

1. General

1.1 Section Includes

1.1.1 This section includes the submission requirements for various closeout documents including, but not limited to the following:

- As-built drawings.
- Final site survey data.
- Equipment Systems Operations Manuals.
- Equipment Systems Maintenance Manuals.
- Materials Manuals.
- Spare Parts Manuals.
- Equipment and Material Warranties Documentation and Tags.
- Special Tools.

1.2 Related Sections

1.2.1 Section 01 33 00 - Submittal Procedures.

1.2.2 Section 01 77 00 – Closeout Procedures.

1.3 References

1.3.1 Not applicable.

1.4 Submittals

1.4.1 Submittals: in accordance with Section 01 33 00 – Submittal Procedures.

1.4.2 Prepare submittals using personnel experienced in the maintenance and operation of products and equipment described in each submission.

1.4.3 The Contractor shall submit two (2) draft copies of each required submittal for review by the Departmental Representative at least six (6) weeks prior to substantial completion of the work.

1.4.4 The Departmental Representative Commissioning Team shall review the submitted document within ten (10) working days and return one (1) copy of each draft document complete with Departmental Representative's and Commissioning Team Comments.

1.4.5 Revise content of documents as required prior to final submittal.

- 1.4.6 Two weeks prior to Substantial Performance of the Work, submit to the Departmental Representative four (4) final copies of operating and maintenance manuals in English.
- 1.4.7 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.
- 1.4.8 Furnish evidence, if requested, for type, source and quality of products provided.
- 1.4.9 Defective products will be rejected, regardless of previous inspections. Replace products at Contractor's own expense.

1.5 Format

- 1.5.1 Organize data as an instructional manual.
- 1.5.2 Binders: Vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
- 1.5.3 When multiple binders are used correlate data into related consistent groupings. Identify contents of each binder on spine.
- 1.5.4 Cover: Identify each binder with type or printed title "Project Record Documents"; list title of project and identify subject matter of contents.
- 1.5.5 Arrange content by systems, under Section numbers and sequence of Table of Contents.
- 1.5.6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- 1.5.7 Text: Manufacturer's printed data, or typewritten data.
- 1.5.8 Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to the size of text pages.
- 1.5.9 Provide 1:1 scaled CAD files in drawing (.dgn) format on CD.

1.6 Contents – Each Volume

- 1.6.1 Table of Contents: provide title of project:
 - Date of submission.
 - Names, addresses, and telephone numbers of Departmental Representative and Contractor.
 - Schedule of products and systems, indexed to content of volume.

1.6.2 For each product or system:

- List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts if applicable.

1.6.3 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.

1.6.4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control in flow diagrams.

1.6.5 Typewritten Text: as required to supplement the product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified.

1.7 As-Built Drawings and Samples

1.7.1 Maintain for or submit to Departmental Representative one (1) record copy of:

- Contract Drawings.
- Specifications.
- Addenda.
- Change Orders and other modifications to the Contract.
- Reviewed shop drawings, product data, and samples.
- Field test records.
- Inspection certificates.
- Manufacturer's certificates.

1.7.2 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.

1.7.3 Keep record documents and samples available for review/inspection by Departmental Representative.

1.8 Recording Actual Site Conditions

1.8.1 Record information on set of drawings provided by Departmental Representative.

1.8.2 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.

1.8.3 Record information concurrently with construction progress. Do not conceal work until required information is recorded.

1.8.4 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including, but not limited to:

- Measure horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
- Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
- Record bedrock profile elevations as applicable.
- Record field changes of dimension and detail.
- Record changes made by change orders.
- Record details not on original Contract Drawings.
- References to related shop drawings and specifications.

1.8.5 Specifications: mark each item to record actual construction, including:

- Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
- Changes made by addenda and change orders.

1.8.6 Other Documents: maintain manufacturer's certifications, inspection certifications and field test records required by individual specification sections.

