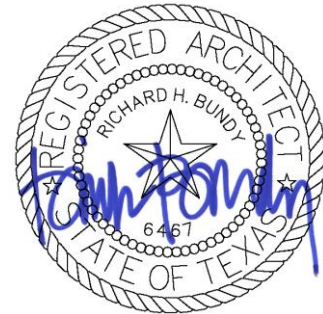


**A New Facilities Services Maintenance Building for:
Midwestern State University
Wichita Falls, Texas**



BYSP PROJECT NO. 18002

January 14, 2019

TO: All Contract Bidders of Record

The following changes are hereby made a part of the Plans and Specifications the same as if written therein.

Acknowledge receipt of this addendum by inserting its number and date in the Contractor's Bid Proposal. Failure to do so may subject bidder to disqualification. This addendum forms a part of the Contract Documents and modifies them as follows:

CLARAFICATIONS:

Item No. 1:

Additive Alternate No. 6:

Alternate to include, but not limited to all concrete paving and curbs, associated dirt work, striping and electrical site lighting (2 – PN fixtures).

Item No. 2:

Items to be Relocated (moved) by Contractor from existing location in Daniel Building to New Maintenance Shops Building. Contractor shall coordinate with owner to remove and relocate existing equipment listed below.

- a. 24” x 24” Metal Lockers, labeled as Key Note 20
- b. Two-post lift in Vehicle Maintenance Shop, labeled as Key Note 27
- c. Carpentry Shop equipment listed below
 - 1. Table Saw 1
 - 2. Table Saw 2
 - 3. Jointer
 - 4. Disc Sander
 - 5. Belt Sander
 - 6. Planer
 - 7. Shaper
 - 8. Disc Sander
 - 9. Drill Press
 - 10. Radial Arm Saw
 - 11. Chop Saw
 - 12. Band Saw
 - 13. Grinder
- d. Utility Sinks in Shops, labeled UT1 on plumbing drawings

SPECIFICATIONS:

Item No. 3:

Section 072100 Thermal Insulation:

Replace subsection 2.3 Foamed In-place Insulation of this section with the following.

2.3 SPRAY POLYURETHANE FOAM INSULATION

A. Open-Cell Polyurethane Foam Insulation: Spray-applied polyurethane foam using water as a blowing agent, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 1. BaySystems NorthAmerica, LLC.
 2. Demilec (USA) LLC.
 3. Gaco Western Inc.
 4. Icynene Inc.
 5. SWD Urethane Company.
2. Minimum density of 0.5 lb/cu. ft. (7.2 kg/cu. m), thermal resistivity of 3.7 deg F x h x sq. ft./Btu x in. at 75 deg F (24 K x m/W at 24 deg C). R-20 at exterior walls.

Item No. 4:

Section 083613 Sectional Doors:

At subsection 2.2 Door Assembly C. Air Filtration:

Change maximum rate to .09cfm/sf

Item No. 5:

Section 102113 Phenolic Toilet Compartments:

At subsection 2.2 Phenolic Toilet Compartment, B. Basis of Design Product:

Per a Substitution Request add Scranton Products to the list of manufacturers.

Item No. 6:

Section 104000 Identifying Devices:

See attached revised specification for interior signage. Interior Signage will be provided by APCO sign company using the new MSUTX standard Elevate Series.

Item No. 7:

Section 109000 Miscellaneous Specialties:

Remove this section for specifications, Miscellaneous Specialties are in section 100000.

SPECIFICATIONS CONT'D:

Item No. 8:

Section 133419 Pre-Engineered Buildings:

Add sub-section number 11 below for Insulation.

11. INSULATION:

- a. Roof system: Provide ThermaLift Insulation System compatible with SSR roof panels with clips and fasteners, along with the insulation bridge and insulation materials; R19 White vinyl faced insulation plus R25 unfaced for a minimum R-value of R30 installed over purlins.

Item No. 9:

Section 221413 General Service Compressed Air Piping:

Add this section, attached to this addendum.

DRAWINGS:

Item No. 10:

Sheet C-6: Site Paving

Site Paving Notes: Disregard reference to Terradyne Geotechnical Report in note #3.

There is no geotechnical report of r this project.

Item No. 11:

Sheet SP201: Site Details

Add detail number 10 attached to this addendum as sheet SP201.1 for steel bollard detail for electrical outlets at golf cart charging and block heater locations indicated by Key Note 19 on SP101 and shown on E101.

Item No. 12:

Sheet SP202: Site Details Detail 1 & 2

- Change depth of concrete pier to 2'-6" w/ minimum 24" embedment of post
- Type I fencing shall be 1" thick 8" wide flat top pickets w/2" wide battens
- Type II fencing shall be 5/8" thick 6" wide dog-eared pickets
- Provide Semi-Transparent Fence Stain by Wood Defender or approved equal. Color to be selected by Architect. www.wooddefender.com
- Galv. poles shall be 2 7/8" dia. for 6' & alternate 8' fencing

Item No. 13:

Sheet S401: Framing Elevations

Remove two framed opening for louvers at Grid Line A between grid lines 3 & 4

Item No. 14:

Sheet S402: Framing Elevations

Remove two framed opening for louvers at Grid Line 1 near grid line C

Item No. 15:

Sheet A101: Floor Plan

Key Note 11 – The exposed steel columns (rigid frames) will paint up the knuckle (approx. 13' AFF) per key note 11 on A101. All exposed structure above that point including all roof framing will be left unpainted with only the primed finished from the PEMB manufacturer.

Item No. 16:

Sheet A101: Floor Plan

Add Key Note 28 - Provide 52" x 29" x 8.5" deep recessed slab for owner furnished/contractor installed scissor lift table, coordinate with elec. & structural. Refer revised plan on sheet A101.1 attached to this addendum for location.

Item No. 17:

Sheet A401-A406:

Remove R30 Spray-in Thermal Insulation at roof and replace with PEMB insulation as described below in item #8 above. (Spray-in insulation will be in exterior wall cavity only.)

Item No. 18:

Sheet A403 & A404:

As part of Add. Alt. No. 1 provide 4" wide x 16 Ga. x continuous metal strap in line with MBM wall girts for liner panel attachment at all 8" metal stud exterior framing. Refer structural details 3-5/S401.

