

## 1.1 RELATED DOCUMENTS

- .1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- .2 These project documents have been prepared for use with and require being read in conjunction with the "NL Master Specifications for Municipal Water, Sewer and Roads" as published by the Department of Transportation and Infrastructure. Bidders must download the specifications book at the website below.
  - .1 <https://www.gov.nl.ca/ti/files/master-specifications-for-municipal-water-sewer-roads-2021.pdf>

## 1.2 SUMMARY

- .1 Types of items described in this Section:
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    - .1 Work Covered By the Contract Documents.
    - .2 Type of the Contract.
    - .3 Work Phases.
    - .4 Work Under Other Contracts.
    - .5 Products Ordered In Advance.
    - .6 Departmental Representative-Furnished Products.
    - .7 Use of Premises.
    - .8 Departmental Representative's Occupancy Requirements.
    - .9 Work Restrictions.
    - .10 Interpretation Of Documents
    - .11 Specification Formats and Conventions.
    - .12 Project Management and Coordination.
    - .13 Requests for Interpretation
    - .14 Construction Progress Documentation.
    - .15 Photographic Documentation.
    - .16 Submittal Procedures.
    - .17 Environmental Procedures.
    - .18 Quality Requirements.
    - .19 Regulatory Requirements.
    - .20 Temporary Facilities and Control.
    - .21 Temporary Barriers and Enclosures.
    - .22 Product Requirements.
    - .23 Execution.
    - .24 Construction Waste Management And Disposal.
    - .25 Closeout Procedures.
    - .26 Operation and Maintenance Data.

- .27 Project Record Documents.
- .28 Demonstration and Training.
- .2 Types of items you will not find described in this Section:
  - .1 Health and Safety Requirements

### **1.3 WORK COVERED BY CONTRACT DOCUMENTS**

- .1 Project Identification: Twillingate Traffic Control
  - .1 Project Location: Twillingate, NL.
  - .2 Departmental Representative: Department of Fisheries & Oceans (DFO)
    - .1 Departmental Representative: Public Services and Procurement Canada (PSPC), 10 Barters Hill, St. John's, NL. Telephone (866) 212-2271.
  - .3 The Work consists of the following:
    - .1 The supply and installation of two solar-powered, pole-mounted traffic control lights and all supplemental equipment to provide a functional traffic system.
      - .1 Supply and installation of two concrete base foundations c/w required reinforcement and base-plate anchoring. Contractor responsible for providing shop drawings of the pole bases stamped and signed by a Professional Engineer Registered in the Province of Newfoundland and Labrador.
      - .2 Supply and installation of two traffic poles and Davit arms c/w solar powered traffic controllers and LED traffic beacons. Contractor responsible for providing shop drawings of the pole and davit arm stamped and signed by a Professional Engineer Registered in the Province of Newfoundland and Labrador.
      - .3 Remote post-mounted traffic light activation buttons, including supply and install of new pressure-treated post and associated trenching for wired communication.
      - .4 Supply and installation of painted street markings.
      - .5 Supply and installation of required street signage. Including supply and install of post indicated on drawings.
      - .6 Development of Traffic Control Plan. Subject to review and approval of the Newfoundland Department of Transportation and Infrastructure prior to start of work. Plan is to be submitted no later than two-weeks prior to commencing work.
      - .7 Coordination of work with local, provincial, and federal AHJ's.
      - .8 Repair/replace all damage to adjacent surfaces, caused by work under this contract, to the satisfaction of the Departmental Representative.

### **1.4 TYPE OF CONTRACT**

- .1 Project will be constructed under a single prime contract.

## **1.5 WORK PHASES**

- .1 The Work shall be conducted in one (1) phase. However, the contractor must sequence the work to allow minimal impacts to local traffic flow.
- .2 Before commencing Work, submit a schedule showing the sequence, commencement, and completion dates.

