

## **SECTION 270503 - SUBMITTALS FOR COMMUNICATIONS**

### **PART 1 - GENERAL**

#### **1.1 SUBMITTALS**

- A. Submittals shall be furnished for each Section that includes one or more of the following elements of work:
  - 1. Supply of one or more products.
  - 2. Installation of one or more products.
  - 3. Integration of one or more products.
  - 4. Programming of one or more products.
  - 5. Creation of one or more deliverable products.
  - 6. Labeling of one or more products.
  - 7. Testing of one or more systems.
  - 8. Contractor-based design or engineering of one or more products or systems.
- B. Additional Submittal requirements may be listed in the individual Specification Section(s) specific to that Section.

#### **1.2 SUBMITTAL TYPES**

- A. The following are the common submittal types referenced in this Section:
  - 1. Quality Assurance (QA).
  - 2. Product Data (PD).
  - 3. Shop Drawing (SD).
  - 4. Training (TG).
  - 5. Field Observation Response (FO).
  - 6. Key Drawings.
  - 7. Closeout Submittal (CO).

### **PART 2 - PRODUCTS (NOT USED)**

### **PART 3 - EXECUTION**

#### **3.1 GENERAL**

- A. Submittals shall be routed through established Project channels as identified by the Owner's representative.
- B. Coordinate, assemble, title, transmit and track Project submittals.

- C. Label each submittal of each type similarly for consistency and so they appear as if prepared by the same entity. Like-type submittals (e.g., Product Data) from different Sections shall feature the same appearance and organization as those of other Sections.
- D. Submittals prepared by subcontractors or vendors shall not be accepted unless prepared in compliance with the Contract Documents.
- E. Submittal items listed in this Section represent the common items required to be supplied for the various specification Sections throughout the duration of the Project. Individual Sections will vary and may include additional or lesser requirements.
- F. Designer reserves the right to require additional submittals or to waive select submittal requirements on a Section-by-Section basis. Additional submittals shall be provided at the Contractor's expense.
- G. The cost for preparation and transportation of submittals is Work of the Contract.
- H. Supply separate submittals for each Section. Do not combine multiple Sections together into a single submittal, except where expressly directed within the Contract Documents.
- I. Organize submittals as identified in the Contract Documents.
- J. Furnish submittals for different Sections each with its own transmittal form. A single transmittal shall not be used to identify submittals for more than one (1) Section at a time.
- K. Use of Electronic Drawings from the Owner's Design Team:
  - 1. If expressly permitted by the Owner and the terms of the Contract, editable electronic versions of standard-scale, AutoCAD-based plan drawings may be made available for the creation of shop and as-built drawings.
  - 2. Upon request when available, electronic versions of standard-scale, Navisworks (.dwf) and (.nwc) or AutoCAD 3D (.dwg) files may be made available for coordination purposes.
  - 3. Due to the proprietary nature of internal design systems, editable native-software versions of some drawings, including but not limited to system diagrams and details will not be made available in an editable form. In these cases, electronic versions of the drawings may be made available only in PDF, JPG or similar non-editable electronic form, at the sole discretion of the Design Professional.
  - 4. Revit files are not available.
  - 5. A "Request Drawings" form can be accessed, filled out and submitted at the following internet address <http://www.klhengrs.com> (right hand side of page - Contractor Resources). Direct access to this form can be found here: <http://files.klhengrs.com/requestdrawings.html>

### **3.2 SUBMITTAL SEQUENCE**

- A. Quality Assurance Submittal:
  - 1. When not expressly requested to be supplied with bid, the Quality Assurance submittal(s) shall be supplied upon request. When requested the submittal shall be delivered to the Designer within 16 business hours.
- B. Product Data Submittal:
  - 1. Submit following contract award or notice of intent to award a contract. Product data shall be submitted and reviewed prior to procurement of materials.
- C. Shop Drawing Submittal:
  - 1. Submit for review prior to commencement of fabrication and installation.
  - 2. Submit concurrently with Section-specific Product Data submittals.
- D. Training Submittal:
  - 1. Submit thirty (30) days prior to the first training session.
- E. Field Observation Report Submittal:
  - 1. Submit five (5) business days prior to punch list walkthrough.
- F. Closeout Submittal:
  - 1. Submit following completion of onsite work .

### **3.3 SUBMITTAL IDENTIFICATION**

- A. Identify each submittal uniquely.
- B. Identify each submittal by specification Section number, submittal type, and submittal iteration.
- C. The format for labeling the submittals shall be as follows:
  - 1. Section Number–Submittal Type Abbreviation–Submittal Iteration.
  - 2. Examples:
    - a. First Product Data Submittal for section 271513: “271513-PD-00.”
    - b. Revised Product Data Submittal for section 271513: “271513-PD-01.”
    - c. Second Revised Product Data Submittal for 271513: “271513-PD-02.”