END OF ADDENDUM

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Foam-plastic board insulation.
 - 2. Glass-fiber board insulation.
 - 3. Glass-fiber blanket insulation.
 - 4. Vapor retarders.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1.3 INFORMATIONAL SUBMITTALS

- A. Product test reports.
- B. Research/evaluation reports.

PART 2 - PRODUCTS

2.1 GLASS-FIBER BOARD INSULATION

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Celotex Corporation.
 - 2. CertainTeed Corporation.
 - 3. Johns Manville.
 - 4. Knauf Insulation.
 - 5. Owens Corning.

2.2 GLASS-FIBER BLANKET INSULATION

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. CertainTeed Corporation.
 - 2. Johns Manville.
 - 3. Owens Corning.

- B. Sound Control Batts: Unfaced, Glass-Fiber Blanket Insulation: ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.
- C. Thermal Insulation: Unfaced, Glass-Fiber Blanket Insulation: ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics. R-value minimum 11.0 for 3 ½” thickness and 19.0 for 6” thickness when tested in accordance with ASTM C518.

2.3 SPRAY POLYURETHANE FOAM INSULATION

- A. Open-Cell Polyurethane Foam Insulation: Spray-applied polyurethane foam using water as a blowing agent, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. BaySystems NorthAmerica, LLC.
 - b. Demilec (USA) LLC.
 - c. Gaco Western Inc.
 - d. Icynene Inc.
 - e. SWD Urethane Company.
 - 2. Minimum density of 0.5 lb/cu. ft. (7.2 kg/cu. m), thermal resistivity of 3.7 deg F x h x sq. ft./Btu x in. at 75 deg F (24 K x m/W at 24 deg C). R-20 at exterior walls.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and applications indicated.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.
- C. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

END OF SECTION

1. GENERAL:
See referenced note in SECTION: SPECIAL CONDITIONS, paragraph 1.
2. WORK INCLUDED:
Furnish labor and materials for identifying devices and other specialty signage indicated on the drawings and specified herein, and or both.
3. RELATED WORK SPECIFIED ELSEWHERE:
 - a. CMU: SECTION: MASONRY WORK.
4. SUBMITTALS:
Samples: Submit samples of each color and finish required for identifying signs for Architect's approval.
5. PRODUCT DELIVERY, STORAGE AND HANDLING:
 - a. Deliver materials in unopened, protective packaging to prevent physical damage.
 - b. Do not begin installation until sufficient materials to complete are received.
6. ACCEPTABLE MANUFACTURERS
 - a. Signage shall be manufactured by APCO Graphics, Inc. (a.k.a. APCO Signs or APCO USA), at 388 Grant Street SE, Atlanta, GA 30312.
7. ACCEPTABLE PRODUCT
 - a. Elevate Series - Frameless Modular Sign System (MSUTX Standard)
 - b. Substitutions not permitted.
8. Colors and Finishes:
Colors shall match MSUTX standards
9. ADA Compliance:
Sign system shall comply with all applicable provisions of the 2012 TAS & 2010 Standards for Accessible Design (the updated ADA Accessibility Guidelines, ADAAG), effective in March 2011. This includes requirements regarding which sign types require Braille/tactile features, character heights, raised character spacing, raised character stroke width, color contrast and installation locations and mounting heights within the facility.

<u>SIGN NO.</u>	<u>QTY.</u>	<u>SIZE</u>	<u>COPY (LETTERS)</u>
<u>ADA REGULATORY</u>			
1	1	Standard	HC WOMEN
2	1	Standard	HC MEN
3	6	6 x 2.5	EXIT
<u>ADA IDENTIFICATION – Sign Type A</u>			
4-16	12	8.5 x 5.5	To Be Determined

END OF SECTION

1. GENERAL:
See referenced note in SECTION: SPECIAL CONDITIONS, paragraph 1.
2. RELATED DOCUMENTS:
Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division - 1 Specifications sections apply to work specified in this section.
3. DESCRIPTION OF WORK:
 - a. Extent of pre-engineered buildings work is shown on drawings. Manufacturer shall provide required design loads unless indicated on structural drawings.
 - b. Manufacturer's standard components may be used, providing components, accessories, and complete structure conform to architectural design appearance shown and to specified requirements.
 - c. Concrete floor and foundations and installation of anchor bolts are specified in other sections.
4. QUALITY ASSURANCE: Design Criteria:
 - a. For structural steel members, comply with AISC "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings".
 - b. For light gage steel members, comply with AISI "Specification for the Design of Cold-Formed Steel Structural Members".
 - c. Design primary and secondary members and covering for applicable loads and combination of loads in accordance with Metal Building Manufacturer's Association (MBMA) "Recommended Design Practices Manual".
 - d. For welded connections, comply with AWS "Structural Welding Code".
 - e. Design Loads: Design each member to withstand stresses resulting from combinations of loads that produce maximum percentage of actual to allowable stress in that member, as prescribed in MBMA "Recommended Design Practices Manual".
 - f. Fabrication Criteria: Provide prefabricated metal buildings as produced by a manufacturer who is regularly engaged in fabrication and erection of pre-engineered metal structures of type and quality indicated.
 - g. Design sizes of prefabricated components and necessary field connections required for erection to permit easy assembly.
 - h. Clearly and legibly mark each piece and part of assembly to correspond with previously prepared erection drawings, diagrams, and instruction manuals.