## **1.6 WORK UNDER OTHER CONTRACTS**

- .1 General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.
- .2 Preceding Work: Departmental Representative has awarded / will award separate contract(s) for the following construction operations at Project site. Those operations are scheduled to be substantially complete before work under this Contract begins.
  - .1 No proceeding work planned.
- .3 Concurrent Work: Departmental Representative has awarded / will award separate contract(s) for the following construction operations at Project site. Those operations will be conducted simultaneously with work under this Contract.
  - .1 No concurrent work planned.
- .4 Future Work: Departmental Representative has awarded / will award separate contract(s) for the following additional work to be performed at site after Substantial Completion. Completion of that work will depend on successful completion of preparatory work under this Contract.
  - .1 No future work planned.

## **1.7 PRODUCTS ORDERED IN ADVANCE**

- .1 None.

## **1.8 DEPARTMENTAL REPRESENTATIVE-FURNISHED PRODUCTS**

- .1 No Departmental Representative-furnished products.

## **1.9 USE OF PREMISES**

- .1 General: Contractor shall have limited use of premises for construction operations as indicated on Drawings by the Contract limits.
  - .1 Coordinate project laydown area with Departmental Representative.
  - .2 Limited number of visitor parking spaces will be available, coordinate with Departmental Representative.
- .2 Use of Site: Limit use of premises to areas under construction. Do not disturb portions of Project site beyond areas in which the Work is indicated.

- .1 Departmental Representative Occupancy: Allow for Departmental Representative access of Project site.
- .2 Driveways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Departmental Representative, Departmental Representative's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
  - .1 Schedule deliveries to minimize use of driveways and entrances.
  - .2 Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

#### **1.10 DEPARTMENTAL REPRESENTATIVE'S OCCUPANCY REQUIREMENTS**

- .1 Full Departmental Representative Occupancy: Departmental Representative will occupy the adjacent premises during entire construction period. Cooperate with Departmental Representative during construction operations to minimize conflicts and facilitate Departmental Representative usage. Perform the Work so as not to interfere with Departmental Representative's operations. Maintain existing exits, unless otherwise indicated.
  - .1 Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Departmental Representative and authorities having jurisdiction.
  - .2 Provide not less than 72 hours' notice to Departmental Representative of activities that will affect Departmental Representative's operations.

#### **1.11 WORK RESTRICTIONS**

- .1 On-Site Work Hours: Work shall be generally performed during normal business working hours, Monday through Friday, except otherwise indicated and coordinated with the Departmental Representative.
  - .1 Activities that will generate excessive noise during construction shall be coordinated with the Departmental Representative and scheduled for evenings and weekends.
- .2 Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Departmental Representative or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
  - .1 Notify Departmental Representative not less than two days in advance of proposed utility interruptions.
  - .2 Do not proceed with utility interruptions without Departmental Representative's written permission.
- .3 Non-smoking Building: Smoking is not permitted within the building or within 8 m of entrances, operable windows, or outdoor air intakes.

## **1.12 INTERPRETATION OF DOCUMENTS**

- .1 In the event of discrepancies or conflicts in interpreting the Plans (drawings) and Specifications,
  - .1 Supplementary General Conditions take precedence over all other documents.
  - .2 General Conditions take precedence over drawings and specifications.
  - .3 Division 1 Sections take precedence over technical specification sections in other Divisions.
  - .4 Legends and schedules take precedence over drawings and Specifications, whether they are bound with the specifications or integral with the drawings.
  - .5 Specifications take precedence over all other drawings.
- .2 Plans (drawings) and Specifications are complementary. When work is shown or mentioned on the drawings but is not indicated in the Specifications, or when work is indicated in the Specifications but is not shown or mentioned on the Drawings, it shall nevertheless be included in the Contract.