1.9 Final Surveys

1.9.1 Submit final site surveys certificate, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.

- Horizontal and vertical coordinates of all items existing and installed.
- Bedrock profile elevations as applicable.
- All foundation information including underside and top of foundations.
- Location and inverts of all culverts and piping.
- Centerline profile of roads.
- Road cross sections every 100 m to extend 5 m outside of clearing limits.
- Site cross sections every 50 m and extend 20 m beyond limits of Work.
- Centreline profile of all utilities.
- Sewer inverts.
- Manholes, Lift Stations, Catch Basins, Ditch Inlets, Gabion Mats, locations and inverts.

- Fire Hydrants, Valves, Water Mains, Tees, Bends, Reducers, Crosses, Curb Stops, Corporation Stops, Invert elevations.
- All underground piping, conduits and duct banks.
- All other visible appurtenances and new construction features.

1.10 Spare Parts, Maintenance Materials, Special Tools

1.10.1 Provide spare parts, in quantities specified in individual specification sections.

1.10.2 Provide items of same manufacturer and quality as items in Work.

1.11 Storage, Handling and Protection

1.11.1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.

1.11.2 Store in original and undamaged condition with manufacturer's seal and label attached intact.

1.11.3 Store components subject to damage from weather in weatherproof enclosures.

1.11.4 Remove and replace damaged products at Contractor's expense and to the satisfaction of the Departmental Representative.

1.12 Warranties and Bonds

1.12.1 Develop warranty management plan to contain information relevant to warranties.

1.12.2 Submit warranty management plan, thirty (30) days before planned pre-warranty conference, to Departmental Representative and Departmental Representative for approval.

1.12.3 Warranty management plan to include required actions and documents to ensure that the Departmental Representative receives the warranties to which they are entitled.

1.12.4 Submit warranty information made available during the construction phase, to Departmental Representative for approval prior to each monthly progress estimate.

1.12.5 Assemble approved information in a binder and submit upon acceptance of the Work. Organize binder as follows:

- Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
- List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principle.
- Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of Work.

- Verify that the document is in proper form, contain full information and are notarized.
 - Retain warranties and bonds until time specified for submittal.
- 1.12.6 Except for items put into use with the Departmental Representative's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
- 1.12.7 Conduct joint four (4) month and nine (9) month warranty inspection, measured from the time of acceptance, by the Departmental Representative.
- 1.12.8 Respond in a timely manner to oral or written notification of required construction warranty repair Work.
- 1.12.9 Written verification will follow oral instructions. Failure to respond will be cause for the Departmental Representative to proceed with action against the Contractor.
- 1.13 Pre-Warranty Conference**
- 1.13.1 Meet with Departmental Representative, to develop understanding of requirements of this section. Schedule meeting prior to contract completion, and at a time designated by the Departmental Representative.
- 1.13.2 The Departmental Representative will establish communication procedures for:
- Notification of construction warranty defects.
 - Determine priorities for the type of defect.
 - Determine reasonable time for response.
- 1.13.3 Provide name, telephone number and address of licensed and bonded company that is authorized to initiate and pursue construction warranty Work action.
- 1.13.4 Ensure contact is located within the local service area of warranted construction, is continuously available and is responsive to inquiries for warranty Work action.
- 1.14 Warranty Tags**
- 1.14.1 Tag, at time of installation, each warranted item. Provide durable, oil and water resistant tag approved by the Departmental Representative.
- 1.14.2 Attach tags with copper wire and spray with waterproof silicone coating.
- 1.14.3 Leave date of acceptance until project is accepted for occupancy.
- 1.14.4 Indicate following information on tag:
- Type of product/material.

- Model number.
- Serial number.
- Contract number.
- Warranty period.
- Inspector's signature.
- Construction Contractor.

2. Products

2.1 Not used

3. Execution

3.1 Not used

4. Measurement and Basis for Payment

4.1 Measurement for Payment

4.1.1 This item will not be measured for payment.

4.2 Basis for Payment

4.2.1 No separate or direct payment will be made for work under this Section, which will be considered incidental to work under this Contract. Costs will be deemed to be included in the unit and lump sum prices quoted in the Schedule of Quantities and Prices.