5. **SUBMITTALS:**
- a. **Product Data:** Submit manufacturers product information, specifications and installation instructions for building components and accessories.
 - b. **Shop Drawings:** Submit complete erection drawings showing anchor bolts settings, sidewall, end wall, and roof framing, transverse cross sections, covering and trim details, and accessory installation details to clearly indicate proper assembly of building components.
 - c. **Certification:** Submit written Certification prepared and signed by a Professional Engineer, registered to practice in the State where building is to be erected, verifying that building design meets indicated loading requirements and codes of authorities having jurisdiction.
 - d. **Samples:** Submit samples of the following. Architect's review will be for color and texture only. Compliance with other requirements is responsibility of Contractor.
 - (1) 12" long by actual width of siding panels, with required finishes.
 - (2) Fasteners for application of roofing and siding panels.
 - (3) Sealants and closures.
6. **DELIVERY, STORAGE AND HANDLING:**
Deliver and store prefabricated components, sheets, panels, and other manufactured items so they will not be damaged or deformed. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weathertight ventilated covering. Store metal sheets or panels so that water accumulations will drain freely. Do not store sheets or panels in contact with other materials which might cause staining.
7. **MATERIALS:**
- a. Hot-Rolled Structural Shapes: ASTM A 36 OR A 529.
 - b. Tubing or Pipe: ASTM A 500, Grade B; ASTM A 501; or ASTM A 53.
 - c. Members Fabricated from Plate or Bar Stock: 42,000 psi minimum yield strength; ASTM A 529, A 570, or A 572.
 - d. Members Fabricated by Cold Forming: ASTM A 607, Grade 50.
 - e. Galvanized Steel Sheet: ASTM A 446 with G 90 coating; "Class" to suit manufacturer's standards.
8. **STRUCTURAL FRAMING COMPONENTS:**
- a. Rigid Frames: Hot rolled structural steel. Factory welded, and shop painted built-up "I" shape rigid frame consisting of tapered flange beams and straight columns. Furnish complete with attachment plates, bearing plates, and splice members. Factory drilled for bolted field assembly. Provide rigid frame at end walls where indicated. Length of span and spacing of frames as indicated except slight variations acceptable to meet manufacturer's standard.
 - b. End Wall Columns: Factory welded, built-up "I" shape or cold formed sections. Fabricate of minimum 14 gauge. material. Shop painted.
 - c. Wind Bracing: Adjustable, threaded steel rods, 1/2" diameter minimum; ASTM A 36 or A572, Grade D.

- d. Secondary Framing: Purlins, eave struts, end wall beams, flange and sag bracing; minimum 16 gauge. rolled formed sections. Shop painted.
 - e. Base channel, sill angle, end wall structural members (except columns and beams), purling spacers; minimum 14 gauge. cold formed steel, galvanized.
 - f. Bolts: ASTM A 307 or A 325 as necessary for design loads and connection details. Shop painted, except provide zinc- or cadmium-plated units when in direct contact with panels.
 - g. Fabrication: Shop fabricate to the indicated size and section, complete with base plates, bearing plates, and other plates as required for erection, welded in place, and with all required holes for anchoring or connections shop drilled or punched to template dimensions.
 - (1) Shop connections power riveted, bolted, or welded.
 - (2) Field connections bolted.
 - h. Shop Painting : Clean surfaces to be primed of loose mill scale, rust, dirt, oil, grease, and other matter precluding paint bond. Follow procedures of SSPC-SP3 for power tool cleaning, SSPC-SP7 for brush-off blast cleaning, and SSPC-SPI for solvent cleaning.
 - i. Prime structural steel: primary and secondary framing members with manufacturer's standard rust-inhibitive primer having over 50% rust-inhibitive pigment, such as red-lead mixed pigment alkyd varnish (FS TT-P-86, Type II) or zinc chromate iron-oxide alkyd (TT-P-636).
 - j. Prime galvanized members, after phosphoric acid pretreatment, with zinc dust-zinc oxide primer (FS TT-P-641).
9. SIDING:
- a. General: Provide siding sheets formed to general profile or configuration as indicated. Provide flashings, closers, fillers, metal expansion joints, fascias, and other sheet metal accessories, factory formed of same material and finish as siding.
 - b. Wall panels shall be 26 gauge standard pre-finished R panel with 20 year paint warranty (color selection by Architect from standard colors) or approved equal.
 - c. Metal thickness: not less than 26 gauge. (0.0179).
 - d. Sheet Panel Fasteners: Manufacturer's standard system of self-tapping screws, bolts, and nuts, self-locking rivets, self-locking bolts, end-welded studs, and other suitable fasteners designed to withstand design loads.
 - (1) Provide metal-backed neoprene washers under heads of fasteners bearing on weather side of panels.
 - (2) Use aluminum or stainless steel fasteners for exterior application and galvanized or cadmium plated fasteners for interior applications.
 - (3) Locate and space fastenings for true vertical and horizontal alignment. Use proper type fastening tools to obtain controlled uniform compression for positive seal without rupture of neoprene washer.
 - (4) Provide fasteners with heads matching color of siding sheets by means of plastic caps or factory applied coating.

- e. Flexible Closure Strips: Closed-cell, expanded cellular rubber, self-extinguishing, cut or premolded to match corrugation configuration of roofing and siding sheets. Provide where indicated and necessary to ensure weathertight construction.
- f. Sealing Tape: 100% solids, pressure sensitive grey polyisobutylene compound tape with release paper backing. Not less than 1/2" wide and 1/8 " thick, nonsag, nontoxic, nonstaining and permanently elastic.
- g. Joint Sealant: One-part elastomeric; polyurethane, polysulfide, or silicon rubber as recommended by building manufacturer.
- h. Baked Enamel Finish: Provide shop-applied baked enamel finish to galvanized steel siding, and related trim and accessories.
- i. Clean: galvanized steel with an alkaline compound, then treat with a zinc phosphate conversion coating, and seal with a chromic acid rinse.
- j. Apply: to pretreated steel baked-on thermo-setting synthetic enamel system, such as acrylic enamel or silicone polyester, in one or more coats as standard with manufacturer to achieve a minimum dry film thickness of one mil.

10. ROOFING:

Roof panels shall be 24 ga. standard pre-finished standing seam roof (SSR) with striations panel with 20 year paint warranty (color selection by Architect from standard colors) or approved equal.

Roof system shall meet UL Class 90 wind uplift rating for purlins spaced maximum 5'-0" O.C. Panel to purlin attachment clips shall provide 1" of panel movement in either direction to compensate for thermal effects and shall be sized to allow for thickness of fiberglass insulation installed over top of roof purlins. One panel end lap shall be allowed on each major roof slope, 5" lap and staggered one purlin between panels. End laps shall occur over purlins Roofing shall be galvalume steel sheet with pre-painted finish with 20 year warranty, (color selection by Architect from standard colors). Submit color samples to Architect for approval. Roof color and wall panel color shall match.

11. INSULATION:

- a. Roof system: Provide ThermoLift Insulation System compatible with SSR roof panels with clips and fasteners, along with the insulation bridge and insulation materials; R19 White vinyl faced insulation plus R25 unfaced for a minimum R-value of R30 installed over purlins.

12. LINE PANEL:

Liner panels shall be 28 ga. standard prefinished "R" panel with 20-year paint warranty (Color selection by architect from standard colors) or approved equal.

