# SECTION 27 0502 – REQUIRED SUBMITTALS FOR COMMUNICATIONS

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Required submittals of contractor qualifications, references, certifications, registrations, cut-sheets, shop drawings, etc. in a timely manner and submit through the Construction Manager, Architect, Owner and/or Associate for review and approval prior to the start of work or installation as indicated on the drawings, specified or as otherwise required.

B. Submittals shall be prepared as four (4) groups as follows:

1. Post-Bid/Pre-Contract

2. Post-Contract/Pre-Construction

3. Under Construction

4. Closeout

1.02 RELATED SECTIONS

A. The General Conditions, Supplementary Conditions, Instruction to Bidders and all applicable portions of Division 01 – General Requirements apply to the work of this section. Contractor is held to have familiarized himself with these provisions contained therein.

 B. Section 01 7000 – Execution and Closeout Requirements.

PART 2 – Not Used

PART 3 – EXECUTION

3.01 POST-BID/PRE-CONTRACT SUBMITTALS

A. Provide the following submittals within three (3) working days of receipt of “Notice of Intent to Award”.

1. Primary Contractor identification of proposed Subcontractors:

a. Statement of division of responsibility and work by Contractor and/or trades, and acknowledgement of the authority and responsibilities of the registered, certified professional of record.

2. Contractor’s Registered Communications Distribution Designer (RCDD) certification and resume:

3. Contractor Resume:

a. Copy of Contractor resume documenting a minimum of five (5) years’ experience in the data/communication, with a minimum of three (3) similar sized projects in the past three (3) years.

4. Contractor’s Project Foreman certification and resume:

a. Copy of Project Foreman’s name and resume.

b. Copy of Project Foreman’s current registered installer/technician certificate or approved equal qualification certification.

5. Complete documentation regarding the manufacturer’s warranty and guarantee shall be submitted with (5) working days after the bid opening. This shall include but not be limited to:

a. A sample of the current Hubbell/Superior Essex Warranty that will be provided to the Owner upon installation completion and acceptance, and shall document the support procedures for warranty issues.

b. A systems application assurance manual documenting Hubbell/Superior Essex, supported applications and application guidelines shall be provided as a part of the submittal.

c. Hubbell/Superior Essex shall provide a “Letter of Intent” to the Owner stating Hubbell/Superior Essex’s intent to maintain the Contractor as a registered and certified Hubbell/Superior Essex installer, authorized to support and maintain the installation for the duration of the warranty period.

6. Letter of Intent from the Contractor to the cable manufacturer, connectivity manufacturer and the distributor to indicate the Contractor’s intent to register and certify the completed project under the manufacturer’s warranty program.

B. Provide the following submittals within ten (10) working days of receipt of “Notice of Intent” to award:

1. Contractor Reference Questionnaire Forms, currently completed, signed and dated for the project, from three (3) reference clients for projects of similar size and complexity completed within the past three (3) years.

a. Contractor Reference Questionnaires shall have been completed, signed and dated within the past twelve (12) months. Questionnaires “On-File” in excess of twelve (12) months will not be acceptable.

C. Ten (10) working days shall be allocated for the review and confirmation of Contractor qualifications by the Associate.

3.02 POST-CONTRACT/PRE-CONSTRUCTION SUBMITTALS

A. Provide the following submittals within ten (10) working days of the award of contract, or otherwise specified below:

B. Material List:

1. The successful Contractor shall upon award of the Contract, submit a material list for approval to include but not be limited to the following items as applicable per project requirements.

a. Cables

b. Connectors

c. Adapter/Couplers

d. Patch Panels

e. Cross-Connect Blocks

f. Cable Tray/Accessories

g. Ladder Rack/Accessories

h. J-Hooks/Hangers

i. Conduit/Accessories

j. Wireway/Accessories

k. Cable Management

l. Cable Organizers

m. Dropouts

n. Spill Ways

o. Faceplates

p. Labels/Nameplates

q. 106/104 Frames

r. Outlet Boxes/Devices

s. Surface Raceway/Accessories

t. Box Eliminators

u. Ties and Wraps

v. Entrance Protection

w. Surge Protection

x. Enclosures/Cabinets

y. Equipment Racks/Accessories

z. Grounding/Bonding Devices

aa. Anchoring/Mounting Hardware

ab. Cross-Connect Frames/Fields

ac. Network Electronics

ad. Sound Equipment

ae. AV Equipment

af. Access Control Equipment

ag. Surveillance Equipment

ah. Intrusion Detection Equipment

ai. CATV Equipment

aj. Wireless Equipment

ak. Clock Systems

al. Paging/Intercom Systems

C. Shop Drawings:

1. Submit detailed shop drawings of all items of equipment furnished under this Contract for approval, before manufacture of the equipment or its incorporation in the work. Drawings shall be submitted covering cable, connectivity, pathways, hardware, labeling, etc.

