ADDENDUM NUMBER 1

MILWAUKEE PUBLIC MUSEUM
ELECTRICAL DISTRIBUTION REPLACEMENT
Site #275, Bldg. #60
800 West Wells Street
Milwaukee, WI 53233

Project Number: M003-15418

Notice Number: 7093

Date of Addendum: April 21, 2016

This Addendum to the Contract Documents is issued to modify, explain or correct the original documents, dated November 16, 2015, and is hereby made part of the Contract Documents. Acknowledge receipt of this Addendum in the space provided on the Bid Form, or bid may be rejected.

PROJECT SPECIFICATIONS

MODIFY Technical Specifications as follows:

Section 26 12 16 – Substation Transformers

1. Part 2.1, Parag. A – ADD:
   4. Olsun Electrics
   5. Federal Pacific
   6. MGM
   7. ABB
2. Part 2.2, Parag. A – REVISE: side mounted primary to "top-mounted primary".
3. Part 2.2, Parag. B – REVISE: close coupling to an air terminal chamber section to be shipped separately for reassembly to "top entry conduit".
4. Part 2.2, Parag. D – REVISE: USS01 and USS02 to "T/L1 and T/L2".
5. Part 2.2, Parag. D – REVISE: temperature rise of 150°C to "temperature rise of 115°C".
6. Part 2.2, Parag. D – REVISE: 750/1000KVA AA/FFA to "750/1000KVA AA/FA".
7. Part 2.2, Parag. E – REVISE: USS03 and USS04 to "T/P1 and T/P2".
8. Part 2.2, Parag. E – REVISE: temperature rise of 150°C to "temperature rise of 115°C".
9. Part 2.2, Parag. E – REVISE: 1000/1333KVA AA/FFA to "1250/1663KVA AA/FA".
10. Part 2.2, Parag. F – REVISE: 60KV to "95KV" Primary BIL.

Section 26 24 13 – Secondary Distribution Switchboard

1. Part 2.1, Parag. A – ADD:
   4. Siemens
2. Part 2.2, Parag. C.1. – REVISE: MSB1 and MSB2 to "USS/P1 and USS/P2".
3. Part 2.2, Parag. C.2. – REVISE: MSB3 and MSB4 to "USS/L1 and USS/L2".
4. Part 2.2, Parag. D.1. – REVISE: MSB1 and MSB2 1600A to "USS/P1 and USS/P2 2000A".
5. Part 2.2, Parag. D.2. – REVISE: MSB3 and MSB4 to "USS/L1 and USS/L2".
6. Part 2.5 – REMOVE: Omit section 2.5 A., B., and C.
7. Part 2.8 – REMOVE: Omit section 2.8 A., B.
8. Part 2.9 – REMOVE: Omit section 2.9 A.
9. Part 3.2 – REMOVE: Omit section 3.2 D., E.

Section 26 25 00 – Enclosed Bus Assemblies

1. Entire Section – ADD: Entire section attached to and issued as part of this Addendum 1.

DRAWINGS

MODIFY Project Drawings as follows:

Sheet E14 – Electrical Single Line Diagram - New

1. REVISE: Omit ground fault protection on USS/L main circuit breakers.

End of Addendum No. 1

SECTION 26 25 00 - ENCLOSED BUS ASSEMBLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Busways and fittings.

1.3 SUBMITTALS

A. General: Submit Bill of Materials List and the following according to the Conditions of the Contract and Division 1 Specification Sections.

B. Product data for each component. Include electrical ratings, dimensions, mounting position, mounting method, vertical supports, materials, fire stops, and weather stops.

C. Shop drawings detailing fabrication and installation of busways, including plans, elevations, sections, details of components, and attachments to other construction elements. Detail connections to switchgear, switchboards, transformers, and panelboards. Detail supports and connections to building.

D. Coordination drawings, including floor plans and sections drawn to accurate scale. Submit with shop drawings. Show busway layout and relationships between components and adjacent structural and mechanical elements. Show support locations, type of support, and weight on each support. Indicate and certify field measurements.

E. Qualification data for firms and persons specified in the "Quality Assurance" article to demonstrate their capabilities and experience. Include a list of completed projects with project names, addresses, names of Architects and Owners, and other information specified.

F. Field test reports indicating and interpreting test results relative to compliance with specified requirements.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: In addition to the requirements specified in Division 1 Section "Quality Control Services", an independent testing agency shall meet OSHA criteria for accreditation of testing laboratories, Title 29, Part 1907, or shall be a Full Member company of the International Electrical Testing Association.

1. Testing Agency's Field Supervision: Person currently certified by the International Electrical Testing Association or National Institute for Certification in Engineering Technologies to supervise the on-site testing specified in Part 3.

B. Comply with NFPA 70 "National Electrical Code" for components and installation.

C. Listing and Labeling: Provide products specified in this Section that are listed and labeled.

1. The Terms "Listed" and "Labeled": As defined in the "National Electrical Code", Article 100.

2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" (NRTL) as defined in OSHA Regulation 1910.7.