13. ERECTION: STRUCTURAL

- a. Framing: Erect structural framing true to line, level and plumb, rigid and secure. Level base plates to a true even plane with full bearing to supporting structures, set with double-nutted anchor bolts. Use a non-shrinking grout to obtain uniform bearing and to maintain a level base line elevation. Moist cure grout for not less than 7 days after placement.

- b. Purl ins and Girts: Provide rake or gable purlins with tight fitting closure channels and fascias. Locate and space wall girts to suit door and window arrangements and heights. Secure purlins and girts to structural framing and hold rigidly to a straight line by sag rods.
- c. Bracing: Provide diagonal rod or angle bracing in both roof and sidewalls as indicated.
 - (1) Movement resisting frames may be used in lieu of sidewall rod bracing, to suit manufacturer's standards.
 - (2) When diaphragm strength of roof or wall covering is adequate to resist wind forces, rod or other forms of bracing will not be required.
- d. Framed Openings: Provide shapes of proper design and size to reinforce opening and to carry loads and vibrations imposed, including equipment furnished under mechanical or electrical work. Securely attach to building structural frame.

14. ERECTION: SIDING

- a. General: Arrange and nest side lap joints so that prevailing winds blow over, not into, lapped joints. Lap ribbed or fluted sheets one full rib corrugation. Apply panels and associated items for neat and weathertight enclosure. Avoid "panel creep" or application not true to line. Protect factory finishes from damage.
- b. Wall Sheets: Apply elastomeric sealant continuous between metal base channel (sill angle) and concrete and elsewhere as necessary for waterproofing. Handle and apply sealant and back-up in accordance with sealant manufacturer's recommendations.
 - (1) Align bottoms of wall panels and fasten panels with blind rivets, bolts, or self-tapping screws. Fasten flashings, trim around openings, etc. with self-tapping screws; fasten window and door frames with machine screws or bolts. When building height requires two rows of panels at gable ends, align lap of gable panels over wall panels at eave height.
 - (2) Install screw fasteners with power tool having controlled torque adjusted to compress neoprene washer tightly without damage to washer, screw threads, or panels. Install screws in pre-drilled holes.
- c. Sheet Metal Accessories: Install sheet metal accessories in accordance with manufacturer's recommendations for positive anchorage to building and weathertight mounting. Adjust operating mechanism for precise operation.
- d. Swing Doors and Frames: Install door and frame straight, plumb, and level. Securely anchor frame to building structure. Set units with 1/8 " maximum clearance between door and frame at jambs and head, and 3/4" max. between door and floor. Adjust hardware for proper operation.
- e. Provide and install prefinished standard gauge downspouts and gutters designed and sized for proper drainage and located as indicated in plans

END OF SECTION

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. This Section includes piping and related specialties for general-service compressed-air systems operating at 200 psig or less.
- B. Related Sections include the following:
 - 1. Section 221519 "General-Service Packaged Air Compressors and Receivers" for general-service air compressors and accessories.

1.3 DEFINITIONS

- A. ABS: Acrylonitrile-butadiene-styrene plastic.
- B. CR: Chlorosulfonated polyethylene synthetic rubber.
- C. EPDM: Ethylene-propylene-diene terpolymer rubber.
- D. HDPE: High-density polyethylene plastic.
- E. NBR: Acrylonitrile-butadiene rubber.
- F. PE: Polyethylene plastic.
- G. PVC: Polyvinyl chloride plastic.
- H. High-Pressure Compressed-Air Piping: System of compressed-air piping and specialties operating at pressures between 150 and 200 psig.
- I. Low-Pressure Compressed-Air Piping: System of compressed-air piping and specialties operating at pressures of 150 psig or less.

1.4 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Dielectric fittings.
 - 2. Flexible pipe connectors.

3. Safety valves.
4. Pressure regulators. Include rated capacities and operating characteristics.
5. Automatic drain valves.
6. Filters. Include rated capacities and operating characteristics.
7. Quick couplings.
8. Hose assemblies.

1.5 INFORMATIONAL SUBMITTALS

- A. Brazing and welding certificates.
- B. Qualification Data: For Installers.
- C. Field quality-control test reports.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For general-service compressed-air piping specialties to include in emergency, operation, and maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications:
 1. Extruded-Tee Outlet Procedure: Qualify operators according to training provided by T-DRILL Industries Inc., for making branch outlets.
- B. Brazing: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications," or to AWS B2.2, "Standard for Brazing Procedure and Performance Qualification."
- C. Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX.
- D. ASME Compliance:
 1. Comply with ASME B31.1, "Power Piping," for high-pressure compressed-air piping.
 2. Comply with ASME B31.9, "Building Services Piping," for low-pressure compressed-air piping.

PART 2 - PRODUCTS

2.1 PIPES, TUBES, AND FITTINGS

- A. Schedule 40, Steel Pipe: ASTM A 53/A 53M, Type E or S, Grade B, black or hot-dip zinc coated with ends threaded according to ASME B1.20.1.

1. Steel Nipples: ASTM A 733, made of ASTM A 53/A 53M or ASTM A 106, 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.
 5. Wrought-Steel Butt-Welding Fittings: ASME B16.9, Schedule 40.
- B. Copper Tube: ASTM B 88, Type K or L seamless, drawn-temper, water tube.
1. Wrought-Copper Fittings: ASME B16.22, solder-joint pressure type or MSS SP-73, wrought copper with dimensions for brazed joints.
 2. Cast-Copper-Alloy Flanges: ASME B16.24, Class 150 or 300.
 3. Copper Unions: ASME B16.22 or MSS SP-123.
- C. 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.

2.2 JOINING MATERIALS

- A. Pipe-Flange Gasket Materials: Suitable for compressed-air piping system contents.
1. ASME B16.21, nonmetallic, flat, asbestos free, 1/8-inch maximum thickness unless thickness or specific material is indicated.
 - a. Full-Face Type: For flat-face, Class 125, cast-iron and cast-bronze flanges.
 - b. Narrow-Face Type: For raised-face, Class 250, cast-iron and steel flanges.
- B. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.
- C. Brazing Filler Metals: AWS A5.8/A5.8M, BCuP Series, copper-phosphorus alloys for general-duty brazing, unless otherwise indicated.
- D. Welding Filler Metals: Comply with AWS D10.12/D10.12M for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.

