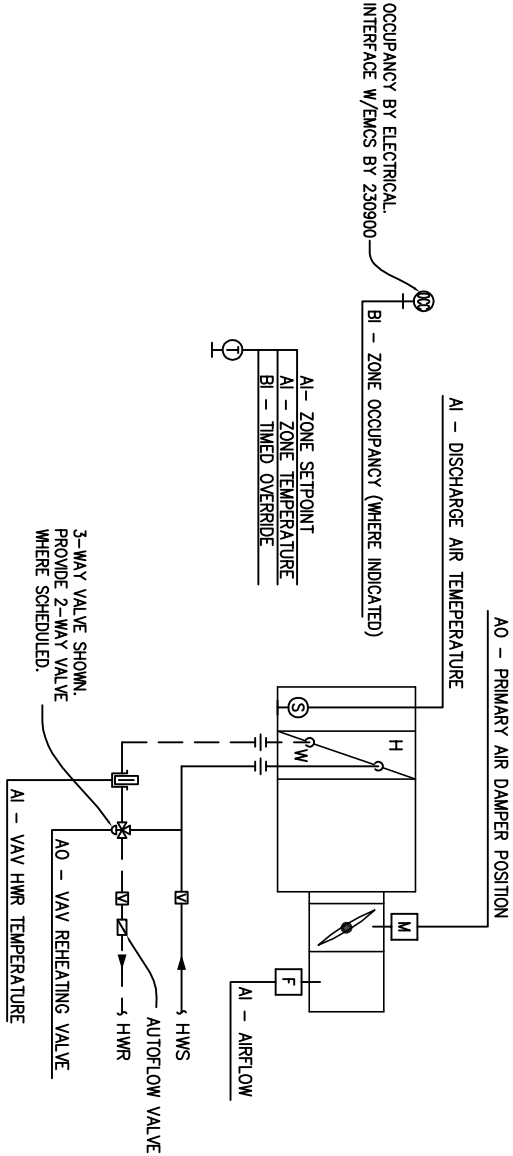
DOMESTIC HOT WATER CIRCULATING PUMP SHALL BE COMMANDED TO RUN BASED ON A USER DEFINABLE SCHEDULE AND SHALL CYCLE BASED ON DOMESTIC HOT WATER RECIRCULATION TEMPERATURE AS FOLLOWS. ALL TEMPERATURE SETTINGS SHALL BE ADJUSTABLE:

110 °F DOMESTIC HOT WATER (CP-1):  
PUMP ON AT 95 °F HWC TEMPERATURE. PUMP OFF AT 105 °F HWC TEMPERATURE.

3  
M4.1

## DOMESTIC HOT WATER HEATER SEQUENCE OF OPERATIONS

NTS



VAV TERMINAL UNIT SEQUENCE OF OPERATIONS  
OCCUPANCY:

ZONE SHALL BE IN OCCUPIED MODE WHEN:  
• A USER DEFINABLE SCHEDULE DETERMINES THE SYSTEM IS IN THE OCCUPIED MODE.  
• OR ANY ZONE IS OCCUPIED AS DETERMINED BY LOCAL ZONE OVERRIDE BUTTON.

OPTIMAL START:

PROVIDE OPTIMAL START ALGORITHM FOR MORNING START-UP. ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP/COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD. START TIME SHALL AUTOMATICALLY ADJUST BASED ON CHANGES IN OUTSIDE AIR TEMPERATURE AND ZONE TEMPERATURES.

TEMPERATURE SETPOINT:

OCCUPIED MODE:

COOLING: 75° F (ADJ.)  
HEATING: 70° F (ADJ.)\*

UNOCCUPIED MODE:

COOLING: 81° F (ADJ.)  
HEATING: 60° F (ADJ.)

ALARMS SHALL BE PROVIDED AS FOLLOWS:

• HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).  
• LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

ZONE SETPOINT ADJUST:  
THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINT PLUS OR MINUS 2 DEGREES (ADJ.) AT THE ZONE SENSOR.

