

**SECTION 01300**  
**SUBMITTALS AND OPERATIONS AND MAINTENANCE MANUALS**

**PART 1 – GENERAL**

**1.01 GENERAL.**

Where required by the specifications, the Contractor shall submit descriptive information which will enable the Owner to determine whether the Contractor's proposed materials, equipment or methods of work are in general conformance with the design concept and are in compliance with the drawings and specifications. The information to be submitted shall consist of drawings, specifications, descriptive data, certificates, samples, test results and other such information, all as specifically required in the specifications.

**1.02 CONTRACTOR'S RESPONSIBILITIES.**

A. The Contractor shall be responsible for the accuracy and completeness of the information contained in each submittal and shall ensure that the material, equipment or method of work shall be as described in the submittal. Submittals shall contain all required information, including satisfactory identification of items, units and assemblies in relation to the contract drawings and specifications. The Contractor shall verify that the material and equipment described in each submittal conforms to the requirements of the specifications and drawings. Unless otherwise approved by the Owner, submittals shall be made only by the Contractor, who shall indicate by a signed stamp on the submittals that the Contractor has checked the submittals and that the work shown conforms to contract requirements and has been checked for dimensions and relationship with work of all other trades involved. If the information shows deviations from the specifications or drawings, the Contractor, by statement in writing accompanying the information, shall identify the deviations and state the reason(s) therefore. The Contractor shall ensure that there is no conflict with other submittals and shall notify the Owner in each case where the Contractor's submittal may affect the work of another contractor or the Owner. The Contractor shall ensure coordination of submittals among the related crafts and subcontractors.

B. The Contractor may authorize a material or equipment supplier to deal directly with the Owner with regard to a submittal. The Contractor, however, shall be responsible for the accuracy and completeness of information contained in all submittals.

C. The Contractor shall submit a schedule of submittals. The schedule shall indicate all of the submittals and the anticipated date of submittal.

**1.03 TRANSMITTAL PROCEDURE.**

A. General: Submittals regarding material and equipment shall be accompanied by a transmittal form (See Spec Section 01999, Reference Form) from the Contractor. A separate form shall be used for each specific item, class of material, equipment, and items specified in separate, discrete sections for which a submittal is required. However, submittals for various items shall be made with a single form only when the items taken together constitute a manufacturer's package or are so functionally related that expediency indicates checking or review of the group or package as a whole.

B. Submittal Identification: Each set of submittals or samples shall be attached to the submittal transmittal form. The submittal number shall be made up of two parts: XXX-ZZ. The XXX shall be sequential number 001 for the first item submitted, 002 for the second, etc. The ZZ shall be the sequential number of a specific submittal or resubmittal (00 for the first submittal, 01 for the first resubmittal, etc.). All submittals shall show the contract title, shall indicate the name of the vendor, and shall indicate when the equipment and/or material will be required by the construction schedule. The submittal must be adequate to permit a comprehensive review without further reference to the Contractor. The documents submitted must be separately identifiable on the Contractor's submittal transmittal form.

C. Deviation from Contract: If the Contractor proposes to provide material or equipment which does not conform to the specifications and drawings, this shall be indicated under "deviations" on the submittal transmittal form accompanying the submittal copies.

D. Submittal Completeness: Submittal which do not have all the information required to be submitted, including deviations, shall be considered as not complying with the intent of the contract and are not acceptable and will be returned without review.

E. Review of Second and Subsequent Resubmittals: Costs associated with the review of the second resubmittal and any subsequent resubmittals shall be borne by the Contractor. The Contractor will be billed for these costs by the Owner. Costs due may be deducted from progress payments due the Contractor by the Owner.

#### **1.04 REVIEW PROCEDURE.**

A. When the contract requires a submittal, the Contractor shall submit the specified information as follows to the Owner for review:

1. Six (6) copies of all the submitted information.
2. Only three (3) sets of sample materials need to be submitted.
3. Instruction-Operation and Maintenance Manuals. Submit two (2) copies for review and once approved: Six copies of a complete, bound set of the instruction and operation and maintenance manuals for each item of equipment for which such a manual is required, shall be provided by the Contractor. Included in this binder shall be all shop drawings and as-built electrical drawings.

B. Within 30 calendar days after receipt of the submittal by the Owner, the submittal shall be reviewed and the Owner shall return the marked-up submittal. On complex drawings and equipment the Owner shall acknowledge receipt within 21 days and advise the Contractor when the submittal will be returned. The returned submittal shall indicate one of the following actions.

1. If the review indicates that the material, equipment or work method is in general conformance with the design concept and complies with the drawings and specifications, submittal copies will be marked "NO EXCEPTIONS TAKEN". In this event, the Contractor may begin to implement the work method or incorporate the material or equipment covered by the submittal.