2.3 DIELECTRIC FITTINGS

- A. General Requirements: Assembly of copper alloy and ferrous materials with separating nonconductive insulating material. Include end connections compatible with pipes to be joined.
- B. Dielectric Unions:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Matco-Norca.
 - b. Viega LLC.
 - c. WATTS.
 - d. Wilkins.

2. Description:
 - a. Standard: ASSE 1079.
 - b. Pressure Rating: 125 psig minimum at 180 deg F.
 - c. End Connections: Solder-joint copper alloy and threaded ferrous.

2.4 FLEXIBLE PIPE CONNECTORS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Bronze-Hose Flexible Pipe Connectors: Corrugated-bronze tubing with bronze wire-braid covering and ends brazed to inner tubing.
 1. Working-Pressure Rating: 200 psig minimum.
 2. End Connections, NPS 2 and Smaller: Threaded copper pipe or plain-end copper tube.
- C. Stainless-Steel-Hose Flexible Pipe Connectors: Corrugated-stainless-steel tubing with stainless-steel wire-braid covering and ends welded to inner tubing.
 1. Working-Pressure Rating: 200 psig minimum.
 2. End Connections, NPS 2 and Smaller: Threaded steel pipe nipple.

2.5 SPECIALTIES

- A. Safety Valves: ASME Boiler and Pressure Vessel Code: Section VIII, "Pressure Vessels," construction; National Board certified, labeled, and factory sealed; constructed of bronze body with poppet-type safety valve for compressed-air service.
 1. Pressure Settings: Higher than discharge pressure and same or lower than receiver pressure rating.
- B. Air-Main Pressure Regulators: Bronze body, direct acting, spring-loaded manual pressure-setting adjustment, and rated for 250-psig inlet pressure, unless otherwise indicated.
 1. Type: Pilot operated.
- C. Air-Line Pressure Regulators: Diaphragm or pilot operated, bronze body, direct acting, spring-loaded manual pressure-setting adjustment, and rated for 200-psig minimum inlet pressure, unless otherwise indicated.
- D. Air-Line Pressure Regulators: Diaphragm operated, aluminum alloy or plastic body, direct acting, spring-loaded manual pressure-setting adjustment, and rated for 200-psig minimum inlet pressure, unless otherwise indicated.
- E. Automatic Drain Valves: Stainless-steel body and internal parts, rated for 200-psig minimum working pressure, capable of automatic discharge of collected condensate. Include mounting bracket if wall mounting.

- F. Mechanical Filters: Two-stage, mechanical-separation-type, air-line filters. Equip with deflector plates, resin-impregnated-ribbon-type filters with edge filtration and drain cock. Include mounting bracket if wall mounting.

2.6 QUICK COUPLINGS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Aeroquip Corporation.
 - 2. Bowes Manufacturing Inc.
 - 3. Foster Manufacturing, Inc.
 - 4. Milton Industries, Inc.
 - 5. Parker Hannifin Corp.
 - 6. TOMCO Products Inc.
 - 7. Tuthill Corporation.
- 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: Flow-sensor-bleeder, check-valve type with barbed outlet for attaching hose.
- D. Valveless Quick Couplings: Straight-through brass body with stainless-steel or nickel-plated-steel operating parts.
 - 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.

2.7 HOSE ASSEMBLIES

- A. Description: Compatible hose, clamps, couplings, and splicers suitable for compressed-air service, of nominal diameter indicated, and rated for 300-psig minimum working pressure, unless otherwise indicated.
 - 1. Hose: Reinforced single- or double-wire-braid, CR-covered hose for compressed-air service.
 - 2. Hose Clamps: Stainless-steel clamps or bands.
 - 3. Hose Couplings: Two-piece, straight-through, threaded brass or stainless-steel O-ring or gasket-seal swivel coupling with barbed ends for connecting two sections of hose.
 - 4. Hose Splicers: One-piece, straight-through brass or stainless-steel fitting with barbed ends for connecting two sections of hose.

PART 3 - EXECUTION

3.1 PIPING APPLICATIONS

- A. Low-Pressure Compressed-Air Distribution Piping: Use one of the following piping materials for each size range:
 - 1. NPS 2 and Smaller: Schedule 40, black-steel pipe; threaded, malleable-iron fittings; and threaded joints.
 - 2. NPS 2 and Smaller: Type K or L, copper tube; wrought-copper fittings; and brazed joints.
- B. Drain Piping: Use the following piping materials:
 - 1. NPS 2 and Smaller: Type M copper tube; wrought-copper fittings; and brazed or soldered joints.

3.2 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. Equipment and Specialty Flanged Connections:
 - 1. Use steel companion flange with gasket for connection to steel pipe.
 - 2. Use cast-copper-alloy companion flange with gasket and brazed joint for connection to copper tube. Do not use soldered joints for connection to air compressors or to equipment or machines producing shock or vibration.
- I. Install eccentric reducers where compressed-air piping is reduced in direction of flow, with bottoms of both pipes and reducer fitting flush.

- J. 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.
- K. Install piping to permit valve servicing.
- L. Install piping free of sags and bends.
- M. Install fittings for changes in direction and branch connections.
- N. 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."
- O. Install sleeve seals for piping penetrations of concrete walls and slabs. Comply with requirements for sleeve seals specified in Section 220517 "Sleeves and Sleeve Seals for Plumbing Piping."
- P. Install escutcheons for piping penetrations of walls, ceilings, and floors. Comply with requirements for escutcheons specified in Section 220518 "Escutcheons for Plumbing Piping."

3.3 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 inside and outside of pipe and fittings before assembly.
- C. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
 - 1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
 - 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- D. Welded Joints for Steel Piping: Join according to AWS D10.12/D10.12M.
- E. Brazed Joints for Copper Tubing: Join according to AWS's "Brazing Handbook," "Pipe and Tube" Chapter.
- F. Extruded-Tee Outlets for Copper Tubing: Form branches according to ASTM F 2014, with tools recommended by procedure manufacturer, and using operators qualified according to Part 1 "Quality Assurance" Article.
- G. Dissimilar Metal Piping Material Joints: Use dielectric fittings.

3.4 VALVE INSTALLATION

- A. Install shutoff valves and unions or flanged joints at compressed-air piping to air compressors.

- B. Install shutoff valve at inlet to each automatic drain valve, filter, lubricator, and pressure regulator.
- C. Install check valves to maintain correct direction of compressed-air flow to and from compressed-air piping specialties and equipment.