## **1.13 SPECIFICATION FORMATS AND CONVENTIONS**

- .1 Specification Format:
  - .1 Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.
  - .2 Division 01: Sections in Division 01 govern the execution of the Work of all Sections in the Specifications.
- .2 The words *shall*, *shall be*, or *shall comply with*, depending on the context, are implied where a colon (:) is used within a sentence or phrase.

## **1.14 PROJECT MANAGEMENT AND COORDINATION**

- .1 Coordination
  - .1 Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
- .2 Administrative and supervisory personnel
  - .1 General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.
  - .2 Maintain same superintendent on Project for duration of Project. Immediately notify Departmental Representative if superintendent should become unavailable to work and immediately replace with an alternate person acceptable to the Departmental Representative.

- .3 Project meetings
  - .1 General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
  - .2 Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Departmental Representative, within three days of the meeting.
  - .3 Progress Meetings: Conduct progress meetings at bi-weekly intervals. Coordinate dates of meetings with preparation of payment requests.

#### **1.15 REQUESTS FOR INTERPRETATION (RFIS)**

- .1 Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
  - .1 Coordinate and submit RFIs in a prompt manner to avoid delays in Contractor's work or work of subcontractors.
- .2 Allow seven working days for Departmental Representative's response for each RFI.
- .3 If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Departmental Representative in writing within 10 days of receipt of the RFI response.

#### **1.16 CONSTRUCTION PROGRESS DOCUMENTATION**

- .1 Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's Construction Schedule within 30 days of date established for the Notice of Award.
  - .1 Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
  - .2 At bi-weekly intervals, update schedule to reflect actual construction progress and activities. Issue schedule prior to each regularly scheduled progress meeting.
- .2 Reports
  - .1 Daily Construction Reports: Prepare a daily construction report and submit to Departmental Representative each week recording the following information concerning events at Project site:
    - .1 List of subcontractors at Project site.
    - .2 List of separate contractors at Project site.
    - .3 Approximate count of personnel at Project site.
    - .4 Equipment at Project site.
    - .5 Material deliveries.
    - .6 High and low temperatures and general weather conditions.
    - .7 Accidents.
    - .8 Meetings and significant decisions.
    - .9 Unusual events.

- .10 Stoppages, delays, shortages, and losses.
- .11 Meter readings and similar recordings.
- .12 Emergency procedures.
- .13 Orders and requests of authorities having jurisdiction.
- .14 Change Orders received and implemented.
- .15 Construction Change Directives received and implemented.
- .16 Services connected and disconnected.
- .17 Equipment or system tests and start-ups.
- .18 Partial Completions and occupancies.
- .19 Substantial Completions authorized.
- .2 Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

#### **1.17 PHOTOGRAPHIC DOCUMENTATION**

- .1 Preconstruction Photographs: Before starting construction take, digital photographs of Project site and surrounding areas, including existing items to remain during construction, from different vantage points.
- .2 Periodic Construction Photographs: Take digital photographs weekly, with timing each month adjusted to coincide with the cut-off date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- .3 E-mail or otherwise submit photos to Departmental Representative on monthly basis to coincide with each Application for Payment.

#### **1.18 SUBMITTAL PROCEDURES**

- .1 Contractor's Review
  - .1 Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Departmental Representative.
- .2 Submittal Procedures
  - .1 Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
    - .1 Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

- .2 Submit electronic pdf copy of each submittal, unless otherwise indicated. The Departmental Representative will return by e-mail PDFs of the reviewed documents.
- .3 Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Departmental Representative`s receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
  - .1 Initial Review: Allow 10 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Departmental Representative will advise Contractor when a submittal being processed must be delayed for coordination.
  - .2 Resubmittal Review: Allow 10 days for review of each resubmittal.
  - .3 Sequential Review: Where sequential review of submittals by Departmental Representative`s consultants, Departmental Representative, or other parties is indicated, allow 15 days for initial review of each submittal.
- .4 Departmental Representative will review each submittal, make marks to indicate corrections or modifications required, and return it. Departmental Representative will stamp each submittal with an action stamp and will mark appropriately to indicate action, as follows:
  - .1 REVIEWED
  - .2 REVIEWED AS NOTED
  - .3 REVISE AND RESUBMIT
  - .4 NOT REVIEWED.