ZONE UNOCCUPIED OVERRIDE:  
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

REVERSING VARIABLE VOLUME TERMINAL UNIT - FLOW CONTROL:

THE UNIT SHALL MAINTAIN ZONE SETPOINTS BY CONTROLLING THE AIRFLOW THROUGH ONE OF THE FOLLOWING:

- WHEN ZONE TEMPERATURE IS GREATER THAN ITS COOLING SETPOINT, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM COOLING AIRFLOW (ADJ.) AND THE MAXIMUM COOLING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.
- WHEN THE ZONE TEMPERATURE IS BETWEEN THE COOLING SETPOINT AND THE HEATING SETPOINT, THE ZONE DAMPER SHALL MAINTAIN THE MINIMUM REQUIRED ZONE VENTILATION (ADJ.).
- WHEN ZONE TEMPERATURE IS LESS THAN ITS HEATING SETPOINT, THE CONTROLLER SHALL ENABLE HEATING TO MAINTAIN THE ZONE TEMPERATURE AT ITS HEATING SETPOINT.
- WHEN THE ZONE IS UNOCCUPIED THE ZONE DAMPER SHALL BE CLOSED EXCEPT TO MEET CALL FOR HEATING OR COOLING.
- WHEN THE ZONE TEMPERATURE IS GREATER THAN ITS COOLING SETPOINT, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM COOLING AIRFLOW (ADJ.) AND THE MAXIMUM COOLING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.
- WHEN ZONE TEMPERATURE IS LESS THAN ITS UNOCCUPIED HEATING SETPOINT, THE CONTROLLER SHALL ENABLE HEATING TO MAINTAIN THE ZONE TEMPERATURE AT THE SETPOINT.

HEATING COIL VALVE:  
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE HEATING COIL VALVE OPEN ON DROPPING TEMPERATURE TO MAINTAIN ITS HEATING SETPOINT.

DISCHARGE AIR TEMPERATURE:

THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE. SUPPLY AIR TEMPERATURE SHALL BE LIMITED TO 95° F (ADJ.) ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 95° F (ADJ.).
- LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40° F (ADJ.).

4  
M4.1

## VAV TERMINAL UNIT SEQUENCE OF OPERATIONS

NTS



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M4.1

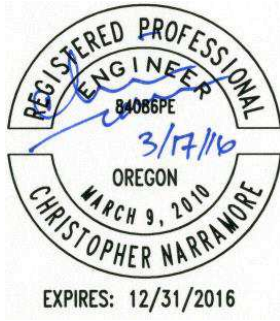
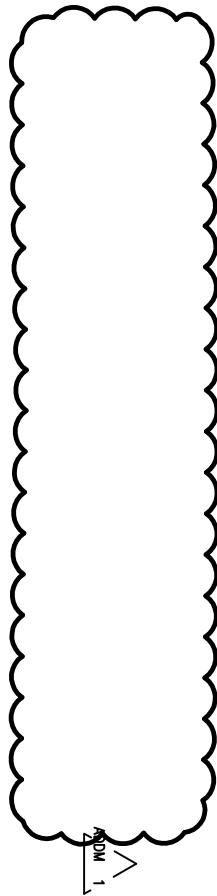
74-13107-40

