

SECTION 01 33 23

SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Shop drawings.
- C. List of materials sources.
- D. Other submittals.
- E. Product data.
- F. Samples.

1.02 MEASUREMENT AND PAYMENT

- A. Separate measurement or payment will not be made for work required under this Section. All costs in connection with the work specified herein will be considered to be included with the related item of work in the Bid Schedule of the Bid Form, or incidental to the Work.

1.03 DEFINITIONS

- A. Drawings: The term “Shop Drawings,” as used herein, includes fabrication, erection and installation, application, layout, and setting drawings, lists or schedules of materials and equipment, manufacturer’s standard drawings, wiring and control diagrams, all other drawings as may be required to show that the materials, equipment, and systems, and the positions thereof, comply with Contract requirements.
- B. Product Data: The term “product data,” as used herein, includes manufacturer-prepared descriptive literature, catalog sheets, brochures, performance data, test data, printed diagrams, schedules, illustrations, and other information furnished by the Contractor or the various product and materials suppliers to illustrate and describe a product, material, system, or assembly for some portion of the Work.
- C. Samples: The term “samples,” as used herein, are physical examples which illustrate materials, equipment, colors, textures, finishes, functions, configuration, and work quality, and establish the standards of quality and utility by which the Work will be judged for acceptance.

1.04 SUBMITTALS

- A. Refer to Section 01 33 00, Submittal Procedures, for submittal procedures.

B. Quantities:

1. Six full size bond prints of each drawing.
2. Six copies of manufacturers' standard schematic drawings.
3. Six copies of Contractor's or manufacturers' calculations, and six copies of manufacturers' standard data.
4. Six copies of manufacturers' printed installation, assembly, erection, application, and placement instructions.
5. Two of each sample item specified in the various Specification Sections, unless otherwise specified.
6. Six copies of inspection reports, test reports, and certificates of compliance.
7. Where submittals are submitted to the Engineer for information or record purposes, submit two copies.
8. Where permits and licenses and other such documents are obtained in the District's name, submit the original and one copy.

1.05 SHOP DRAWINGS

A. Drawings shall be prepared in accordance with ANSI Y14.1, Drafting Standards Manual, and the following requirements:

1. Drawings shall be limited to the following standard sizes in inches: Maximum size shall be 22 inches by 34 inches.

<u>Name</u>	<u>WIDTH (Vertical)</u>	<u>LENGTH (Horizontal)</u>
ANSI A	8 1/2 inches (215.9mm)	11.0 inches (279.4mm)
ANSI B	11.0 inches (279.4mm)	17.0 inches (431.8mm)
ANSI C	17.0 inches (431.8mm)	22.0 inches (558.8mm)
ANSI D	22.0 inches (558.8mm)	34.0 inches (863.6mm) (Maximum)

2. Each drawing shall have the following information in the title block.
 - a. Drawing number, date, title, revision number, and sheet number
 - b. Contract number, Contract sheet number, Contract page number.
 - c. Contractor's name.
 - d. Subcontractor/manufacturer name (if applicable)
 - e. Name of installation location.

3. Each drawing shall use symbols from one standard reference source. The Contractor shall furnish a complete symbol list that includes non-standard symbols used on the drawing. Symbols used shall conform to the list of standard references as listed below:
 - a. Institute of Electrical and Electronic Engineers (IEEE).
 - b. National Electric Manufacturer's Association (NEMA).
 - c. ANSI Y14: American National Standards Institute "Drafting Standards Manual".
 - d. ANSI Y10: American National Standards Institute "Letter Symbols for Drafting".
 - e. ANSI Y32: American National Standards Institute "Graphic Symbols for Drafting".
4. Each drawing shall include details necessary for the procurement, installation, maintenance, and repair of all components or facilities equipment provided. Change Order notices that are attached to drawings shall not constitute revised drawings. Each drawing shall include all changes and be upgraded to reflect the latest configuration.

C. Drawings shall be submitted in accordance with the following requirements:

1. The first drawings submitted by the Contractor will be reviewed for conformance to the requirements herein. Once approval is given, the Contractor shall use this approved drawing as the standard, and prepare subsequent drawings to a quality equal to or better than the approved standard.
2. Each drawing prepared and submitted for review shall have in the lower right hand corner, just above the title block, a five-inch square blank space in which the Engineer may indicate the action taken.
3. All final approved drawings and catalog cuts shall be submitted to the Engineer upon completion of the Work as specified in Section 01 78 39, Project Record Documents.

D. When specified, shop drawings shall be prepared and submitted electronically. Such drawings shall be created using AutoCAD in accordance with the District's Contract Drawing CADD Requirements (part of the BART Facilities Standards, Appendices, District Technical Manuals). Shop drawings to be prepared and submitted electronically include shop drawings which will be utilized as illustrations and drawings in Operation and Maintenance Manuals.

