



ELLISON - AUXIER
ARCHITECTS

Addendum No. 4

Date: 05.26.2023

Project: Missouri Western State University – CTAC Building

All Prospective Bidders:

All bidders furnishing necessary materials and/or labor, this addendum is hereby part of the Contract Documents as though it were originally therein. Refer to Proposal Form for acknowledgement of Addenda.

Clarification:

1. **No Clarifications**

Bidding Requirements

1. **No Revisions**

Changes to Project Manual:

1. Section 08 4500 – TRANSLUCENT WALL AND ROOF ASSEMBLIES

1. All perimeter aluminum framing members shall be thermally broken with a nylon thermal strut.
2. Panel grid members shall be constructed of 1" (minimum) thermoset fiberglass composite I-beam grid core and aluminum alloy and tempered as recommended by manufacturer with provisions for mechanical interlocking of muntin-mullion and perimeter. Width of I-beam shall be no less than 7/16".
3. Exposed aluminum framing members shall receive a painted finish in lieu of a clear anodized finish. Color shall be selected from manufacturer's standard color range.

2. Section 28 3111 – DIGITAL, ADDRESSABLE FIRE-ALARM SYSTEM

1. OMIT: Bosch, Fike, and GE UTC as approved manufacturers.

Changes to Drawings:

CIVIL

1. Sheet C100 – SITE PLAN

1. Gravel paving shall be 6" thick MoDOT Type 5 Aggregate Base

ARCHITECTURAL

1. Sheet A911 – SCHEDULES

1. Framing for window types A, C, & F shall be curtainwall framing. Curtainwall framing shall be equal to Kawneer 1600 series.

STRUCTURAL

1. Sheet S100 -FOUNDATION PLAN

1. Floor slab between grids 1-5 & B-C (Shop 105) shall be SOG-3 in lieu of SOG-1.

MECHANICAL

1. No Revisions

ELECTRICAL

1. Sheet E100 – LEVEL 1 - POWER

1. IT 102, provide and install a dedicated 120v circuit for the access control security panel, location to be determined. Connect to the spare breaker in Panel L.

2. Sheet E300 – LEVEL 1 - SYSTEMS

1. Shop 105, provide a total of 6 junction boxes with conduit for access points. Access points will be wall mounted in locations as directed by the Architect/Owner.
2. Rooms 106, 112, 113, 117 ; provide rough-ins for 2 ceiling mounted access points in each room.
3. Lobby 101, lounge 102, Conference 119 provide rough-in for ceiling mounted access points in each room.

PLUMBING

1. No Revisions

FIRE PROTECTION

1. No Revisions

END OF ADDENDUM

**SECTION 22 1513
GENERAL-SERVICE COMPRESSED-AIR PIPING**

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes piping and related specialties for general-service compressed-air systems operating at 150 psig (1035 kPa) or less.

1.02 ACTION SUBMITTALS

- A. Product Data: For the following:
1. Piping.
 2. Valves.

1.03 INFORMATIONAL SUBMITTALS

- A. Field quality-control test reports.

1.04 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

1.05 QUALITY ASSURANCE

- A. ASME Compliance: Comply with ASME B31.9, "Building Services Piping," for low-pressure compressed-air piping.

PART 2 - PRODUCTS

2.01 PIPES, TUBES, AND FITTINGS

- A. Steel Pipe: ASTM A53/A53M, Type E or S, Grade B, black with ends threaded according to ASME B1.20.1.
1. Steel Nipples: ASTM A733, made of ASTM A53/A53M or ASTM A106, Schedule 40, galvanized seamless steel pipe. Include ends matching joining method.
 2. Malleable-Iron Fittings: ASME B16.3, Class 150 or 300, threaded.
 3. Malleable-Iron Unions: ASME B16.39, Class 150 or 300, threaded.
 4. Steel Flanges: ASME B16.5, Class 150 or 300, carbon steel, threaded.
- B. Transition Couplings for Metal Piping: Metal coupling or other manufactured fitting same size as, with pressure rating at least equal to and ends compatible with, piping to be joined.

2.02 JOINING MATERIALS

- A. Pipe-Flange Gasket Materials: Suitable for compressed-air piping system contents.
1. ASME B16.21, nonmetallic, flat, full-face, asbestos free, 1/8-inch (3.2-mm) maximum thickness.
- B. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, unless otherwise indicated.

2.03 VALVES

- A. Metal Ball Valves: Comply with requirements in Section 220523 "Ball Valves for Plumbing Piping."

2.04 DIELECTRIC FITTINGS

- A. General Requirements for Dielectric Fittings: Combination fitting of copper alloy and ferrous materials with insulating material; suitable for system fluid, pressure, and temperature. Include threaded, plain, or weld-neck end connections that match piping system materials.
- B. Dielectric Unions: Factory-fabricated union assembly, for 250-psig (1725-kPa) minimum working pressure at 180 deg F (82 deg C).