2. If the review indicates limited corrections are required, copies will be marked "MAKE CORRECTIONS NOTED". The Contractor may begin implementing the work method or incorporating the material and equipment covered by the submittal in accordance with the noted corrections. Where submittal information will be incorporated in operation and maintenance data, a corrected copy shall be provided. Otherwise, no re-submittal will be required.
3. If the review reveals that the submittal is insufficient or contains incorrect data, copies will be marked "AMEND AND RESUBMIT". The Contractor shall not undertake work covered by this submittal until the submittal has been revised, resubmitted and returned marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED".
4. If the review indicates that the material, equipment or work method is not in general conformance with the design concept or not in compliance with the drawings and specifications, copies of the submittal will be marked "REJECTED". Submittal with deviations which have not been identified clearly may be rejected. The Contractor shall not undertake work covered by such submittal until a new submittal is made and returned marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED".
5. In addition to calculations stamped and returned "Engineer's Review Not Required" other transmittals such as submittals which the Engineer considers as "Not Required", submittal information which is supplemental but not essential to prior submitted information, or items of information in a transmittal which have been reviewed and approved in a prior transmittal, will be returned with "Engineer's Review Not Required".

C. Resubmittals shall include the entire submittal package. No changes shall be made by the Contractor on resubmittals other than those changes indicated on the reviewed submittal, unless such changes are clearly described in a letter accompanying the resubmittal.

#### **1.05 EFFECT OF REVIEW OF CONTRACTOR'S SUBMITTAL.**

A. Review of drawings, methods of work, or information regarding materials or equipment the Contractor proposes to provide shall not relieve the Contractor of responsibility for errors therein and shall not be regarded as an assumption of risks or liability by the Owner or by any officer, employee or subcontractor thereof, and the Contractor shall have no claim under the contract on account of the failure or partial failure of the method of work, material, or equipment so reviewed. A mark of "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED" shall mean that the Owner has no objection to the Contractor, upon its own responsibility, using the plan or method of work proposed, or providing the materials or equipment proposed.

## 1.06 SUBMITTAL CONTENTS.

A. Shop drawings shall contain details and information fully developing the pertaining Contract Document requirements and such other information as may be specified or required for review, including, but not limited to:

1. Related Work with cross references to applicable portions of the Contract Documents.
2. Dimensions, including variations between indicated dimensions and actual conditions.
3. Physical configurations with critical dimensions for clearance, access, and servicing.
4. List of materials, including fasteners and connectors.
5. Structural construction and assemblies, welds shown by AWS symbols, and each fastener and connector shown by type and class.
6. Grouting work, including grouting space and material.
7. Concrete foundations and bases for machinery and equipment including joints, joint filler and sealer, and reinforcing.
8. Anchor bolt details showing type and class, sizes, embedments, projections, and locations measured with respect to permanent structural features.
9. Protective coatings and factory finishes full described as to materials, number of coats, plated and metallic coating finishes, treatments, and similar information, all based on specified requirements. The term "as specified" is not acceptable for this purpose.
10. Machinery and equipment details. Standard catalog items need not be illustrated in detail, but indicate and detail sizes, supports, and connections.
11. Auxiliary items that are parts of machinery and equipment, including sight glasses, petcocks, gages, lubrication fittings and access, and maintenance monitoring devices.
12. Piping systems and piping including layout, fittings, valves, appurtenances, hangers and supports, and sleeves.
13. Electrical equipment showing plans, elevations, sections, arrangements, materials, anchor bolts, supports, weights, wiring and circuit diagrams, internal connections, busses, grounding, conduit spaces, layout of instruments, gages meters, and other components.
14. Underground duct banks showing typical details of conduits, joints, spacers, and means of securing conduits in place during concrete placement.
15. Dielectric connections, and materials and methods to be used to isolate aluminum from dissimilar materials.
16. Full-size lettering layouts for data plate and nameplate inscription.

## 1.07 OPERATION & MAINTENANCE MANUALS & EQUIPMENT RECORD SHEETS.

### A. Transmittal Mechanics

1. Submit one copy until approval is received. The transmittal form shall use the same number that was used with the item plus a suffix "O-M". Acceptable submittals will be retained with the transmittal form returned with a request for five additional copies.
2. Submittals shall be printed on 8-1/2 x 11 in heavy first quality paper with standard three-hole punching and bound in white, stiff metal hinged binder constructed as a three-ring style not to exceed 2 1/2 inches in diameter. Rings shall be "D-ring" style. Provide binders with titles on front and on spine of binder. In the absence of pre-printed covers and splines provide clear, plastic sheets suitable for insertion of paper sheets in both cover and spine. Adhesive labels are not acceptable. Tab each section of manuals for easy reference with plastic coated dividers. Provide index for each manual. Provide plastic sheet lifters prior to first page and following last page. Drawings or diagrams bound in manuals to an 8-1/2 x 11 in or 11 x 17 in size. Where reduction is not practical to ensure readability, fold larger drawings separately and place in vinyl envelopes that are bound into the binder. Identify vinyl envelopes with drawing numbers.
3. Provide procedures in electronic format.