### **3.4 SUBMITTAL CONTENTS**

- A. All Submittals:

1. Transmittal:
    - a. Supply a dedicated transmittal for submittals for each individual Section.
    - b. Itemize the specific submittals included by Section, submittal type, and iteration.
  2. Title Sheet:
    - a. Include a separate title sheet with each submittal, of each type.
    - b. Title sheets for each Section, for each submittal type, shall have the same appearance.
    - c. Title sheets for product data submittals shall be 8-1/2 inches x 11 inches.
    - d. Title sheets for drawings shall be the same size as the associated drawings.
    - e. Create title sheets to have the appearance and information identified on the sample title sheet published at the end of this Section.
  3. Title Blocks:
    - a. Drawing submittals shall be created on the Contractor's, manufacturer's, or vendor's own title block. The title blocks of the Owner, Architect, Engineer, Designer or their Consultants shall not be reproduced on any document (electronic or hardcopy) that is prepared or altered by the Contractor.
  4. Legend:
    - a. Drawing submittals shall include a legend of symbology.
  5. Resubmittals:
    - a. Resubmittals shall include a replica of the reviewer's comments that necessitated the resubmittal, along with an accompanying item-by-item explanation of the actions taken and changes that will be found within the resubmittal.
- B. Quality Assurance Submittals:
1. List of Subcontractors to be used on the Project along with a description of the role each will play on the Project.
  2. Proof of Quality Assurance compliance, as identified within Section 270002 "Quality Assurance for Communications" and in each individual Section.
- C. Product Data Submittals:
1. Bill of Materials (BOM):
    - a. Separate list for each system:

- 1) When a Section covers products for use in multiple systems, supply separate BOM for each unique system covered by the Section. Label each with the system name, space/room name, and room number.
  - b. Include the following:
    - 1) Make, model, and description of each product.
    - 2) Quantity estimates for each product.
  - c. Organize the BOM to follow the order in which products appear within the Section.
2. Product Datasheets Submittals:
- a. Separate manufacturer datasheets for each product.
  - b. Datasheets shall be manufacturer original datasheet:
    - 1) Distributor modified, distributor branded, and/or html based “web” datasheets are not acceptable.
    - 2) Datasheets shall include size and technical support data.
  - c. Where manufacturer’s datasheets depict multiple products, versions and options, indicate via highlighting, underlining, or with bold visible arrows the model(s), version(s) and option(s) being supplied. Exact catalog number(s) shall be indicated.
- D. Shop Drawing Submittals:
1. General:
    - a. Provide Drawings indicated in individual Sections as described below.
    - b. Drawing descriptions identify the required contents of common drawings required under the Contract.
    - c. Drawings identified within individual Sections, along with any additional drawings deemed necessary by the Designer, are required.
    - d. Drawing Scales:
      - 1) Floor plans shall be drawn to scale.
      - 2) Section drawings shall be drawn to scale.
      - 3) Elevation drawings shall be drawn to scale.
      - 4) Details of physical items shall be drawn to scale.
      - 5) Rack layouts and custom furniture drawings shall be drawn to scale.
      - 6) System drawings and schematic drawings shall be drawn 1:1 (no scale).
    - e. Sizes:
      - 1) Sheet sizes shall match the size of the Contract Drawings sheets, except where otherwise expressly requested or approved in advance by the Designer.
  2. Floor Plans:

- a. Location of system devices and faceplates.
  - b. Labeling of outlets and devices.
  - c. Primary and secondary system cabling pathway(s).
    - 1) Coordinate for maximum length of cabling.
  - d. Location of equipment racks.
  - e. Location of equipment enclosures.
  - f. Location of major system components.
3. Reflected Ceiling Plans:
- a. Location of ceiling devices, coordinated with devices that are Work of others, and existing devices (where applicable).
4. System Diagrams:
- a. Hybrid schematic / block wiring diagram.
  - b. System products depicted.
  - c. Product inputs, outputs and other ports depicted.
  - d. System cables depicted.
  - e. Product brand, model, description, options, and accessories declared.
  - f. Device.ID assignment for each product.
  - g. Interconnections depicted between system products.
  - h. Interconnections depicted between system products and related system products.
  - i. Declaration of the cable types, including brand, model, description and color. An accurate cable key is acceptable.
  - j. Unique identification (e.g., number) assignment for each cable.
  - k. Cable color coding schema.
  - l. Termination typicals, keyed to diagram interconnections.
5. Rack Elevations:
- a. Absolute position of mounted components.
  - b. Device.ID, brand and model of each product.
  - c. Device.ID, brand and model of each power distribution product.
  - d. Size and type of each filler panel (vent and blank).
6. Custom Assemblies and Products:
- a. Manufacturer.
  - b. Materials.
  - c. Finish and color(s).
  - d. Parts list.
  - e. Nomenclature sizes, colors.
  - f. Dimensions.
  - g. Schematic diagram(s), where applicable.