2. Shop drawings will not be reviewed by the Engineer/Architect if the Contractor’s stamp and initials are not on the drawings showing that the Contractor has first approved drawings.

3. If quantities appear on the drawings, they will be marked out. The Engineer/ Architect will not approve quantities. This is the Contractor’s responsibility.

4. If standard catalog sheets containing multiple or ambiguous numbers, such as cable types, are submitted without being marked for identification, they will be returned for resubmission.

5. Shop drawings of active components and electronic equipment shall include frontal and rear elevations indicating mounting details, connections, connection fields, air intake and exhaust ports and dimensions. Submittals shall include all operational specifications; including but not limited to voltage, circuit amperage, power consumption, air flow, temperature range, temperature rise, noise, etc.

6. Shop Drawings of Equipment Furnished by Others: The Contractor will be provided with complete manufacturers detailed shop drawings, wiring and connection diagrams of all equipment to which his work connects. It shall be the Contractor’s responsibility to obtain the drawings from other Contractors or suppliers at the time they are needed. Work that must be altered because of the Contractor’s failure to obtain shop drawings shall be corrected without additions to the Contract Price.

 D. Electronic Format:

1. Shop drawings shall be submitted in electronic format utilizing PDF files. The submittal shall be organized by specification section and contain all required information within a PDF document for each specification section. The submittal shall be organized as follows:

a. Primary zip file contains a PDF of master transmittal cover page indicating the project name, submitting contractor, contact information and a list of all the sections with titles being submitted. This primary file shall also contain each of the individual PDF files for the individual sections being submitted.

b. Sub PDF file for each specification section organized as follows:

2. First Page: Cover page indicating the project name, submitting contractor, contact information, space for Engineer’s stamp.

3. Page(s) for contractor qualifications and project certifications.

4. Page(s) for Bill of Materials (BOM) list including part numbers, quantities and references to specification section paragraphs for each part.

5. Page(s) for manufacturer’s data sheets.

6. Page(s)/Drawing(s) for system diagrams, riser diagrams, block diagrams, etc.

7. Drawing(s) for floor plans showing equipment locations shall be a separate PDF folder from the 8.5” x 11” cut sheets.

E. Submittals – Data/Communications:

1. Submit shop drawings for specified data/communications materials and equipment proposed for use on the project. Shop drawings and cut sheets shall be submitted, approved and returned prior to purchase and installation of the material and equipment.

2. Shop drawing submittal shall include, but not be limited to the following as applicable per project requirements:

a. Cables – Copper, Fiber, Coaxial, Horizontal, Backbone

b. Connectivity – Copper, Fiber, Coaxial

c. Equipment Racks – 2 Post/ 4 Post & Accessories

d. Equipment Cabinets & Accessories

e. Power Strips, PDU Strips, Etc.

f. Floor Boxes, Floor Raceway, Ceiling Boxes, MUTOAs, Consolidation Points, Etc.

g. Patch Panels, Face Plates, Adapter Plates, Cassettes, Etc.

h. Cross-Connect Blocks

i. Cable Tray & Accessories

j. Cable Ladder & Accessories

k. J-Hooks, Cable Ties, Cable Wraps

l. Surface Mounted Raceway – Metallic/Non-Metallic

m. Fiber Interconnect Cabinets & Accessories

n. Splice Enclosures & Accessories

o. Inner Duct

p. Vertical/Horizontal Cable Organizers

q. Ground Bus Bars, Lugs, Hardware, Conductors

r. Conduit, Sweep Bends

s. Pull Boxes

t. Condulete Fittings

u. Conduit Plugs & Seals

v. Patch Cords – Copper, Fiber, Cross-Connect Wire

w. Pigtail Assemblies, Pre-manufactured Cassettes, Etc.

x. Test Equipment – Copper, Fiber, Coaxial, Grounding

y. Specialized Tooling – Fiber Cleaver, Inspection Scope, UFL, Fusion Splicer, Insertion Tools, Etc.

z. Network Electronics

aa. Sound Equipment

ab. AV Equipment

ac. Surveillance Equipment

ad. CATV Equipment

ae. Access Control

af. Intrusion Detection Equipment

ag. Wireless Equipment

ah. Paging/Intercom System

ai. Clock Systems

3. Shop drawing submittals shall indicate full compliance with all specified requirements. Shop drawings not indicating full compliance; will be returned unapproved for re-submittal.

