

1. SHOP DRAWINGS AND PRODUCT DATA

- .1 "Shop Drawings" mean custom drawings, product data, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by the Contractor to illustrate details of a portion of the Work.
- .2 Arrange for the preparation of clearly identified shop drawings as specified or as the Contract Administrator may reasonably request. Shop drawings are to clearly indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of the Work. Where articles or equipment attach or connect to other articles or equipment, clearly indicate that all such attachments and connections have been properly coordinated, regardless of the trade under which the adjacent articles or equipment will be supplied and installed. Shop drawings are to indicate their relationship to design drawings and specifications. Notify the Contract Administrator in writing of any deviations in shop drawings from the requirements of the Contract Documents.
- .3 Shop drawings shall be submitted with a copy of the associated specification. For each specification clause, note compliance or deviation from specification. Provide full explanation for any deviation. Shop drawings submitted without the associated specification sections will be returned to the Contractor as "Rejected".
- .4 Examine all shop drawings prior to submission to the Contract Administrator to ensure that all necessary requirements have been determined and verified and that each shop drawing has been checked and coordinated with the requirements of the Work and the Contract Documents. Examination of each shop drawing shall be indicated by stamp, date and signature of a responsible person of the Subcontractor for supplied items and of the General Contractor for fabricated items. Shop drawings not stamped, signed and dated will be returned without being reviewed and stamped Re-submit".
- .5 Submit shop drawings with reasonable promptness and in an orderly sequence so as to cause no delay in the Work. Failure to submit shop drawings in ample time is not to be considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed. Jointly prepare a schedule fixing the dates for submission and return of shop drawings.
- .6 The Contract Administrator will review and return shop drawings in accordance with the schedule agreed upon or otherwise with reasonable promptness so as to cause no delay in the Work.
- .7 Submit six (6) copies of white prints , plus one (1) copy of reproducibles, and six (6) copies of all fixture cuts and brochures.
- .8 Shop drawing review by the Contract Administrator is solely to ascertain conformance with the general design concept. Responsibility for approval of detail design inherent in shop drawings rests with the Contractor and review by the Contract Administrator shall not imply such approval.

- .9 Review by the Contract Administrator shall not relieve the Contractor of his responsibility for errors or omissions in shop drawings or for proper completion of the Work in accordance with the Contract Documents.
- .10 Responsibility for verification and correlation of field dimensions, fabrication processes, techniques of construction, installation and coordination of all parts of the Work rests with the Contractor.
- .11 Shop drawings will be returned to the Contractor with one of the following notations:
 - When stamped "REVIEWED" or "NO EXCEPTIONS TAKEN", distribute additional copies as required for execution of the Work.
 - When stamped "REVIEWED AS MODIFIED" or "MAKE NOTED CORRECTIONS", ensure that all copies for use are modified and distributed, same as specified for "REVIEWED".
 - When stamped "REVISE & RESUBMIT", make the necessary revisions, as indicated, consistent with the Contract Documents and submit again for review.
 - When stamped "NOT REVIEWED" or "REJECTED", submit other drawings, brochures, etc. for review consistent with the Contract Documents.
 - Only shop drawings bearing "REVIEWED", "NO EXCEPTIONS TAKEN", "MAKE NOTED CORRECTIONS", or "REVIEWED AS MODIFIED" shall be used on the Work unless otherwise authorized by the Contract Administrator.
- .12 After submittals are stamped "REVIEWED", "NO EXCEPTIONS TAKEN", "MAKE NOTED CORRECTIONS" or "REVIEWED AS MODIFIED", no further revisions are permitted unless re-submitted to the Contract Administrator for further review.
- .13 Any adjustments made on shop drawings by the Contract Administrator are not intended to change the Contract Price. If it is deemed that such adjustments affect the Contract Price, clearly state as such in writing prior to proceeding with fabrication and installation of work.
- .14 Make changes in shop drawings which the Contract Administrator may require consistent with Contract Documents. When re-submitting, notify the Contract Administrator in writing of any revisions other than those requested by the Contract Administrator.
- .15 Shop drawings indicating design requirements not included in the Contract Documents require the seal of a qualified Professional Engineer, registered in the province of the place of the Project. Consulting calculations shall be submitted for review, if requested, and sealed by a qualified Professional Engineer.
- .16 Only two (2) reviews of shop drawings will be made by the Contract Administrator at no cost. Each additional review will be charged to the Contractor at the Contract Administrator's scheduled rates. The Contract Administrator's charges for the additional work will be deducted from the Contractor's Progress Certificates.