7. Termination Details:
    - a. Conductor-to-conductor, conductor-to-connector, conductor-to-terminal definitions of each product in the system. If typical drawings are used, they shall be accurately keyed to the system diagrams.
  8. Power Distribution Diagrams:
    - a. Each power product.
    - b. Interconnectivity between power products.
    - c. Interconnectivity of local power distribution products to supply-side AC power.
    - d. Interconnectivity of system equipment to the power distribution system.
    - e. Circuiting and interconnectivity of power sequencer(s) and remote controlled power distribution systems.
    - f. Power-up and power-down sequence of products connected to the power distribution system.
  9. Mounting Details:
    - a. Depicting the materials and means of securing installed products.
    - b. Finishes and colors of exposed parts.
  10. Labeling Schema:
    - a. Organized methodical plan for the unique identification of cables within the system and for identifying cables from other systems.
  11. Wall Elevations:
    - a. Depict the location of products to be mounted on the walls, coordinated with Work of others, along with existing conditions (where applicable).
  12. Custom Furniture:
    - a. Manufacturer.
    - b. Dimensions.
    - c. Materials, finishes and colors.
    - d. Accessory parts.
    - e. Construction details.
    - f. Multiple views:
      - 1) Top, side, front and back, sections.
      - 2) Depicting the space allocation and products that the item is designed to accommodate.
- E. Training Submittals:
1. Proposed schedule.

2. Training agendas for each session.
3. Identification of personnel that will conduct training.
4. Handouts proposed for distribution during training.

F. Field Observation Report Submittals:

1. Written responses to Field Observation Reports supplied to the Contractor during the course of the Project:
  - a. The response shall include a copy of the original Field Observation Report.
  - b. The response shall include detail of the corrective action taken, the date the action was taken and the identity of the individual who took the action.

G. Closeout Submittals:

1. As-Built Drawings:
  - a. General:
    - 1) Requirements for Shop Drawings apply to “As-Built” drawings.
  - b. Required Drawings:
    - 1) Title Sheet.
    - 2) Floor Plans.
    - 3) System Diagrams.
    - 4) Power Distribution Diagrams.
    - 5) Rack Elevations.
    - 6) Communication Room Wall Elevations.
    - 7) Mounting Details.
    - 8) Custom Plate and Panel Assemblies.
    - 9) Patch Panel/Patch Bay Layouts.
    - 10) Labeling Schema.
    - 11) As-built version of each Project shop drawing.
  - c. Drawing Formats:
    - 1) Electronic Editable: Editable version using the native application used to create the file (e.g., Revit, AutoCAD, Visio).
    - 2) Non-Editable: PDF file format.
    - 3) Sheets shall be the same size and feature consistent title block information in the lower-right corner.
  - d. Drawing Organization:
    - 1) The first page of the set shall include a detailed index and sheet-by-sheet description of each drawing sheet.
2. Test Reports and Checklists:
  - a. Test reports, checklists, and other forms generated and completed during the course of the Project.



3. Operation and Maintenance Manuals:
  - a. Manual Contents and Organization:
    - 1) General:
      - a) Provide Manuals on solid state media (SD Card or USB “Thumb Drive) separate folders for each system, labeled.
      - b) Labeled sub-directories shall be created on the electronic media to label and separate contents for the manual.
    - 2) Project Information Cover:
      - a) Title of Project.
      - b) Name and address of Owner, Designer, Architect, Contractor of Record and Subcontractor.
      - c) System name and specification references.
    - 3) Index:
      - a) Contents of the manual.
    - 4) Warranty Statement:
      - a) A warranty statement shall be included for each system. The warranty statement shall reiterate the terms of warranty identified within the Contract Documents, as well as identify how the Owner is to obtain warranty service.
      - b) The warranty statement shall clearly identify which products are covered by Manufacturer warranties beyond the Contractor required minimum warranty period. The term of manufacturer warranty shall also be identified (e.g., 2 year parts and labor).
      - c) A separate warranty statement shall be supplied for each system.
      - d) Identify the date that the warranty for the system starts. This date shall be the date listed on the Certificate of Substantial Completion (if one was issued to the contractor specifically for the system) or the date listed on the Notice of Final Completion.
      - e) Supply standard out-of-warranty service rates and service contact information.
    - 5) Bill of Materials:
      - a) List of products supplied.
      - b) Serial numbers of each product.
      - c) IP addresses of those products configured to have static IP addresses.
      - d) MAC addresses of products featuring network communication ports (wired and/or wireless).
      - e) Network device names for those products configured for DHCP.
    - 6) Product Datasheets (supply only in the electronic version of Operation and Maintenance Manual):
      - a) Manufacturer datasheets for each product supplied.
    - 7) Manufacturer Owner / User Manuals:
      - a) Manufacturer’s Owner’s or User’s manual for each product.
      - b) Manufacturer’s Installation instructions and other documentation supplied with the product.