D. Single-Source Responsibility: All busway components shall be the product of a single manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle according to NEMA BU 1.1.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify existing dimensions by field measurements. Verify clearances and locate obstructions within manufacturing and installation tolerances of busway.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering busways that may be incorporated in the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide busways by one of the following:

1. Square D Company
2. General Electric Company
3. Cutler Hammer/ Eaton
4. Siemens

2.2 BUSWAY

A. Feeder Busway: NEMA BU 1, low-impedance busway in nonventilated housing, single-bolt joints, ratings as indicated and specified.

1. Voltage: 208/120 volts, 3-phase, 4-wire, 50% ground bus.

2. Voltage: 480/277 volts, 3-phase, 4-wire, 50% ground bus.

3. Short-Circuit Withstand: 150,000 symmetrical rms amperes.

4. Temperature Rise: 55 deg C above 40 deg C ambient maximum.

5. Bus Materials: Current-carrying copper conductors, fully insulated with Class 130C insulation except at stabs and joints; plated surface at stabs and joints.

6. Ground Bus: Copper.

7. Enclosure: Steel with manufacturer's standard enamel finish.

8. Fittings and Accessories: Manufacturer's standard elbows, equipment terminations, firestops, expansion fittings, spring-mounted vertical riser supports, rigid floor supports, horizontal hangers, tap fittings, and flange fittings.

PART3 - EXECUTION

3.1 INSTALLATION

A. Install busway level and plumb, according to manufacturer's written instructions, shop drawings, and referenced standards.

B. Support busway independently from supports for other elements such as pipe, conduit, ceilings, and ducts.

1. Design each fastener and support to carry 200 pounds (90 kg) or 4 times the supported weight of the busway, whichever is greater.

2. Support busway with not less than 3/8-inch (10-mm) steel rods. Install side bracing to prevent swaying or movement of busway. Modify supports after completion to eliminate strains and stresses on bus bars and housings.

3. Fasten supports securely to building structure according to Division 26 Section "Hangers and Supports for Electrical Systems."

4. Support busway independently from equipment enclosure at connections to panelboards and switchboards.

C. Install expansion fittings at locations where busway crosses building expansion joints with no more than 90 percent of the manufacturer's recommended distance between fittings.

D. Install firestop fittings where busway penetrates fire-rated elements such as walls, floors, and ceilings. Seal around penetration according to Division 7 Section "Firestopping" to satisfy authority having jurisdiction.

E. Install appropriate weather seal fitting and flange where busway penetrates exterior elements such as wall or roof. Seal around openings to make weathertight.

F. Install 3-inch- (75-mm-) high minimum concrete curb around busway floor penetrations.

G. Coordinate busway terminations to equipment enclosures to ensure proper phasing, connection, and closure.

H. Tighten busway joints with torque wrench or similar tool recommended by busway manufacturer. Retighten joints after busways have been energized for 30 days.

I. Connect busway and components to wiring system and to ground as indicated and instructed by manufacturer. Tighten connectors and terminals, including screws and bolts, according to equipment manufacturer's published torque tightening values for equipment connectors. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals according to tightening torques specified in UL Standard 486A.

3.2 FIELD QUALITY CONTROL

A. Testing: After installing busway and after electrical circuitry has been energized, demonstrate product capability and compliance with requirements.

1. Procedures: Perform each visual and mechanical inspection and electrical test stated in NETA Standard ATS, Section 7.4. Investigate any insulation resistance reading less than 100 megohms divided by busway length in feet (30 megohms divided by busway length in meters). Certify compliance with test parameters.

B. Remove and replace malfunctioning units with new units, and retest.

3.3 ADJUSTING

A. Align busway runs vertically and horizontally to eliminate sags and twists. Provide additional stiffeners if required to restrict excessive movement.

3.4 CLEANING

A. After completing system installation, including outlet fittings and devices, inspect exposed finish. Remove burrs, dirt, and construction debris, and repair damaged finishes including chips, scratches, and abrasions.

3.5 COMMISSIONING

A. Infrared Scanning: Two months after Substantial Completion, perform an infrared scan of busway including joints.

1. Use an infrared scanning device designed to measure temperature or detect significant deviations from normal values. Provide documentation of device calibration.

2. Prepare a certified report identifying busway checked and describing results of scanning. Include notation of deficiencies detected, remedial action taken, and rescanning observations after remedial action.

3.6 DEMONSTRATION

A. Train Owner's maintenance personnel on procedures and schedules for startup and shutdown, troubleshooting, servicing, and preventive maintenance.

B. Review data in the "Operating and Maintenance Manual." Refer to Division 1 Section "Project Closeout."

C. Schedule training with Owner through the Architect, with at least 7 days' advance notice.

3.7 PROTECTION

A. Provide final protection and maintain conditions in a manner acceptable to Manufacturer and Installer to ensure that moisture does not enter busway prior to Substantial Completion.

END OF SECTION