03/03/2016

MECHANICAL CONTROLS  
ELMIRA HIGH SCHOOL  
RENOVATIONS

Attachment No. SK-M4  
to ADD 1  
Dated: 03/18/2016

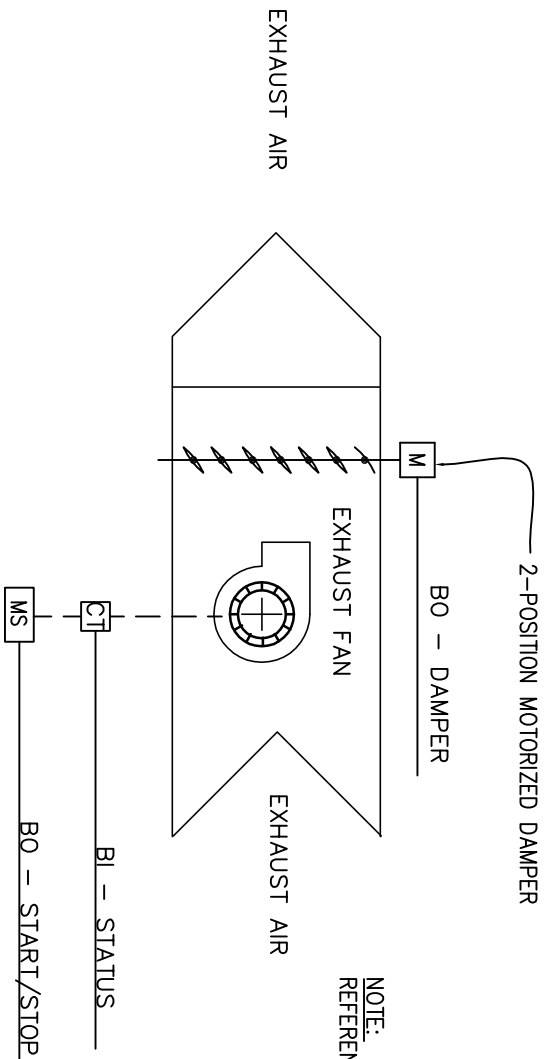




Mar 17 2016



Attachment No. SK-M5  
to ADD 1  
Dated: 03/18/2016



NOTE:  
REFERENCE FAN SCHEDULE FOR FANS CONTROLLED THUS.

SEQUENCE: SCHEDULED EXHAUST FAN:

RUN CONDITIONS – SCHEDULED:  
THE FAN SHALL RUN ACCORDING TO A USER DEFINABLE SCHEDULE AFTER DAMPER HAS BEEN PROVEN OPEN.

FAN:  
THE FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

EXHAUST AIR DAMPER:

THE EXHAUST AIR DAMPER SHALL OPEN ANYTIME THE FAN RUNS AND SHALL CLOSE ANYTIME THE FAN STOPS. THE EXHAUST AIR DAMPER SHALL CLOSE 30 SEC (ADJ.) AFTER THE FAN STOPS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- DAMPER FAILURE: COMMANDED OPEN, BUT THE STATUS IS CLOSED.

FAN STATUS:

THE CONTROLLER SHALL MONITOR THE FAN STATUS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- FAN RUNTIME EXCEEDED: FAN STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

ARI/TECH CLASSROOM 043 INTERLOCK

RETURN AIR DAMPER CONTROL:

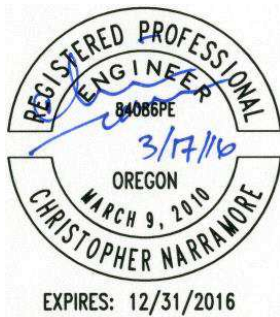
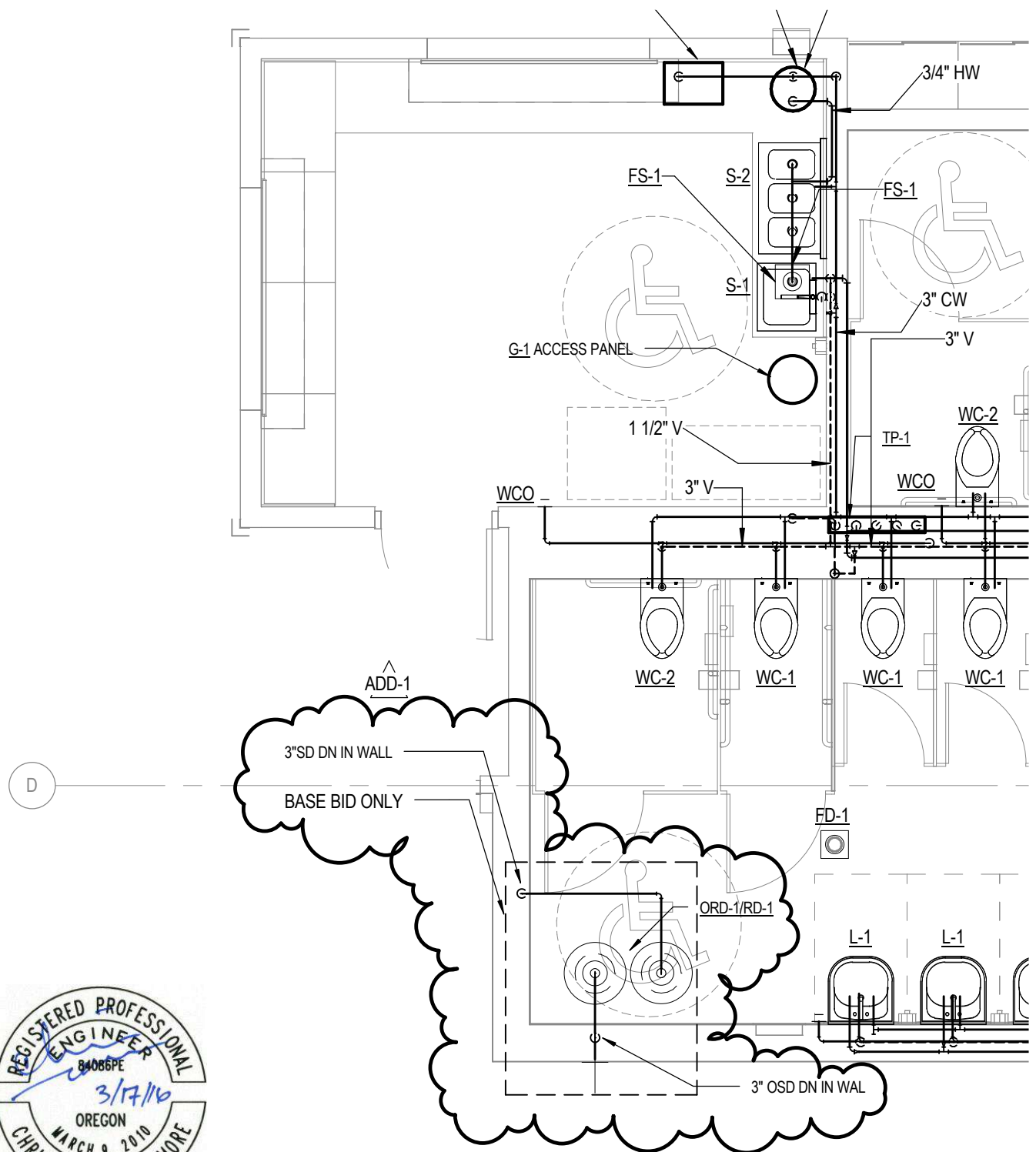
THE RETURN AIR DAMPER SHALL CLOSE ANYTIME THE FAN RUNS AND SHALL OPEN ANYTIME THE FAN STOPS. THE RETURN AIR DAMPER SHALL OPEN 30 SEC (ADJ.) AFTER THE FAN STOPS