- 8) Test Reports and Checklists:
  - a) Test reports, checklists, and other forms generated and completed during the course of the Project.
- 9) Training Information:
  - a) Photocopy of training outlines / agendas.
  - b) Photocopy of training session handouts.
  - c) Photocopy of training sign-in sheets.
  - d) Photocopy of signed delivery receipt for each training session recording (applicable to those Sections/systems requiring recording).
- 10) As-Built Drawings:
  - a) The electronic manual shall contain electronic PDF version of the as-built drawings.
- 11) Software (electronic manual only):
  - a) Editable configuration files for system equipment.
  - b) Software source code use in supplied products.
  - c) Compiled versions of configuration files and source code.
  - d) Software required for reviewing and editing supplied files.

### **3.5 SUBMITTAL QUANTITY**

#### **A. All Submittals:**

1. The quantity of submittals required shall be the greater of the following:
  - a. Quantity identified within Division 01.
  - b. Quantity identified within the individual Section.
  - c. Quantity identified herein.
2. In addition to the Contract required quantity, the Contractor shall also submit any additional quantities required for its own use and records, and for distribution to other trades.
3. The Designer shall retain a copy of each submittal received. Others in the submittal communication chain may also retain copies.

#### **B. Product Data Submittals:**

1. One (1) Electronic.

#### **C. Shop Drawings Submittals:**

1. One (1) Electronic.

#### **D. Training Submittals:**

1. One (1) Electronic.

#### **E. Field Observation Report Submittals:**

1. One (1) Electronic.

F. Closeout Submittals:

1. One (1) Electronic.

### **3.6 SUBMITTAL REJECTION**

A. The following items are representative reasons that submittals may need to be revised and resubmitted:

1. Binding submittals for multiple Sections together.
2. Failing to supply separate transmittal for submittals for each Section.
3. Failing to include a submittal title sheet.
4. Failing to use and accurately complete the published title sheet.
5. Failing to supply and accurately complete the submittal checklists.
6. Failing to supply product data and shop drawings at the same time.
7. Failing to include a detailed BOM with the product data.
8. Failing to supply product data sheets.
9. Failing to supply product data sheets with the correct product and required accessories enumerated.
10. Failing to supply shop drawings.
11. Failing to supply shop drawings with required information.
12. Failing to supply accurate information.
13. Failing to supply relevant information required by the Specifications.
14. Failing to supply products that are in compliance with the Specifications.
15. Failing to supply the required information in the required format.

### **3.7 RESUBMITTALS**

A. Revise and Resubmit:

1. When a submittal is rejected and flagged as “Revise and Resubmit,” the entire submittal shall be reviewed, revised and resubmitted in totality.
2. Resubmittals shall be checked for compliance with the Contract Documents, inclusive of requirements for submittals. In addition, any comments and deficiencies identified by the reviewer shall be appropriately acted upon.

B. Exceptions Noted:

1. When a submittal is flagged as “Exceptions Noted,” the specific actions identified shall be taken.
2. If the reviewer’s comments include selective rejection of products, the resubmittal shall be limited to include those items commented upon.

C. Resubmittals shall:

1. Include a copy of the reviewer’s previous comments.

2. Include a written description of the action(s) taken.
3. Be labeled chronologically.
4. Be inclusive of all corrective action identified by the previous reviewer.