## 1.19 ENVIRONMENTAL PROCEDURES

- .1 Definitions
  - .1 Hazardous Material: Product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released into the environment.
- .2 Fires and burning of rubbish on site not permitted.
- .3 Store, handle, and dispose of hazardous materials in accordance with applicable federal and provincial laws, regulations, codes and guidelines. Store in location that will prevent spillage into the environment
- .4 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
  - .1 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .5 Protect any trees and plants on site and adjacent properties that are in immediate area of construction.

- .1 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .2 Restrict tree removal to areas indicated or designated by Departmental Representative.
- .6 Minimize stripping of topsoil and vegetation.

## 1.20 QUALITY REQUIREMENTS

- .1 Conflicting Requirements
  - .1 General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Departmental Representative for a decision before proceeding.
  - .2 Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Departmental Representative's Representative for a decision before proceeding.
- .2 Quality Control
  - .1 Departmental Representative Responsibilities: Where quality-control services are indicated as Departmental Representative's responsibility, Departmental Representative will engage a qualified testing agency to perform these services.
    - .1 Payment for these services will be made by the Departmental Representative.
    - .2 Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
  - .2 Tests and inspections not explicitly assigned to Departmental Representative are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
    - .1 Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
    - .2 Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
    - .3 Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.

## **1.21 REGULATORY REQUIREMENTS**

- .1 Perform Work in accordance with National Building Code of Canada (NBC) including all amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2 Meet or exceed requirements of:
  - .1 Contract documents.
  - .2 Specified standards, codes, and referenced documents.

## **1.22 TEMPORARY FACILITIES AND CONTROLS**

- .1 Temporary Utility Installation
  - .1 General: Install temporary service or connect to existing service.
    - .1 Arrange with utility company, Departmental Representative, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
  - .2 Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
  - .3 Water Service: If the Departmental Representative has existing water service it may be used if it does not impact on the Departmental Representative's need. Otherwise install water service and distribution piping in sizes and pressures adequate for construction.
  - .4 Sewers and Drainage: Provide temporary utilities as required to remove effluent lawfully.
  - .5 Heating: Provide temporary heating as required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
  - .6 Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
    - .1 Install electric power service overhead, unless otherwise indicated.
    - .2 If the Departmental Representative has an existing power source, the contractor may access it for temporary power provided it does not impact the Departmental Representative's needs.
  - .7 Lighting: Provide temporary lighting with local switching as required to provide adequate illumination for construction operations, observations, inspections, and traffic conditions.
  - .8 Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
  - .9 Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other

construction operations, and similar activities. Provide temporary weather tight enclosure for building exterior.

- .10 Tree and Plant Protection: Install temporary fencing as required to protect trees and plants intended to remain. Install protection outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- .11 Site Enclosure Fence: Before construction operations begin, furnish, and install site enclosure fence in a manner as required to prevent people and animals from easily entering site except by entrance gates.

.2 Operation, Termination, and Removal

- .1 Maintain facilities in good operating condition until removal.
- .2 Remove each temporary facility when need for its service has ended.

**1.23 TEMPORARY BARRIERS AND ENCLOSURES**

.1 Hoarding

- .1 For work involving the excavation for new foundations or the erection of new structures outside of an enclosure, provide hoarding.
- .2 Erect and maintain hoarding to provide pedestrian walkways including signage to allow access to the building, and around the construction site for the duration of the construction work.
- .3 Move hoarding as necessary when construction activities move to the next phase/sequence of the Work.

**1.24 PRODUCT REQUIREMENTS**

.1 Manufacturer's Instructions

- .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.
- .2 Notify Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, so that Departmental Representative may establish course of action.