# SCHEDULED EXHAUST FAN SEQUENCE OF OPERATIONS

1  
M4.2  
NTS



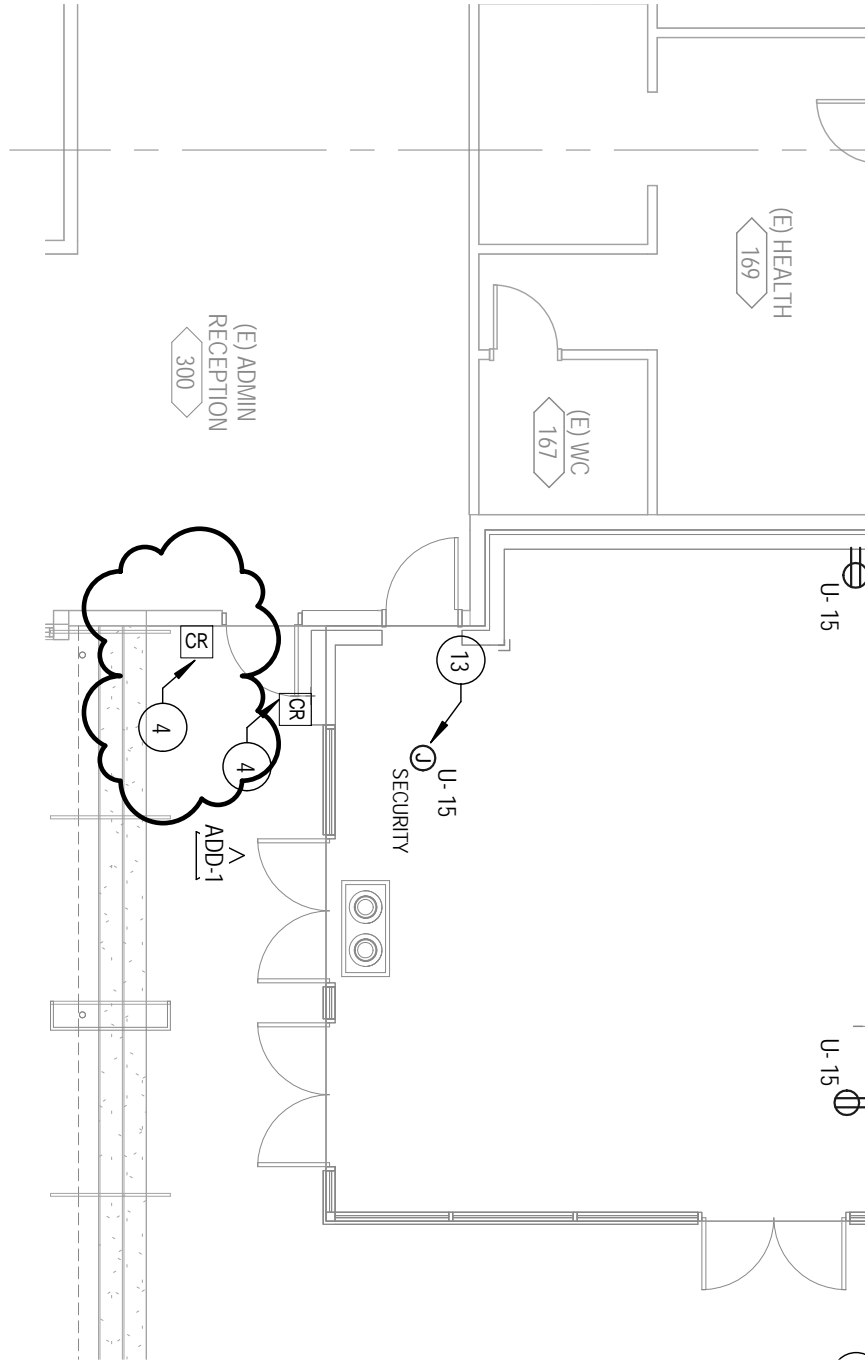




Mar 17 2016







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## E2.2ALT<sup>POWER</sup> & SPECIAL SYSTEMS PLAN - AREA B

74-13107-40  
03/18/ 2016

ELMIRA HIGH SCHOOL

Attachment SK-E2 to ADD 1

ELMIRA HIGH SCHOOL  
FERN RIDGE SCHOOL DISTRICT  
ELMIRA, OREGON

DLR GROUP PROJECT NO. 74-13107-40  
ADDENDUM 1  
MARCH 18, 2016

**ADDENDUM 1 APPENDIX 3**

RESPONSE TO BIDDER'S QUESTIONS

ADDENDUM 1

APPENDIX 3

**RESPONSE TO BIDDER'S QUESTIONS:**

**Question:** The 051200 spec calls for an approved fabricator, approved by the Local Building department. Is this required?