4. Shop drawing submittals shall be marked to indicate the specific item or items being submitted with a complete description noted and options selected. Copies of general catalog pages or advertisements are not acceptable. Shop drawings not indicating full compliance or complete information will be returned, unapproved for re-submittal.

5. Shop drawings shall be submitted within ten (10) working days of the award of contract. Ten (10) working days shall be allocated for the review and approval of the shop drawings by the Owner and Engineer.

6. Submit a minimum of thirty (30) days prior to commencement of installation, or as otherwise directed, for Owner and Engineer review and acceptance, drawings indicating cable tray, conduit or other raceway routing, size and cable fills to verify that the installation will meet all aspects of the Specification.

a. The submittal shall assure that the Contractor has verified the route, verified fire barrier penetrations, confirmed the application of the raceway system, verified the cable counts, raceway size and cable fill, and as a result all project goals and intents of the design and Specifications shall be able to be met.

7. Submit to the Owner and Engineer cut-sheets for fire-stopping materials and assemblies for review and acceptance by the Owner and Engineer.

a. The submittals shall be provided within a minimum of five (5) working days prior to installation for review and acceptance by the Owner and Engineer, or as otherwise directed.

8. Submit within a minimum of ten (10) working days prior to commencement of cable testing, the names, registrations, and certification of the proposed cable testing team technicians. The submittal shall verify a thorough knowledge, understanding, training and experience of the equipment to be utilized, and a proficiency in its operation. Provide a written detailed equipment set-up procedure, indicating “what and how” all test parameters are entered into the test or equipment; factory default settings are not acceptable. The approved set-up procedures will be provided to the owner as a component of the final cable test submittals, providing the Owner documentation with all information required to duplicate the original test conditions and parameters.

9. The Contractor shall submit to the Associate, for approval, cut sheets, shop drawings, technical specifications, operator manuals, etc. as provided by manufacturer of the testing equipment proposed for use by the Contractor, to test and verify his installation.

10. Ten (10) working days shall be allocated for the review and approval of shop drawings by the Owner and Associate.

3.03 UNDER CONSTRUCTION SUBMITTALS

A. Provide the following submittals, as indicated during the construction process but prior to commencement of work:

1. Contractor’s tradesman registrations and certifications shall be provided within (3) working days of commencement of work or the presence of the tradesman on the jobsite to the Owner and Associate.

a. Three (3) working days shall be allocated for the review and confirmation of the tradesman’s qualifications by the Owner and Associate.

B. Provide the following submittals as indicated during the construction process but prior to installation:

1. Cable Factory Master Reel Test Reports shall be provided within two (2) working days of the material arriving on the construction site.

a. Three (3) working days shall be allocated for the review and acceptance of the Master Reel Test Reports.

b. Concurrent with the submittals of the Master Reel Reports for the copper and fiber optic cable, the Contractor shall submit a “Memo of Compliance and Acceptability” for Contractor performed “Copper/Fiber Optic Pre-Installation” tests for the cables as received.

2. The Contractor shall submit a minimum of ten (10) days prior to commencement of installation, or as otherwise directed, for Owner and Associate review and acceptance, drawings indicating cable tray, conduit or other raceway routing, size, cable fills, etc. as required to verify that the installation will meet all aspects of the specification.

a. The submittal shall assure that the Contractor has verified the route, verified fire barrier penetrations, confirmed the application of the raceway system, verified the cable counts, raceway size and cable fill, etc. and as a result all project goals and intents of the design and specifications shall be able to be met.

3. The Contractor shall submit within a minimum of ten (10) days prior to commencement of installation, or as otherwise directed, for Owner and Associate review and acceptance, drawings to indicate the layout of the 66 Block cross connect fields (if applicable), cable routings, clearances, 66 Block assignments, (if applicable), spare space and future growth, etc.

a. If applicable, the submittal shall assure that the Contractor has planned and confirmed the layout for the 66 Block cross connect fields for compliance with the intent of the design and specifications, and as a result, all project goals and intents shall be met.

b. Where and as applicable, the submittal shall indicate feeder conduit and sleeve locations, assignments, etc. as required to confirm cable management, routing and support for an orderly, manageable installation, with minimum of congestion and crossovers, etc.