.2 Quality

- .1 Products, materials, equipment, and articles (referred to as products throughout specifications) incorporated in Work shall be new, not damaged, or defective, and of best quality (compatible with specifications) for purpose intended. If requested, furnish evidence as to type, source, and quality of products provided.
- .2 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.

- .3 Should any dispute arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .4 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.
- .3 Product Warranties
  - .1 Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
- .4 Product Selection Procedures
  - .1 General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.

## 1.25 EXECUTION

- .1 Materials
  - .1 Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually fully match in-place adjacent surfaces where possible.
  - .2 If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to the Departmental Representative for the visual and functional performance of in-place materials.
- .2 Construction Layout
  - .1 Where work involves construction outside of an existing footprint, engage a land surveyor to lay out the Work using accepted surveying practices.
  - .2 On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified location certificate showing dimensions, locations, angles, and elevations of construction and site work.
- .3 Installation
  - .1 General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
    - .1 Make vertical work plumb and make horizontal work level.
    - .2 Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
    - .3 Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
    - .4 Maintain minimum clearance from adjacent overhead powerlines. Coordinate with NL Power.
  - .2 Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

- .3 Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
  - .1 Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Departmental Representative.
- .4 Cutting And Patching
  - .1 Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
    - .1 Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
  - .2 Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
- .5 Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
- .6 Progress Cleaning
  - .1 General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
  - .2 Site: Maintain Project site free of waste materials and debris.
- .7 Correction Of the Work
  - .1 Repair or remove and replace defective construction. Restore damaged substrates and finishes.
  - .2 Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
  - .3 Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- .8 Protection Of Installed Construction
  - .1 Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
  - .2 Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

## **1.26 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**

- .1 Waste Reduction

- .1 Reduce construction waste during installation work. Undertake practices which will minimize waste and optimize full use of new materials on site, such as:
  - .1 Use of a central cutting area to allow for easy access to off-cuts;
  - .2 Use of off-cuts for blocking and bridging elsewhere.
  - .3 Use of effective and strategically placed facilities on site for storage and staging of left-over or partially cut materials (such as gypsum board, plywood, ceiling tiles, insulation etc...) to allow for easy incorporation into
- .2 Material Source Separation Process
  - .1 Perform demolition and removal of existing components and equipment following a systematic deconstruction process.
  - .2 Separate materials and equipment at source, carefully dismantling, labelling and stockpiling alike items for the following purposes:
    - .1 Reinstallation into the work where indicated.
    - .2 Salvaging reusable items not needed in project which Contractor may sell to other parties. Sale of such items not permitted on site.
    - .3 Sending as many items as possible to locally available recycling facility.
    - .4 Segregating remaining waste and debris into various individual waste categories for disposal in a *non-mixed state* as recommended by waste processing/landfill sites.
- .3 Disposal Requirements
  - .1 Dispose of waste only at approved waste processing facility or landfill sites approved by authority having jurisdiction.

## 1.27 CLOSEOUT PROCEDURES

- .1 Substantial Completion
  - .1 Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
    - .1 Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
    - .2 Advise Departmental Representative of pending insurance changeover requirements.
    - .3 Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
    - .4 Obtain and submit releases permitting Departmental Representative unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
    - .5 Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.