**Response:** ***Yes, required. Approved agencies shall perform structural tests and special inspections during construction as required per code Chapter 17.***

**Question:** Under section 1014, Signage is listed in the index, but there are no specifications listed regarding exterior or interior signage.

**Response:** ***Specification has been added in Addendum 1. See Spec Section 101423 for Panel Signage. Note that Keynote #3 on Exterior Elevation drawings has been updated to reference Spec Section 101419 Dimensional Letter Signage.***

**Question:** What areas of the High School are considered "Historical Areas" per spec section 024119, Page 7?

**Response:** ***There are no "Historic Areas" within this project. Reference to this on Page 7 of 024119 has been removed via Addendum 1.***

**Question:** Is there a specification section for skylights?

**Response:** ***Specification for skylights will be forthcoming in a future Addendum. Basis-of-design is a domed polycarbonate skylight with low-E coating & integral curbs, 3'x5' dimension.***

**Question:** What is the spec and fire rating required for the glazing in openings WE01 and WE02?

**Response:** ***Clarification will be forthcoming in a future Addendum after verification with the Lane County Permit Reviewer.***

**Question:** Is it intentional to have one less card reader rough-in in the Alternate option versus the Base Bid?

**Response:** ***Card Reader Rough-In note has been added to Alternate on Sheet E2.2 Alt at Door 105G.***

**Question:** Spec 098433 specifies 3 different Sound Absorbing Wall Units (SAW-1, SAW-2 & SAW-3). There is no indication on the plans which type is used where. In addition, there is no finish schedule specifying what fabrics have been chosen for each type. Please clarify.

**Response:** ***See interior elevations on A12.1 and A12.2 for location of Sound Absorbing Wall Panels. There is one type of panel, and spec has been updated in this Addendum 1. Fabric basis of design is Colorsonix manufactured by MBI Products Company, Inc or comparable product per 098433, 2.2, B. Therefore, basis-of-design is Guilford of Maine fabrics or comparable. Color to be selected from standard fabric options by Owner and Architect during construction.***

**END OF RESPONSE TO BIDDER'S QUESTIONS**



ELMIRA HIGH SCHOOL  
FERN RIDGE SCHOOL DISTRICT  
ELMIRA, OREGON

DLR GROUP PROJECT NO. 74-13107-40  
ADDENDUM 1  
MARCH 18, 2016

**ADDENDUM 1 APPENDIX 4**

SUBSTITUTION REQUEST REVIEW

## APPENDIX 4

### **SUBSTITUTION REQUEST REVIEW (PREBID)**

Approval applies to specific product substitution only and does not relieve the Contractor/Supplier from the responsibility of meeting all applicable requirements of the Plans and Specifications. "Yes" indicates that the substitution request is accepted; "No" indicates that it is NOT accepted, and "Pending" indicates that evaluation of the substitution request is pending.

The following representatives and manufacturers have further agreed upon the following:

1. The proposed substitution does not affect dimensions show on the Drawings.
2. The proposer will pay for changes to the building design, including engineering design, detailing, and construction costs caused by the requested substitution.
3. The proposed substitution will have no adverse effect on other trades, the construction schedule, or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.
5. The proposed substitution function, appearance, and quality are equivalent or superior to the specified item.