1. The initial submittal of such shop drawings shall include electronic copies for review of their conformance with applicable drafting standards. The Engineer will make the Contract Drawing CADD Requirements available upon request.

1.06 OTHER SUBMITTALS

- A. Other submittals shall be furnished upon request for the Engineer's approval to verify compliance of all equipment and materials with the Contract Documents. These submittals shall include in addition to drawings: catalog cuts, certifications of compliance, or any other substantiating information or samples of material items as necessary.

1.07 PRODUCT DATA

- A. The Contractor shall modify manufacturers' standard diagrams, charts, illustrations, brochures, calculations, schematics, catalog cuts, and other descriptive data to delete information which is not applicable to the Contract. The Contractor shall supplement standard information with additional information applicable to this Contract, and indicate dimensions, clearances, performance characteristics, capacities, wiring and other diagrams, and controls.
- B. If the Contractor utilizes drawings prepared by others, such drawings may include the standards and symbols of others if the drawings are a mix of existing product drawings and drawings prepared specifically for this Contract. In the event others provide drawings prepared specifically for this Contract, such drawings shall conform in symbols, media and standards to the Contractor's drawings.
- C. The Contractor shall modify the manufacturer's printed installation, erection, application, and placing instructions to delete information which is not applicable to the Contract.
- D. Submittals shall include the following:
1. Date and revision dates.
 2. Contract title and number.
 3. Reference Contract Drawing numbers.
 4. Applicable Contract Specification Section numbers.
 5. Identification of product by either description, model number, style number, serial number, or lot number.
 6. The names of the Contractor, Subcontractors, Suppliers, and manufacturers as applicable.
 7. Applicable standards, such as ASTM or Federal specification numbers.
- E. Certificates of Compliance:
1. The Engineer may permit the use of certain materials prior to sampling and testing if accompanied by a certificate of compliance stating that the materials involved comply in all respects with the requirements of the Contract Documents. The certificate shall be signed by the manufacturer of the material. A certificate of

compliance shall be furnished with each lot of material delivered to the Work, and the lot so certified shall be clearly identified in the certificate.

2. All materials used on the basis of a certificate of compliance may be sampled and tested at any time. The fact that material is used on the basis of a certificate of compliance shall not relieve the Contractor of responsibility for incorporating material in the Work which conforms to the requirements of the Contract Documents. Any such material not conforming to such requirements shall be subject to rejection whether in place or not.
3. The Engineer reserves the right to refuse the use of material submitted for approval solely on the basis of a certificate of compliance.
4. The form of the certificate of compliance and its disposition shall be as approved by the Engineer.

1.08 SAMPLES

- A. The Contractor shall furnish to the Engineer samples required by the Contract Documents. Samples shall be submitted without charge, with shipping charges prepaid. Materials for which samples are required shall not be used in the Work until approved in writing by the Engineer.
- B. Sample Label: Each sample shall be labeled with the following data:
 1. Name, number, and location on project;
 2. Name of Contractor;
 3. Material or equipment represented, and location in the project;
 4. Name of producer, brand, trade name if applicable, and place of origin; and
 5. Date of submittal.
- C. The Contractor shall forward a letter in triplicate to the Engineer submitting each shipment of samples and containing the information listed on the Sample Label specified herein. Approval of a sample shall be only for the characteristics and use named in the submittal and approval, and shall not be construed to change or modify any Contract requirement. Before submitting samples, the Contractor shall assure itself that the materials or equipment will be available in the quantities required in the Contract, as no change or substitution shall be permitted after a sample has been approved unless such change or substitution is approved by the Engineer in writing.
- D. Samples of material from local sources shall be taken by or in the presence of the Engineer. Samples taken otherwise shall not be considered for testing.
- E. Inspection and tests will be made, but it is understood that such inspections and tests, if made at any point other than the point of incorporation in the Work, in no way shall be

considered as a guaranty of acceptance of any material which may be delivered later for incorporation in the Work.

- F. Approved samples not damaged in testing may be incorporated in the finished work if marked for identification and approved by the Engineer. Materials incorporated in the Work shall match the approved samples.
- G. Failure of any material to pass the specified tests shall be sufficient cause for refusal to consider, under the Contract, any further samples of the same brand, make, or source of that material. The Engineer reserves the right to disapprove any material which has previously proven unsatisfactory in service.
- H. Samples of material delivered to the site or installed in place may be taken by the Engineer for testing. Failure of samples to meet Contract requirements shall annul previous approvals of the item tested.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01 33 23