3.5 DIELECTRIC FITTING INSTALLATION

- A. Install dielectric fittings in piping at connections of dissimilar metal piping and tubing.
- B. NPS 2 and Smaller: Use dielectric unions.

3.6 FLEXIBLE PIPE CONNECTOR INSTALLATION

- A. Install flexible pipe connectors in discharge piping and in inlet air piping from remote air-inlet filter of each air compressor.
- B. Install bronze-hose flexible pipe connectors in copper compressed-air tubing.
- C. Install stainless-steel-hose flexible pipe connectors in steel compressed-air piping.

3.7 SPECIALTY INSTALLATION

- A. Install safety valves on receivers in quantity and size to relieve at least the capacity of connected air compressors.
- B. Install air-main pressure regulators in compressed-air piping at or near air compressors.
- C. Install air-line pressure regulators in branch piping to equipment and tools.
- D. Install automatic drain valves on aftercoolers, receivers, and dryers. Discharge condensate onto nearest floor drain.
- E. Install quick couplings at piping terminals for hose connections.
- F. Install hose assemblies at hose connections.

3.8 CONNECTIONS

- A. Install unions, in piping NPS 2 and smaller, adjacent to each valve and at final connection to each piece of equipment and machine.

3.9 HANGER AND SUPPORT INSTALLATION

- A. Comply with requirements in Section 220548 "Vibration and Seismic Controls for Plumbing Piping and Equipment" for seismic-restraint devices.

- B. Comply with requirements in Section 220529 "Hangers and Supports for Plumbing Piping and Equipment" for pipe hanger and support devices.
- C. Vertical Piping: MSS Type 8 or 42, clamps.
- D. Individual, Straight, Horizontal Piping Runs:
 - 1. 100 Feet or Less: MSS Type 1, adjustable, steel clevis hangers.
 - 2. Longer Than 100 Feet: MSS Type 43, adjustable roller hangers.
- E. Multiple, Straight, Horizontal Piping Runs 100 Feet or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.
- F. Base of Vertical Piping: MSS Type 52, spring hangers.
- G. Support horizontal piping within 12 inches of each fitting and coupling.
- H. Rod diameter may be reduced 1 size for double-rod hangers, with 3/8-inch minimum rods.
- I. 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: 96 inches with 3/8-inch rod.
 - 2. NPS 3/4 to NPS 1-1/4: 84 inches with 3/8-inch rod.
 - 3. NPS 1-1/2: 12 feet with 3/8-inch rod.
 - 4. NPS 2: 13 feet with 3/8-inch rod.
- J. Install supports for vertical, Schedule 40, steel piping every 15 feet.
- K. Install hangers for copper tubing with the following maximum horizontal spacing and minimum rod diameters:
 - 1. NPS 1/4: 60 inches with 3/8-inch rod.
 - 2. NPS 3/8 and NPS 1/2: 72 inches with 3/8-inch rod.
 - 3. NPS 3/4: 84 inches with 3/8-inch rod.
 - 4. NPS 1: 96 inches with 3/8-inch rod.
 - 5. NPS 1-1/4: 108 inches with 3/8-inch rod.
 - 6. NPS 1-1/2: 10 feet with 3/8-inch rod.
 - 7. NPS 2: 11 feet with 3/8-inch rod.
- L. Install supports for vertical copper tubing every 10 feet.

3.10 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."

3.11 FIELD QUALITY CONTROL

A. Perform field tests and inspections.

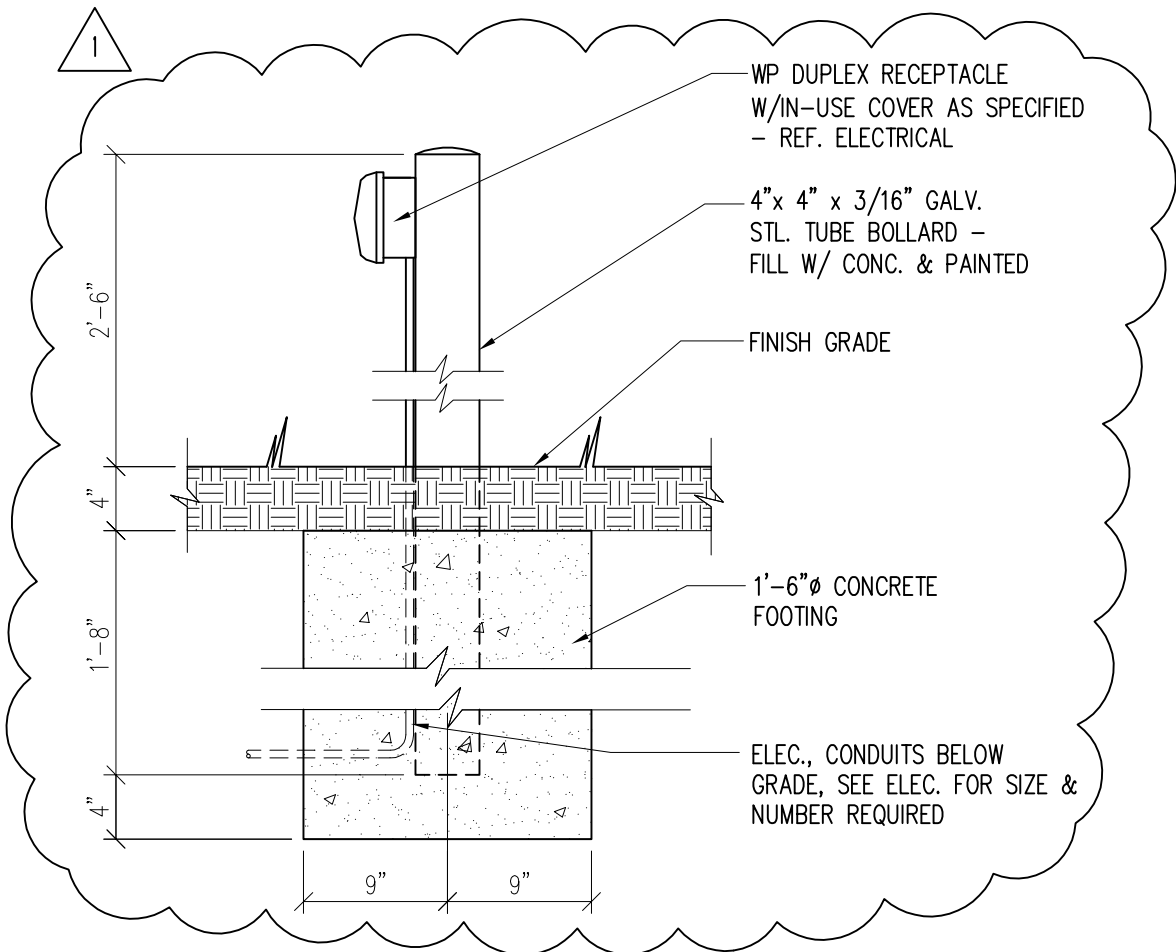
B. Tests and Inspections:

1. Piping Leak Tests for Metal Compressed-Air Piping: 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 above system operating pressure, but not less than 150 psig. 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.
3. Inspect filters and pressure regulators for proper operation.