<u>Product</u>	<u>Proposed Added Manufacturer</u>	<u>Accepted?</u>
Athletic Equipment	Performance Sports Systems	Yes
Wood Ceilings	Norton Industries	Yes
Metal Lockers	List Industries	Yes
HVLS Ceiling Fans	Entrematic	Yes
Split Systems	Fujitsu	Yes
VAV Terminal Units	Price	Yes
HVAC Controls	Johnson Controls FX Series	Pending
Water Cooler w/ Filler EWC-1	Murdock A132 Series	Pending
Water Cooler w/ Filler EWC-2	Murdock A131 Series	Pending
Water Mixing Valve	Acorn Controls MV17 Series	Pending
Water Mixing Valve	Acorn Controls ST70 Series	Pending

Light Fixture SF2	Day-Brite	Pending
Light Fixture WF1A & WF1B	Primus	Pending
Light Fixture X1, X1G, X2	Chloride	Pending

**END OF SUBSTITUTION REQUEST REVIEW**

ELMIRA HIGH SCHOOL  
FERN RIDGE SCHOOL DISTRICT  
ELMIRA, OREGON

DLR GROUP PROJECT NO. 74-13107-40  
ADDENDUM 1  
MARCH 18, 2016

**ADDENDUM 1 APPENDIX 5**

PRE-BID WALK THROUGH SIGN-IN SHEETS

**FERN RIDGE SCHOOL DISTRICT 28J**  
**EHS Auxiliary Gymnasium**  
**Pre-Proposal meeting**

Wednesday March 16, 2016, 3:00 pm PDT  
 Fern Ridge School District Administrative Office  
 88834 Territorial Rd, Elmira, OR 97437

**RECORD OF ATTENDANCE**

Name	Representing	E-Mail	Phone
Matt Starks	Kincham Const.	matt.starks@kinchamconstruction.com	541-579-1004
Eric Stevenson	Chambers Const.		
Brian Anderson	Chambers Const.	b.anderson@chambers-gc.com	541-687-9445
Don Harrison	Bircham Const.	Don.Bircham@construction.com	541-579-1002
Chris Leturao	Superior Electric	SuperiorElectric.com@gmail	541-556-4913

**FERN RIDGE SCHOOL DISTRICT 28J**  
**EHS Auxiliary Gymnasium**  
**Pre-Proposal meeting**

Wednesday March 16, 2016, 3:00 pm PDT  
 Fern Ridge School District Administrative Office  
 88834 Territorial Rd, Elmira, OR 97437

**RECORD OF ATTENDANCE**

Name	Representing	E-Mail	Phone
Jason Krawczyk	LCGPence	Jason.K@LCGP.com	503 932 6541
DUANE BENNETT	DEG	DUANE.BENNETT@DEG.US.COM	541-747-0811
Ian Sholian	New Way Electric	Ian@newwayelectric.com	541-686-2345
David Nelson	Nelson Concrete	nelsonconcrete72@gmail.com	
Mike Beecher	Allsafe Fire & Security	mbeecher@allsafe-fire.us	

# FERN RIDGE SCHOOL DISTRICT 28J

## EHS Auxiliary Gymnasium

### Pre-Proposal meeting

Wednesday March 16, 2016, 3:00 pm PDT  
Fern Ridge School District Administrative Office  
88834 Territorial Rd, Elmira, OR 97437

#### RECORD OF ATTENDANCE

Name	Representing	E-Mail	Phone
Dana Fuller	2G Construction	djost@2gconstruction.com	541 689-3850
Jane Gooding	DLR Group	gooding@dlrgroup.com	503 200 3966
Emil Hammed	Cornerstone	emilh@cornerstonengr.com	503-539-2245
Eric Duncan	Brothers Plumbing	eric@brothers-plumbing.com	541-510-1389
MIKE BEECHER	ALLSAFE FIRE & SECURITY	MBEECHER@ALLSAFEFIRE.US	
DAVID NELSON	NELSON CONCRETE	NELSONCONCRETE72@GMAIL.COM	