### **3.8 ELECTRONIC SUBMITTALS**

- A. Electronic submittals shall be the primary format for submission.
  1. Electronic submittal files shall be compatible for opening and viewing with electronic PDF file readers that fully support and recognize the Adobe PDF Portable Document Format Standard, version 1.5.
  2. Major text within the files shall be electronically searchable using the search-for-text features of current generation Adobe PDF reader software. Files shall be prepared in such manner that reviewers will have the option to search for and find words and phrases that appear within the document, electronically. Documents featuring raster-based text and text that is otherwise not searchable shall not be acceptable. This precludes the use of documents that have been electronically scanned and then converted to or embedded within an electronic file.
- B. The organization, contents, and labeling of information along with other requirements for submittals apply also to electronic versions of the submittals.
- C. Single File Submission:
  1. Option 1 – Single File, PDF Format:
    - a. Single PDF file submittals shall be assembled from a series of individual files that are organized, indexed, bound together as one composite file that is bookmarked to aid the reviewer in navigating the content.
    - b. The file shall feature a navigational tree of contents, organized by content groups (e.g., Title Page, Index, BOM, Datasheets, Shop Drawings). Content groups shall be organized in the same relative order identified within the Contract Documents.
    - c. Within each content group shall be the supporting elements of the group (e.g., product datasheets under the Datasheets group). Each element of the content group shall appear separately as a subordinate element of the group (e.g., separate entry for each product datasheet, separate entry for each shop drawing), and viewable from the navigational contents tree.
    - d. Under the Datasheets content group, individual product datasheet entries shall be identified by Make/Brand and Model (e.g., Belden – 9451 – Audio Cable). Entries shall be organized in a sorted manner, first by make, then by model.
    - e. If the resulting size of the composite PDF file exceeds 10 Megabytes, supply the submittal using the Single Zip File method instead, as described in this Section.

- f. The file name used to label the submittal shall be the section number followed by the submittal instance number for that Section (e.g., 271513-PD-01.pdf).
  - 1) Where the Designer directs the supply of multiple zip files for a submittal, add additional text to the file name to identify that the file is part of a multi-file set of submittals, as per the following examples:
    - a) 271513-PD-01 (1 of 3).pdf
    - b) 271513-PD-01 (2 of 3).pdf
    - c) 271513-PD-01 (3 of 3).pdf
2. Option 2 – Single File, Zip Format:
  - a. Single Zip File submittals shall be assembled from a series of individual PDF files and file directories that are contained with a single compressed WinZip compatible “.zip” file.
  - b. The file shall contain separate top-level directories that are used to group related content (e.g., 00-Title Page, 01-Index, 02-BOM, 03-Datasheets, 04-Shop Drawings), with each directory appearing in the same relative order as that identified in the Contract Documents.
  - c. Within each content group directory shall be separate PDF-compliant files featuring the information required (e.g., separate datasheet file for each product, separate file for each drawing, separate file for each BOM).
  - d. Product datasheet files shall be named using a consistent naming convention that enables those files to appear sorted and grouped when the file is opened for navigation, viewing or extraction by the reviewer.
  - e. Product datasheet files shall be consistently named with the make/brand of the product, followed by model number, followed by any additional information beneficial (e.g., Belden – 9451 – Audio Cable).
  - f. Consult the Designer for supplement instructions should the WinZip file exceed 50 Megabytes in size.
  - g. The file name used for the submittal shall be the Section number followed by the submittal instance number for that Section (e.g., 271513-PD-01.zip).
    - 1) Where the Designer directs the supply of multiple zip files for a submittal, add text to the file name that identifies the file is part of a multi-file set as per the following examples:
      - a) 271513-PD-01 (1 of 3).zip
      - b) 271513-PD-01 (2 of 3).zip
      - c) 271513-PD-01 (3 of 3).zip

**END OF SECTION 270503**

SUBMITTAL TITLE SHEET  
EXAMPLE  
*(Form: Sub-1)*

PROJECT TITLE:

Project Name Line 1  
Project Name Line 2  
Project Name Line 2

SUBMITTAL TYPE:

Product Data

SECTION SUBMITTAL NUMBER

271116-PD-00

SECTION TITLE:

Cabinets, Racks, Frames  
and Enclosures

Date Prepared:

yyyy-mm-dd

CONTRACTOR OF RECORD:

Firm Name  
Address 1  
Address 2  
City, State, Zip  
Phone (000) 000-0000, Fax (000) 000-0000  
Project Manager: Full Name  
PM E-Mail: [xxxxxxxx@xxxx.xxx](mailto:xxxxxxxx@xxxx.xxx)

SECTION SUBCONTRACTOR(S):

Firm Name Address 1 Address 2 City, State Zip Phone (000) 000-0000 Fax (000) 000-0000 PM Name: Full Name PM E-Mail: xxxxxxxx@xxxx.xx	Firm Name Address 1 Address 2 City, State Zip Phone (000) 000-0000 Fax (000) 000-0000 PM Name: Full Name PM E-Mail: <a href="mailto:xxxxxxxx@xxxx.xx">xxxxxxxx@xxxx.xx</a>
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