ADDENDUM NUMBER 1

MILWAUKEE COUNTY TRANSIT SYSTEM
FOND DU LAC AVENUE TRANSIT CENTER
FIRE ALARM SYSTEM REPLACEMENT
Site #210
3201 West Fond Du Lac Avenue
Milwaukee, WI

Project Number: T052-13420

Date of Addendum: August 2, 2013

This Addendum to the Contract Documents is issued to modify, explain or correct the original documents, dated June 17, 2013, 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.

SPECIFICATIONS

1. SECTION 28 31 00 FIRE ALARM SYSTEMS:
On page 28 31 00-12; PART 2 Products, 2.1 ACCEPTABLE MANUFACTURERS, E.
Add Siemens as an acceptable manufacture.

2. SECTION 26 05 19 WIRE AND CABLE – 600V AND BELOW
On page 28 05 19-3 Add Section 2.5, 2.6 and 2.7

2.5 FIBER OPTIC BACKBONE CABLE

A. General:
1. All optical fibers shall be sufficiently free of surface imperfections and inclusions to meet the optical, mechanical, and environmental requirements of this specification. Factory optical fiber splices are not allowed.
2. All fibers shall have been subjected to a minimum tensile proof test by the fiber manufacturer equivalent to 100-kpsi.
3. All fibers in each cable shall be guaranteed to meet the stated specifications.
4. All fibers runs that go from room to room or other floors shall be installed in Innerduct.
5. Provide a minimum 10 feet of slack on each end of fiber backbone. Slack shall be neatly stored in a figure eight configuration.
6. All fibers will be terminated on patch panels in the respective IDF or MDF.

B. <u>Single Mode Optical Fibers Fiber:</u>
1. Single-mode fibers shall be OS1 meet or exceed the ISO/IEC 11802:2002, TIA/EIA-568-B.3, TIA-492CAAB standards.
2. Color: Yellow
3. Plenum rated as required by installation.
4. Indoor / Outdoor rating as required by installation.

2.6 FIBER OPTIC PATCH PANEL

A. Fiber Optic Patch panel shall wall mounted.

B. All terminated fibers shall be mated to SC. Couplers shall be mounted in the panel to establish a "cross-over" using straight through duplex jumpers at all locations. The proposed enclosure shall be designed to accommodate a changing variety of connector types.

C. Each fiber cabling segment shall be installed such that odd numbered fibers are Position A at one end and Position B at the other end while the even numbered fibers are Position B at one end and Position A at the other end. See TIA/EIA-568-B.1, section 10.3.2 for further details and diagrams.

D. The patch panel enclosure shall be sized to accommodate the total fiber count to be installed at each location as defined in the specifications and drawings. Connector panels and connector couplings (sleeves, bulkheads, etc.) adequate to accommodate the number of fibers to be terminated shall be furnished and installed by the contractor.

E. Patch panels shall be enclosed assemblies affording protection to the cable subassemblies and to the terminated ends. The enclosures shall incorporate a hinged or retractable front cover designed to protect the connector couplings and fiber optic jumpers.

F. The patch panels enclosure shall provide for strain relief of incoming cables and shall incorporate radius control mechanisms to limit bending of the fiber to the manufacturers recommend minimums or 1.2", whichever is larger.

G. All Patch Panels shall provide protection to both the "facilities" and "user" side of the coupling. The patch panel enclosure shall be configured to require front access only when patching. The incoming cables (e.g. Backbone, Riser, etc.) shall not be accessible from the patching area of the panel. The enclosure shall provide a physical barrier to access of such cables.