2. SAMPLES

- .1 Submit samples for the Contract Administrator's review as specified or as the Contract Administrator may reasonably request. Clearly label samples as to origin and intended use in the Work. Reference samples to drawings and specifications.
- .2 Submit samples with reasonable promptness and in orderly sequence so as to cause no delay in the Work. Failure to submit samples in ample time is not to be considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed. Jointly prepare a schedule fixing the dates for submission and return of samples (refer to Section 01200 – Project Meetings).
- .3 Notify the Contract Administrator in writing, at the time of submission, of any deviations in samples from requirements of Contract Documents.
- .4 The Contract Administrator's review will be for conformity of design concept and general arrangement only. Such review is not to be considered relief of responsibility for errors or omissions in samples or of responsibility for meeting all requirements of the Contract Documents.
- .5 Any adjustments made on samples by the Contract Administrator are not intended to change the Contract Price. If it is deemed that such adjustments affect the Contract Price, clearly state as such in writing prior to proceeding with fabrication and installation of the Work.
- .6 Make changes in samples which the Contract Administrator may require consistent with Contract Documents.

3. OPERATING/MAINTENANCE MANUALS

- .1 For the guidance of the City's operating and maintenance personnel, the Contractor shall prepare operation and maintenance manuals for the Work, describing in detail the construction of each part of the Work and the recommended procedure for operation, servicing and maintenance.
- .2 Three (3) advance copies of the manuals shall be submitted prior to Substantial Performance of the Work and shipment for review and comments. A minimum of eight (8) weeks after review, six (6) copies of the final manuals shall be supplied. Each copy shall be clearly titled to show all of the information required by the Specifications as well as operational information including: the item of Work concerned, a City's contract number, the name and address of the Contractor, the issue date, operational information on equipment, cleaning and lubrication schedules, filters, overhaul and adjustment schedules.
- .3 All instructions in these manuals shall be in simple language to guide the City in the proper operation and maintenance of this installation.
- .4 Bind contents in a three-ring, hard covered, plastic jacketed binder. Organize contents into applicable sections of work, parallel to specifications break-down.

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- .5 In addition to information called for in the specifications, include the following:
- .1 Title sheet, labelled "Operation and Maintenance Instructions", and containing project name and date.
 - .2 List of contents.
 - .1 Brochures/catalogue excerpts of all architectural, mechanical and electrical components of the Work.
 - .2 Documentation of all test results.
 - .3 Complete set of equipment and assembly drawings.
 - .4 Installation, start-up, operation and maintenance manuals.
 - .5 Commissioning data sheets and reports.
 - .6 Air Balancing Reports.
 - .7 Spare parts lists/priced, and special tools requirements/priced.
 - .8 Any specific product or maintenance manual requirements from the Technical Specifications.
 - .3 Reviewed shop drawings of all equipment.
 - .4 As-built drawings of all mechanical and electrical/I&C installations.
 - .5 Full description of entire mechanical system and operation.
 - .6 Names, addresses and telephone numbers of all major Subcontractors and Suppliers.
 - .7 Detailed operating and maintenance instructions for all items of equipment, including a preventative maintenance program.
 - .8 The Contractor shall modify and supplement the manual as required by the Contract Administrator.
 - .9 Provide list of spare parts and consumables, including name and address of nearest supplier.
 - .10 The copies shall be supplied to the City before delivery and provision shall be made for additions and deletions which may be dictated by the City's operational experience. Where these amendments to the manuals are indicated to be necessary during initial operation before acceptance, the Contractor shall supply the amended sections free of charge.
 - .11 Payment for this Item of the Work, as listed in Form B: Prices, will not be issued until all requirements for the operating/maintenance manuals have been satisfied.

4. RECORD DRAWINGS

- .1 After award of Contract, the Contract Administrator will provide a complete set of drawings for the purpose of maintaining Project record drawings, electronic files in AutoCAD format will be supplied. Accurately record significant deviations from Contract Documents caused by site conditions and changes ordered by the Contract Administrator. Update daily.
- .2 Record locations of concealed elements of mechanical and electrical services.
- .3 Identify drawings as "Project Record Copy". Maintain in good condition and make available for inspection on site by Contract Administrator at all times.
- .4 On completion of the Work, two (2) weeks prior to final inspection, submit record drawings to Contract Administrator for review.
- .5 Within one month after return of record drawings by the Contract Administrator, obtain and pay for a complete set of original reproducible sepias. Transfer all changes from record drawings to electronic drawings (AutoCAD) and certify accuracy. Deliver electronic drawings to the Contract Administrator.

5. PHOTOGRAPHS AND PUBLICITY

- .1 No photographs of the site or of any portion of the Work will be permitted without prior approval of the Contract Administrator.
- .2 No press or publicity releases will be permitted without prior approval of the Contract Administrator.

6. PROCEDURES

- .1 The Contractor shall, if required by the Contract Administrator, submit for the review of the Contract Administrator method statements which describe in detail, supplement with drawings where necessary, the methods to be adopted for executing any portion of Work.
- .2 These statements shall also include details of constructional plant and labour to be employed. Acceptance by the Engineer shall not relieve the Contractor of any of his responsibilities, nor shall reasonable refusal to approve entitle the Contractor to extra payment or an extension of time.

END OF SECTION