- .6 Deliver tools, spare parts, extra materials, and similar items to location designated by Departmental Representative. Label with manufacturer's name and model number where applicable.
  - .7 Make final changeover of permanent locks and deliver keys to Departmental Representative. Advise Departmental Representative's personnel of changeover in security provisions.
  - .8 Complete start-up testing of systems.
  - .9 Terminate and remove temporary facilities from Project site, along with mock-ups, construction tools, and similar elements.
  - .10 Submit changeover information related to Departmental Representative's occupancy, use, operation, and maintenance.
  - .11 Complete final cleaning requirements, including touch-up painting.
  - .12 Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- .2 Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Departmental Representative will either proceed with inspection or notify Contractor of unfulfilled requirements. Departmental Representative will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Departmental Representative, that must be completed or corrected before certificate will be issued.
- .1 Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
- .2 Final Completion
- .1 Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
    - .1 Submit a final Application for Payment according to the General Conditions.
    - .2 Submit certified copy of Departmental Representative's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Departmental Representative. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
    - .3 Submit evidence of final, continuing insurance coverage complying with insurance requirements.
    - .4 Instruct Departmental Representative's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
  - .2 Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Departmental Representative will either proceed with inspection or notify Contractor of unfulfilled requirements. Departmental Representative will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
    - .1 Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

- .3 Final Cleaning
  - .1 General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
  - .2 Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
- .4 Warranty
  - .1 Without restricting any warranty or guarantee implied or stipulated by law the Contractor shall at their own expense rectify and make good any defect or fault however caused appearing within a period of one (1) year from the date of Substantial Completion of the Work provided that the Contractor shall not be responsible for any defect or fault resulting from the design of the Work.
  - .2 The Contractor shall correct and/or pay for any damage to other work resulting from any corrections required under the conditions of 1.27.4.1.
  - .3 Neither the Engineer/Architect's final certificate nor payment thereunder shall relieve the Contractor
  - .4 from his responsibility hereunder.
  - .5 The Departmental Representative and/or the Engineer/Architect shall give the Contractor written notice of observed defects

## **1.28 OPERATION AND MAINTENANCE DATA**

- .1 Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- .2 Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
- .3 Manual Contents:
  - .1 Produce and compile one electronic, PDF, document and submit to Departmental Representative for review.
    - .1 Manual shall contain; a cover sheet, table of contents (bookmarked for ease of reference), list of spare parts, warranty information, manufacturers literature, shop drawings, certificates, and other documentation that is be required to operate and maintain the installed Work.

## **1.29 PROJECT RECORD DOCUMENTS**

- .1 Record Drawings

- .1 Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
- .2 Mark Record Prints to show the actual installation where installation varies from that shown originally.
- .3 Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
  - .1 Accurately record information in an understandable drawing technique.
  - .2 Record data as soon as possible after obtaining it. Record and check the mark-up before enclosing concealed installations.
- .4 Content: Types of items requiring marking include, but are not limited to, the following:
  - .1 Dimensional changes to Drawings.
  - .2 Revisions to details shown on Drawings.
  - .3 Depths of foundations.
  - .4 Locations and depths of underground utilities.
  - .5 Revisions to routing of piping and conduits.
  - .6 Revisions to electrical circuitry.
  - .7 Actual equipment locations.
  - .8 Locations of concealed internal utilities.
  - .9 Changes made by Change Order or Change Directive.
  - .10 Changes made following Departmental Representative's written orders.
  - .11 Details not on the original Contract Drawings.
  - .12 Field records for variable and concealed conditions.
  - .13 Record information on the Work that is shown only schematically.
- .5 Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
- .6 Mark record sets with erasable, red-coloured pencil. Use other colours to distinguish between changes for different categories of the Work at same location.
- .7 Mark important additional information that was either shown schematically or omitted from original Drawings.
- .8 Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- .9 Submit record drawings to Departmental Representative prior to requesting Substantial Completion inspection.

### **1.30 DEMONSTRATION AND TRAINING**

- .1 Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, and maintenance of each item of maintenance of each item of equipment.
- .2 Instruct personnel in all phases of operation and maintenance using operation and maintenance manuals as the basis of instruction.

- .3 Review contents of manual in detail to explain all aspects of operation and maintenance.
- .4 Prepare and insert additional data in operations and maintenance manuals when the need for additional data becomes apparent during instructions.
- .5 The Contractor shall be responsible for training coordination and scheduling and ultimately for ensuring that training is completed.

**END OF SECTION**