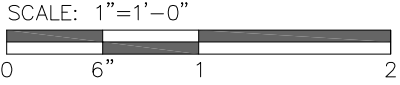
C. Prepare test reports.

END OF SECTION 221513

\\SERVER08\jobfiles\2018\18002 MSU Facilities Services Complex\Drawings\SP201 MSU FC - SITE DETAILS.dwg, SP201.1 AD1, 1/14/2019 12:18:08 PM



10 STEEL BOLLARD DETAIL



 01-14-19 REVISION PER ADDENDUM NO. 1

Copyright 2019 BYSParchitects

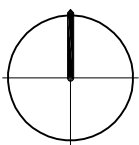
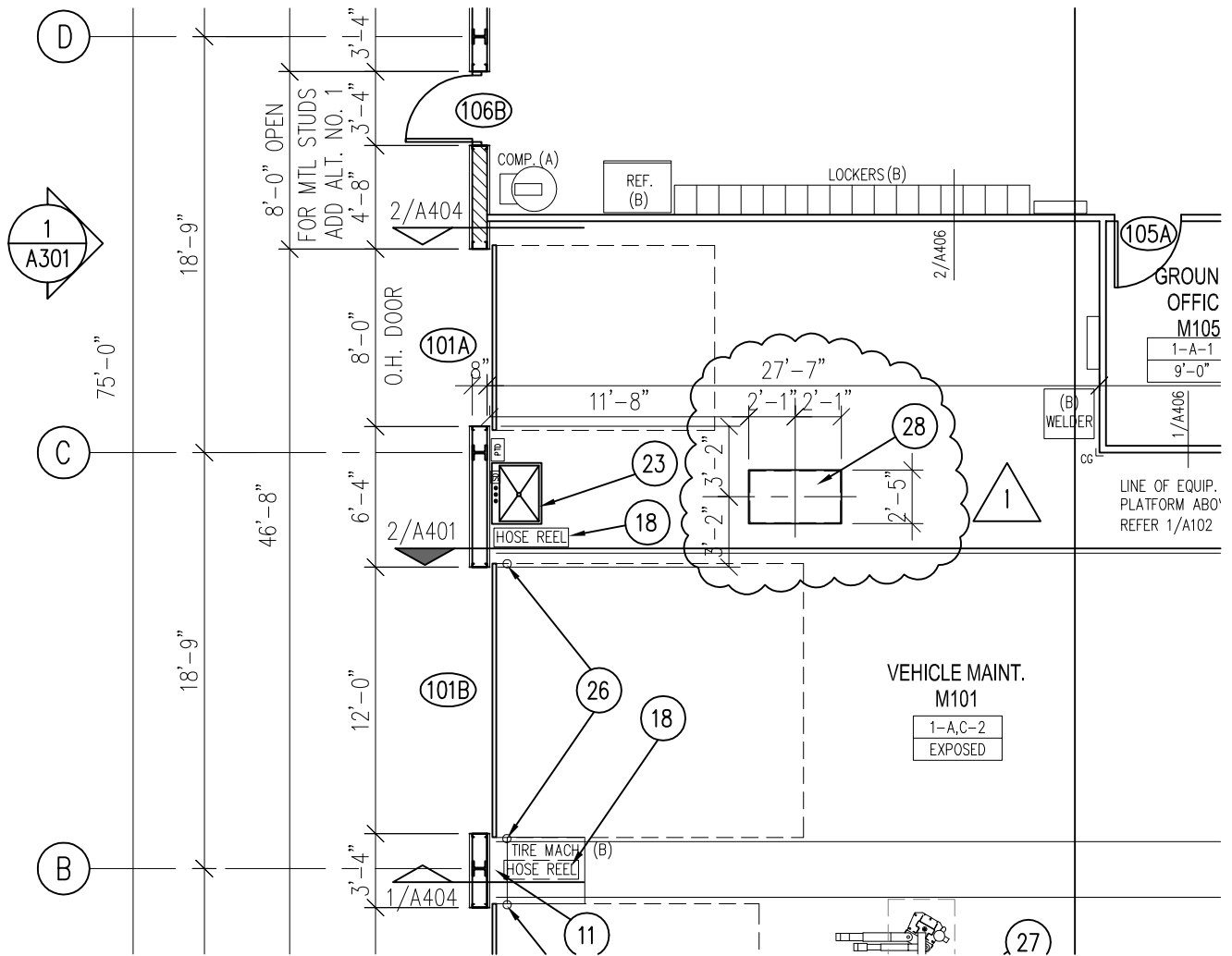
BYSParchitects

1005 Ninth Street - Suite 200 Wichita Falls, Texas 76301 (940) 761-2404
Member American Institute of Architects

NEW FACILITIES SERVICES
MAINTENANCE BUILDING
MIDWESTERN STATE UNIVERSITY
WICHITA FALLS, TEXAS

PROJ. NO. 18002
DATE 01/14/19
DRAWING NO. SP201.1
ISSUED ADD. NO. 1

\SERVER08\jobs\2018\18002 MSU Facilities Services Complex\Drawings\A101 MSU FC - FLOOR PLAN.dwg, A101.1 AD1, 1/14/2019 12:16:20 PM



1 PARTIAL - FLOOR PLAN

SCALE: 1/8" = 1'-0" (1/16" on 11x17)



01-14-19 REVISION PER ADDENDUM NO. 1

Copyright 2019 BYSParchitects

BYSParchitects

1005 Ninth Street - Suite 200 Wichita Falls, Texas 76701 (940) 761-2404
 Member American Institute of Architects

NEW FACILITIES SERVICES
 MAINTENANCE BUILDING
 MIDWESTERN STATE UNIVERSITY
 WICHITA FALLS, TEXAS

PROJ. NO. 18002
 DATE 01/14/19
 DRAWING NO. A101.1
 ISSUED ADD. NO. 1

BYSParchitects

RFP#735-19-8212

Facilities Services New Maintenance Building

Questions from Vendors

January 7, 2019

1. I am contacting you today to ask for the project's estimated budget/cost if available. Bids are due on January 24 at 2:00 PM.
Response: (KO) Construction Cost Limit is at most \$2.046 MM.