### B. Manual Contents:

1. Cover Page: Equipment name, equipment tag number, project name, OWNER's name, and appropriate date.
2. Table of Contents: General description of information provided within each tab section.
3. Lubrication Information: Required lubricants and lubrication schedules.
4. Control Diagrams: Internal and connection wiring, including logic diagrams, wiring diagrams for control panels, ladder logic for computer based systems, and connections between existing systems and new additions, and adjustments such as calibrations and set points for relays, and control or alarm contact settings.
5. Start-up Procedures: Recommendations for installation, adjustment, calibration, and troubleshooting.
6. Operating Procedures: Step-by-step procedures for starting, operating, and stopping equipment under specified modes of operation. Include safety precautions and emergency operating shutdown instructions.
7. Preventive Maintenance Procedures: Recommended steps and schedules for maintaining equipment.

8. Overhaul Instructions: Directions for disassembly, inspection, repair and reassembly of the equipment; safety precautions; and recommended tolerances, critical bolt torques, and special tools that are required.
9. Parts List: Generic title and identification number of each component part of equipment; include bearing manufacturer, model and ball or roller pass frequencies for every bearing.
10. Spare Parts List: Recommended number of parts to be stored at the site and special storage precautions.
11. Drawings: Exploded view or plan and section views with detailed callouts.
12. Provide electrical and instrumentation schematic record drawings.
13. Factory Test Results: Provide copies of factory test reports as specified in Division 15, equipment section.
14. Field Test Results: After field testing is completed, insert field test reports as specified in the equipment section.
15. Equipment Summary Form: Completed form in the format attached at the end of this Section. Insert Equipment Summary Form after the tab sheet of each equipment section. The manufacturer's standard form will not be acceptable.

#### C. Submittal Content

1. Submission of Operation and Maintenance Manuals is applicable but not necessarily limited to:
  - a. Major equipment.
  - b. Equipment used with electrical motor loads of 1/6 HP nameplate or greater.
  - c. Specialized equipment including valves and instrumentation and control system components for HVAC and process systems such as meters, recorders, and transmitters.
  - d. Valves greater than in diameter
  - e. Wastewater control gates
2. Prepare operation and maintenance manuals that include, but are not necessarily limited to, the following detailed information, as applicable.
  - a. Standard manual information must identify which equipment, model number, and accessories are provided. The use of pointers is acceptable for this purpose. All other equipment listed shall be clearly marked out or deleted. All marks shall be made so that they show up on copied pages.
  - b. Equipment function, normal operating characteristics, limiting operations.
  - c. Assembly, disassembly, installation, alignment, adjustment, and checking instructions.

- d. Operating instructions for start-up, routine and normal operation, regulation and control, shutdown, and emergency conditions.
- e. Lubrication maintenance instructions and recommended lubricants for installation and preventive maintenance.
- f. Safety considerations
- g. Guide to “troubleshooting”
- h. Parts list and predicted life of parts subject to wear. Part list should indicate material of construction, generic title and identification number. Include address and phone numbers for equipment manufacturer, supplier and closest parts warehouse.
- i. Outline, cross-section, and assembly drawings; engineering data; and electrical diagrams, including elementary diagrams, wiring diagrams, connection diagrams, work description of wiring diagrams and interconnection diagrams.
- j. Test data and performance curves.
- k. A list of recommended spare parts with a price list and a list of spare parts provided under these specifications.
- l. Copies of installation instruction, parts lists or other documents packed with equipment when delivered.
- m. Instrumentation or tag numbers relating the equipment back to the Contract Documents.
- n. Include a filled-out copy of the Equipment Record Sheet as the first page(s) of each Operation and Maintenance Manual. Complete maintenance requirements in detail. Simple reference to the Manual is not acceptable.
- o. For equipment items involving components or subunits, an Equipment Record Sheet for each operating component or subunit is required.
- p. Operation and Maintenance Manuals for pumping equipment shall also include: Manufacturers written guarantee that pumping equipment operates with efficiencies, heads and flow ranges indicated and meets vibration and critical speed limitations indicated.

## **PART 2 – PRODUCTS**

Not Used.

## **PART 3 – EXECUTION**

Not Used.

**END OF SECTION 01300**