2.7 INNERDUCT

A. Innerduct shall be 1" flexible non-metallic tubing with a nylon pull string.

B. Innerduct shall be riser rated or plenum rated as required by the installation environment.

C. Innerduct shall be supported as required by the standards.

3. SECTION 26 05 19 WIRE AND CABLE – 600V AND BELOW
On page 28 05 19-5 Add Section 3.8

3.8 TESTING

A. Fiber Optic Cable:
   1. All fiber strands shall be terminated and tested by the cable contractor.
   2. All fiber cable shall be installed in innerduct.
   3. Innerduct or conduit shall be of the proper size to maintain fill ratio requirement of the TIA/EIA-568-B and the TIA/EIA-569-A.

4. Where cable tray is not available, the contractor shall be responsible for providing and installing J-hooks every 48 to 60 inches to adequately support the innerduct. The J-hooks being used to support the fiber shall not be used to support any other media.
5. Fiber is to be terminated on both ends with LC connectors using the one of the methods stated in this specification.
6. Fiber shall not exceed a loss of .5dB per mated pair.
7. There shall be no less than 1 (one) meter of slack stored in the fiber enclosures at each end of the terminated fiber cable.
8. Contractor shall insure that all of the material being installed on this project shall be of the proper rating required for the pathways and spaces (i.e. Plenum or Riser) by local, state, and federal Codes.

B. All fiber, Multimode and Single-mode, shall be tested in both directions at both wavelengths as stated in the testing standards stated in this specification. Any fiber not passing 100% shall be replaced at contractor's expense.

DRAWINGS

1. EL – Symbols, Abbreviations and General Notes:
Add note #20.
FIRE ALARM CONTROL AND NAC PANELS SHALL RECEIVE A 120VAC, 20 AMP CIRCUIT FROM THE NEAREST AVAILABLE PANELBOARD. BREAKER SHALL BE PROPERLY IDENTIFIED.

2. E100 - Electrical Site Plan
Replace general note #1 with the following text:
PROVIDE 12 STRANDS, INDOOR/OUTDOOR RATED SINGLE MODE FIBER FROM MAINTENANCE BUILDING TO SERVICE BUILDING. IN ADDITION, PROVIDE 6 STRANDS OF SINGLE MODE FIBER TO EACH OF THE OTHER FACP LOCATIONS FROM THE SERVICE BUILDING FIBER TERMINATION POINT. FACP LOCATION SHALL BE EQUIPPED WITH TVSS AND A FIBER DRIVER FOR FIBER TERMINATION TO THE PANEL. TERMINATE FIBER IN WALL-MOUNTED PATCH PANELS USING SC CONNECTORS NEAR FACP. ELECTRICAL CONTRACTOR TO PROVIDE FIBER PATCH CABLES. FIBER WITHIN THE BUILDINGS MAY BE ROUTED IN INNERDUCT. REFER TO SPECIFICATION SECTION 26 05 19-2.5, 2.6, 2.7 AND 3.8.

Add additional text to general note #3:
PROVIDE NEW POURED CONCRETE SLAB (AS BUILT DRAWINGS INDICATED 12" SLAB) TO MATCH EXISTING SLAB BUT NOT LESS THAN 7". REINFORCE WITH WWF 6X6-W2.9XW2.9 LOCATED IN UPPER THIRD OF SLAB. PROVIDE #5 X 1'-4" DOWELS SPACED AT 16"O.C. DRILL AND EPOXY DOWELS 8" INTO EXISTING SLAB AT MID-DEPTH. PROVIDE CONCRETE WITH FC'=4000 PSI AND 6% AIR ENTRAINMENT. PROVIDE 6" MINIMUM COMPACTED GRANULAR FILL COMPACTED TO 95% MODIFIED PROCTOR. PROVIDE CONTROL JOINTS IN LOCATIONS TO MATCH EXISTING. AS BUILT DRAWINGS INDICATE THAT THERE IS EXISTING STORM SEWER PIPING BELOW (APPROX. 6').

3. E500 – Bus Storage Buildings Plan
Delete Fire Alarm control panel and smoke detector in Storage Building #6. Circuits to new fire alarm devices in this building shall be fed from the Service Building.

End of Addendum No. 1