2. Wood Fences
 - a. Using a 15-degree ring shank are you requiring an Electro-Galv or Stainless Collated nail?
Response: Stainless Collated Nails
 - b. Thickness of 1x8 Red Cedar Board and Batten Planks?
Response: Refer Addendum #1
 - c. Thickness of 1x6 Red Cedar Board and Batten Planks?
Response: Refer Addendum #1
 - d. Stain Color? Product?
Response: Refer Addendum #1
 - e. 2.5" Galv. Metal Pole Schedule pipe 6' Fence? 8' Fence Add Alternate?
Response: Refer Addendum #1

3. Spray Foam Insulation
 - a. Is Intumescent coating required or 15-minute fire rated paint?
Response: To Be Determined, will include in Addendum No. 2
 - b. Or, Flat White Latex to seal from UV Exposure / Non-Fire rated?
Response: Same as above

4. Please send via email a bidders/plan holders list for this project, and can you please confirm if the bid date remains the same. If you unable to email the bidders/plan holders list, it can also be faxed.
Response: BYSP does not have a plan holders or GC list currently. We will start to develop a list at Pre-Bid meeting.

5. I noticed that in the specs for this project, there are two sections with the title of "Miscellaneous Specialties".
Are both sections required? There were a few items in one of the sections (109000 Miscellaneous Building Specialties) that did not seem applicable to this project.
Response: Refer Addendum #1

BYSParchitects

Questions from Vendors

January 8, 2019

6. One of our subcontractors notified us that their salesman informed them that the Specified Airtight OC is no longer available. Airtight OC has not been around for approximately 10 years or discontinued. Appendix X is a 4min 12sec field test, 15min rating can only be achieved by DC-315 paint if left exposed. Will the attached product SWD QS-108YM TDS be an approved equal to use?

Response: Refer Addendum #1

7. Are there specifications for the compressed air piping?

Response: Refer Addendum #1

8. Is there any ducted return air for offices M103, M105, M118 and M117?

Response: To be addressed in Addendum #2

9. What is the duct liner thickness for the exposed supply air duct in shop areas? (1.5"?)

Response: To be addressed in Addendum #2

10. Is there a fire suppression sprinkler in the base bid? Or only as alternate #5.

Response: Nothing in the base bid, the full Fire Suppression system is included in Additive Alternate #5

11. Do you have pictures of the welding hood table, hood and exhaust tube assembly, that shows on M201 to be relocated? Or can we have a look at what we are relocating.

Response: It has been decided that the welding table, hood and exhaust tube will not be moved or included in the new building. We will remove these item from the scope of work via addendum #2

January 9, 2019

12. Mechanical – Furnace spec state that thermostats are to be provided by Alerton with a control system. Is this something the owner is providing? There are no control system specs.

Response: To be addressed in Addendum #2

Questions from Vendors

January 10, 2019

13. Please clarify completion date for this project. During the pre-bid meeting a statement was made regarding a completion date after August 1, 2020 due to funding availability.

Response: (KO) The completion date should be April 1, 2020 at the latest. The project cannot be completed prior to August 21, 2019 due to internal funding issues.

BYSParchitects

14. Does the owner pay costs for soils and concrete testing?

Response: (KO) Yes.

15. Specification 083613 Sectional Doors lists OHD 422 Series as a basis of design. Reportedly, this model will not meet the Air Infiltration specification noted in paragraph 2.2.C. Please provide clarification.

Response: Refer Addendum #1

16. Does this project have prevailing wage requirements?

Response: (TN) Yes, per Uniform General Conditions for Construction Standards, Texas Gov't Code, Chapter 2258. Link is on page 9 of bid.

17. Sheet M401 has a note that notes a delegated design for fuel oils systems and equipment. During the pre-bid meeting a statement was made of relocating existing equipment. Please clarify scope.

Response: (KO) I would expect our existing pumps to be relocated. This item will be clarified in Addendum #2

18. Please clarify contractor scope regarding relocated equipment.

Response: (KO) Contractor to disassemble it as necessary, move it to the new building, reinstall it, and ensure it operates in a similar manner prior to it being relocated. Refer Addendum #1 for list of items.

19. Specification 10400 mentions "MSUTX standard sign package". Please provide clarification.

Response: Refer Addendum #1

20. Please provide clarification for installation detail at golf cart charging stations.

Response: Refer Addendum #1

21. Are the lockers shown in CORR M109 the only ones that require a concrete base?

Response: Yes, remaining lockers will not require wood or concrete bases.

22. Does keynote 21 apply to this project?

Response: Key note 21 on sheet A101 would refer to the 3 sets of lockers in the shops. These units will be relocated by the owner and are not included in this contract.

23. Does the exposed steel structure paint?

Response: The exposed steel columns (or rigid frames will paint up the knuckle (approx. 13' AFF) per key note 11 on A101. All exposed structure above that point including all roof framing will be left unpainted with only the primed finished from the PEMB manufacturer.

BYSParchitects

Questions from Vendors

January 11, 2019

24. I see a fire alarm specification, but a fire alarm is not required for the building occupancy classification. The fire suppression system as an alternate would also lead to two different fire alarm designs. Do they want a fire alarm?

Response: To be addressed in Addendum #2

25. Is an outside Main Electrical Safety Switch for the power company going to be required for the electrical service on this Building?

Response: To be addressed in Addendum #2

26. Paving Note 3. on Sheet C6, Paving Plan, of the drawings references "Geotechnical Report Prepared by Terradyne, Project No. D181061". I've not been able to find a copy of this report anywhere in the solicitation. Am I overlooking the report or if it's not present can you tell me how I might get a copy of the report?

Response: Refer Addendum #1