

Part 1 General

1.1 SECTION INCLUDES

- .1 Operation and maintenance data.
- .2 As-built drawings, samples, and specifications.
- .3 Product data, materials and finishes, and related information.
- .4 Record documents.
- .5 Final site survey.
- .6 Equipment and systems.
- .7 Spare parts, special tools and maintenance materials.
- .8 Warranties and bonds.

1.2 SUBMISSION

- .1 Prepare instructions and data using personnel experienced in maintenance and operation of described products.
- .2 Revise content of documents as required prior to final submittal.
- .3 Two weeks prior to Substantial Performance of the Work, submit to the Contract Administrator, four final copies of operating and maintenance manuals in English.
- .4 Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.
- .5 If requested, furnish evidence as to type, source and quality of products provided.
- .6 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .7 Pay costs of transportation.

1.3 OPERATION AND MAINTENANCE MANUAL FORMAT

- .1 Organize data in the form of an instructional manual.
- .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
- .3 When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine.
- .4 Cover: Identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.

- .5 Arrange content by systems under Section numbers and sequence of Table of Contents.
- .6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .7 Text: Manufacturer's printed data, or typewritten data.
- .8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- .9 Provide 1:1 scaled CAD files in .dwg format on CD.

1.4 CONTENTS - EACH VOLUME

- .1 Table of Contents: provide title of project;
 - .1 date of submission;
 - .2 names, addresses, and telephone numbers of Contract Administrator and Contractor with name of responsible parties; and
 - .3 schedule of products and systems, indexed to content of volume.
- .2 For each product or system, list names, addresses and telephone numbers of Subcontractors and Suppliers, including local source of supplies and replacement parts.
- .3 Product Data: mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .5 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section [01 45 00 - Quality Control].

1.5 AS-BUILT DOCUMENTS AND SAMPLES

- .1 In addition to requirements in General Conditions, maintain at the site for Contract Administrator and the City of Winnipeg one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to the Contract.
 - .5 Reviewed shop drawings, product data, and samples.
 - .6 Field test records.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
- .2 Store as-built documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
- .3 Label as-built documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "AS-BUILT DOCUMENTS" in neat, large, printed letters.

- .4 Maintain as-built documents in clean, dry and legible condition. Do not use as-built documents for construction purposes.
- .5 Keep as-built documents and samples available for inspection by Contract Administrator.

1.6 RECORDING ACTUAL SITE CONDITIONS

- .1 Record information on set of black line opaque drawings, and in a copy of the Project Manual provided by Contract Administrator.
- .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:
 - .1 Measured depths of elements of foundation in relation to finish first floor datum.
 - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .4 Field changes of dimension and detail.
 - .5 Changes made by change orders.
 - .6 Details not on original Contract Drawings.
 - .7 References to related shop drawings and modifications.
- .5 Specifications: legibly mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Addenda and change orders.

1.7 RECORD DOCUMENTS

- .1 Prior to Substantial Performance of the Work, electronically transfer the marked up information from the as-built documents to a master set of drawing and specification files provided by the Contract Administrator, as follows:
 - .1 Drawings: AutoCAD Release 2000.
 - .2 Specifications: Microsoft Word 2003.
- .2 Mark revised documents as "RECORD DOCUMENTS". Include all revisions.
- .3 Employ a competent computer draftsman to indicate changes on the electronic set of record drawings. Provide updated record drawings in AutoCAD Release 2000.
- .4 Employ a competent specification writer to indicate changes to the electronic set of record specifications. Provide updated record specifications in Microsoft Word 2003.
- .5 Submit completed record documents to Contract Administrator on a CD-ROM, accompanied by 3 hard copy sets.

1.8 MATERIALS AND FINISHES

- .1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured products.
- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .3 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .4 Building Envelope: include copies of drawings of building envelope components, illustrating the interface with similar or dissimilar items to provide an effective air, vapour and thermal barrier between indoor and outdoor environments. Include an outline of requirements for regular inspections and for regular maintenance to ensure that on-going performance of the building envelope will meet the initial building envelope criteria.
- .5 Additional Requirements: as specified in individual specifications sections.

1.9 WARRANTIES AND BONDS

- .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
- .2 List Subcontractor, Supplier, and manufacturer, with name, address, and telephone number of responsible principal.
- .3 Obtain warranties and bonds, executed in duplicate by Subcontractors, Suppliers, and manufacturers, within ten days after completion of the applicable item of work.
- .4 Except for items put into use with City of Winnipeg's permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined.
- .5 Verify that documents are in proper form, contain full information, and are notarized.
- .6 Co-execute submittals when required.
- .7 Retain warranties and bonds until time specified for submittal.

END OF SECTION