4. The Contractor shall submit to the Owner and Associate cut sheets for firestopping materials and assemblies, which have been reviewed and approved by the Local Authority Having Jurisdiction (AHJ) for review and acceptance by the Owner and Associate.

a. The submittals shall be provided within a minimum of five (5) working days prior to installation for review and acceptance by the Owner and Associate or as otherwise directed.

5. The Contractor shall submit within a minimum of ten (10) working days prior to commencement of cable testing, the names, registrations, and certification of the proposed cable testing team technicians. The submittal shall verify a thorough knowledge, understanding, training and experience of the equipment to be utilized, and a proficiency in its operation.

6. The Contractor shall provide a written detailed equipment set-up procedure, indicating “what and how” all test parameters are entered into the test or equipment, factory default settings are not acceptable. The approved set- up procedures will be provided to the Owner as a component of the final cable test submittals, providing the Owner documentation with all information required to duplicate the original test conditions and parameters.

a. Cabling plant verification testing shall be performed by Owner and Associate approved technicians only, all test results performed by others will be rejected by the Owner and Associate, and retested as per specifications. Testing performed by others than Owner and Associate approved personnel, whether under “supervision” or not, will be rejected and retested per specifications at the Contractor’s expense.

7. The Contractor shall submit progressive cable installation verification testing results to the Owner and Associate within five (5) working days of performing the tests for review.

a. Submittal shall be by electronic copy only, for the purpose of monitoring project quality and progress.

3.04 CLOSEOUT SUBMITTALS

A. The Contractor shall provide the following closeout documentation as directed by the Owner, Associate, Architect and/or Construction Manager as per the Construction Documents:

1. Instruction Manuals for all equipment provided.

2. Approved shop drawings, submittal drawings, sketches.

3. As-built drawings.

a. The Contractor shall provide final “as-built” drawings for the project.

b. “As-Built” drawings shall indicate, but not be limited to the following:

1. Final location of all equipment and racks in Floor Plan and Elevation.

2. Final routing of all major pathways, conduits, and cable trays.

3. Final location of all splice enclosures, pull boxes, hand-holes, man-holes, equipment rooms.

4. Final location of all outlets, W.A.P., and communications grounding.

5. Final labeling information and identifiers on all outlets, equipment, pathways, and cross-connect fields.

6. CATV tap dB values at each outlet.

4. Record Drawings:

a. The Contractor shall keep in the field, and open to inspection, an accurate, current, progressive record of the actual installation of the communications system. On completion of the work, the Contractor shall deliver marked prints showing the actual routing of the conduits, cable trays, major open wiring runs, pull boxes, etc. and elevations, outlet identification numbers, connectivity, outlet elevation, sleeves, firestopping, riser conduits/sleeves, cable support, grounding bus bars, bonding backbone, etc.

5. Operating Instruction Manuals:

a. Provide written instructions for each system listed in the specifications.

6. Electronic copy and paper copy of all final, accepted copper cable test results.

7. Electronic copy and paper copy of all final, accepted fiber optic cable test results.

8. Completed, signed, sealed and dated manufacturers (Hubbell/Superior Essex and other) extended warranty certification documentation.

9. VLAN Assignments, IP Addresses Assignments

10. Training Videos

11. CDs of Software, Equipment Documentation and Manuals

12. Wireless Site Survey Documentation

13. Grounding Test Report

14. Sound System Testing

15. AV System Programming Documentation and Software

16. Passwords, Usernames and Software License Keys

17. Configuration and Programming Source Files

B. Contractor shall complete and submit the required “Contractor Close-Out Checklist” found at: <http://www.utoledo.edu/facilities/construction/forms.html>.

C. Shop drawings and closeout documents shall be submitted directly to the Architect, Construction Manager and/or the UT Design and Construction Representative as per the construction documents.

3.05 MISCELLANEOUS

A. All submittals, excluding shop drawings and closeout documents shall be made directly to the Owner and Associate in writing (i.e. with Letter of Transmittal itemizing the content) with transmittal copies submitted to the Architect, Construction Manager, the UT Design and Construction Representative as per the construction documents.

END OF SECTION 27 0502