2.05 QUICK COUPLINGS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Aeroquip Performance Products; Eaton, Hydraulics Sector.
 2. Bowes Manufacturing Inc.
 3. Foster Manufacturing, Inc.
 4. Milton Industries, Inc.
 5. Parker Hannifin Corporation.
 6. Rectus Corp.
 7. Schrader-Bridgeport/Standard Thomson.
- B. General Requirements for Quick Couplings: Assembly with locking-mechanism feature for quick connection and disconnection of compressed-air hose.
- C. Automatic-Shutoff Quick Couplings: Straight-through brass body with O-ring or gasket seal and stainless-steel or nickel-plated-steel operating parts.
1. Socket End: With one-way valve and threaded inlet for connection to piping or threaded hose fitting.
 2. Plug End: Straight-through type with barbed outlet for attaching hose.
- D. Valveless Quick Couplings: Straight-through brass body with stainless-steel or nickel-plated-steel operating parts. Confirm outlet style with Owner.
1. Socket End: With O-ring or gasket seal, without valve, and with barbed inlet for attaching hose.
 2. Plug End: With barbed outlet for attaching hose.

2.06 COMPRESSOR EQUIPMENT

- A. All compressor equipment including compressor and associated accessories including but not limited to filters, air dryers, pressure regulators, vibration isolators, attenuator and other related accessories and their installation shall be the responsibility of the Owner.

PART 3 - EXECUTION

3.01 PIPING APPLICATIONS

- A. Compressed-Air Piping between Air Compressors and Receivers: Use the following piping materials for each size range:
1. NPS 2 (DN 50) and Smaller: Steel pipe; threaded, malleable-iron fittings; and threaded joints.
- B. Low-Pressure Compressed-Air Distribution Piping: Use the following piping materials for each size range:
1. NPS 2 (DN 50) and Smaller: Steel pipe; threaded, malleable-iron fittings; and threaded joints.

3.02 VALVE APPLICATIONS

- A. Comply with requirements in "Valve Applications" Article in Section 220523 "Ball Valves for Plumbing Piping."

3.03 PIPING INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of compressed-air piping. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, air-compressor sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.
- B. Install piping concealed from view and protected from physical contact by building occupants, unless otherwise indicated and except in equipment rooms and service areas.
- C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited, unless otherwise indicated.
- D. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal and to coordinate with other services occupying that space.
- E. Install piping adjacent to equipment and machines to allow service and maintenance.
- F. Install air and drain piping with 1 percent slope downward in direction of flow.

- G. Install nipples, flanges, unions, transition and special fittings, and valves with pressure ratings same as or higher than system pressure rating, unless otherwise indicated.
- H. Install branch connections to compressed-air mains from top of main. Provide drain leg and drain trap at end of each main and branch and at low points.
- I. Install piping to permit valve servicing.
- J. Install piping free of sags and bends.
- K. Install fittings for changes in direction and branch connections.
- L. Install unions, adjacent to each valve and at final connection to each piece of equipment and machine.
- M. Install sleeves for piping penetrations of walls, ceilings, and floors. Comply with requirements for sleeves specified in Section 220517 "Sleeves and Sleeve Seals for Plumbing Piping."
- N. Install escutcheons for piping penetrations of walls, ceilings, and floors. Comply with requirements for escutcheons specified in Section 220518 "Escutcheons for Plumbing Piping."

3.04 JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- B. Remove scale, slag, dirt, and debris from pipe and fittings before assembly.
- C. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Apply appropriate tape or thread compound to external pipe threads.
- D. Dissimilar Metal Piping Material Joints: Use dielectric fittings.

3.05 VALVE INSTALLATION

- A. General-Duty Valves: Comply with requirements in Section 220523 "Ball Valves for Plumbing Piping."
- B. Install shutoff valves and unions or flanged joints at compressed-air piping to air compressors.

3.06 DIELECTRIC FITTING INSTALLATION

- A. Install dielectric unions in piping at connections of dissimilar metal piping and tubing.

3.07 HANGER AND SUPPORT INSTALLATION

- A. Comply with requirements in Section 220529 "Hangers and Supports for Plumbing Piping and Equipment" for pipe hanger and support devices.
- B. Vertical Piping: MSS Type 8 or 42, clamps.
- C. Individual, Straight, Horizontal Piping Runs:
 1. MSS Type 1, adjustable, steel clevis hangers.
- D. Base of Vertical Piping: Steel wall bracket.
- E. Support horizontal piping within 12 inches (300 mm) of each fitting and coupling.
- F. Rod diameter may be reduced 1 size for double-rod hangers, with 3/8-inch (10-mm) minimum rods.
- G. Install hangers for Schedule 40, steel piping with the following maximum horizontal spacing and minimum rod diameters:
 1. NPS 1/4 to NPS 1/2 (DN 8 to DN 15): 96 inches (2400 mm) with 3/8-inch (10-mm) rod.
 2. NPS 3/4 to NPS 1-1/4 (DN 20 to DN 32): 84 inches (2100 mm) with 3/8-inch (10-mm) rod.
- H. Install supports for vertical, Schedule 40, steel piping every 15 feet (4.6 m).

3.08 LABELING AND IDENTIFICATION

- A. Install identifying labels and devices for general-service compressed-air piping, valves, and specialties. Comply with requirements in Section 220553 "Identification for Plumbing Piping and Equipment."

3.09 FIELD QUALITY CONTROL

A. Perform field tests and inspections.

B. Tests and Inspections:

1. Piping Leak Tests: Test new and modified parts of existing piping. Cap and fill general-service compressed-air piping with oil-free dry air or gaseous nitrogen to pressure of 50 psig (345 kPa) above system operating pressure, but not less than 150 psig (1035 kPa). Isolate test source and let stand for four hours to equalize temperature. Refill system, if required, to test pressure; hold for two hours with no drop in pressure.
2. Repair leaks and retest until no leaks exist.

END OF SECTION 221513