

PART 1 - GENERAL

<u>1.1 SECTION INCLUDES</u>	.1	Title and description of Work.
	.2	Work sequence.
	.3	Contractor use of premises.
	.4	Owner occupancy.
	.5	Alterations to existing site.
<u>1.2 PRECEDENCE</u>	.1	For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.
<u>1.3 RELATED SECTIONS</u>	.1	Section 01 33 00 - Submittal Procedures.
<u>1.4 WORK COVERED BY CONTRACT DOCUMENTS</u>	.1	Work of this Contract comprises the removal of existing airfield lighting equipment and the installation of new airfield lighting equipment located at St. Anthony Airport, Newfoundland and Labrador; and further identified as "Airfield Lighting Restoration".
<u>1.5 COST BREAKDOWN</u>	.1	Within one week of notification of acceptance of bid furnish a cost breakdown by Section aggregating contract price.
	.2	Within 48 hours of bid acceptance submit a list of subcontractors
<u>1.6 WORK SEQUENCE</u>	.1	Coordinate Progress Schedule and coordinate with Owner Occupancy during construction.
	.2	Maintain fire access/control.

1.7 CONTRACTOR USE OF SITE .1 Coordinate use of site under direction of Departmental Representative.

1.8 OWNER OCCUPANCY .1 Owner will occupy site during entire construction period for execution of normal operations.
.2 Cooperate with Departmental Representative in scheduling operations to minimize conflict and to facilitate Owner usage.

1.9 ALTERATIONS TO EXISTING SITE .1 Hand over all removed materials and equipment to Airport Manager.
.2 Dispose off site all concrete foundations.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not used.

PART 1 - GENERAL

- 1.1 DEFINITIONS
- .1 Activity: element of Work performed during course of Project. Activity normally has expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.
 - .2 Bar Chart (GANTT Chart): graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized project management system.
 - .3 Baseline: original approved plan (for project, work package, or activity), plus or minus approved scope changes.
 - .4 Construction Work Week: Monday to Friday, inclusive, will provide five day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.
 - .5 Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other project element. Usually expressed as workdays or workweeks.
 - .6 Master Plan: summary-level schedule that identifies major activities and key milestones.
 - .7 Milestone: significant event in project, usually completion of major deliverable.
 - .8 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.
 - .9 Project Planning, Monitoring and Control System: overall system operated by Departmental Representative to enable

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| <u>1.1 DEFINITIONS</u>
(Cont'd) | .9 | (Cont'd)
monitoring of project work in relation to
established milestones. |
| <u>1.2 REQUIREMENTS</u> | .1 | Ensure Master Plan and Detail Schedules are
practical and remain within specified Contract
duration. |
| | .2 | Plan to complete Work in accordance with
prescribed milestones and time frame. |
| | .3 | Limit activity durations to maximum of
approximately 10 working days, to allow for
progress reporting. |
| | .4 | Ensure that it is understood that Award of
Contract or time of beginning, rate of
progress, Certificate of Substantial
Performance and Certificate of Completion as
defined times of completion are of essence of
this contract. |
| <u>1.3 SUBMITTALS</u> | .1 | Provide submittals in accordance with Section
01 33 00. |
| | .2 | Submit to Departmental Representative within
10 working days of Award of Contract Bar
(GANTT) Chart as Master Plan for planning,
monitoring and reporting of project progress. |
| | .3 | Submit Project Schedule to Departmental
Representative within 5 working days of
receipt of acceptance of Master Plan. |
| <u>1.4 MASTER PLAN</u> | .1 | Structure schedule to allow orderly planning,
organizing and execution of Work as Bar Chart
(GANTT). |
| | .2 | Departmental Representative will review and
return revised schedules within 5 working
days. |
| | .3 | Revise impractical schedule and resubmit
within 5 working days. |
| | .4 | Accepted revised schedule will become Master
Plan and be used as baseline for updates. |
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- 1.5 PROJECT SCHEDULE REPORTING
- .1 Update Project Schedule on weekly basis reflecting activity changes and completions, as well as activities in progress.
 - .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

- 1.6 PROJECT MEETINGS
- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.
 - .2 Weather related delays with their remedial measures will be discussed and negotiated.
 - .3 Departmental Representative shall prepare minutes of meeting.

PART 2 - PRODUCTS

- 2.1 NOT USED
- .1 Not used.

PART 3 - EXECUTION

- 3.1 NOT USED
- .1 Not used.

PART 1 - GENERAL

1.1 SECTION
INCLUDES

- .1 Shop drawings and product data.
- .2 Fees and permits.

1.2 ADMINISTRATIVE

- .1 Submit to Departmental Representative submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Work affected by submittal shall not proceed until review is complete.
- .3 Present shop drawings, product data, Commissioning documentation and samples in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected.
- .6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are coordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.

- 1.2 ADMINISTRATIVE (Cont'd)
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .10 Keep one reviewed copy of each submission on site.
- 1.3 SHOP DRAWINGS AND PRODUCT DATA
- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .3 Allow 5 days for Departmental Representative's review of each submission.
- .4 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .5 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of any revisions other than those requested.
- .6 Accompany submissions with transmittal letter, in duplicate, containing:
- .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
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1.3 SHOP DRAWINGS
AND PRODUCT DATA
(Cont'd)

- .7 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.
 - .11 Equipment identification.
- .8 After Departmental Representative's review, distribute copies.
- .9 Submit 3 prints of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
- .10 Submit 3 prints of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
- .11 Submit 3 prints of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.
- .12 Delete information not applicable to project.
- .13 Supplement standard information to provide details applicable to project.
- .14 If upon review by Departmental Representative, no errors or omissions are

1.3 SHOP DRAWINGS
AND PRODUCT DATA
(Cont'd)

- .14 (Cont'd)
discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .15 The review of shop drawings by Public Works and Government Services Canada (PWGSC) is for sole purpose of ascertaining conformance with general concept. This review shall not mean that PWGSC approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting all requirements of construction and Contract Documents. Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of all sub-trades.

1.4 CONSTRUCTION
PHOTOGRAPHS

- .1 Submit electronic copy of colour digital photography in jpg format, standard resolution.
- .2 Identification: name and number of project and date of exposure indicated.
- .3 Number of viewpoints: determined by Departmental Representative.
- .4 Frequency: as directed by Departmental Representative.

1.5 FEES, PERMITS
AND CERTIFICATES

- .1 Provide authorities having jurisdiction with information requested.
- .2 Pay fees and obtain certificates and permits required.
- .3 Furnish certificates and permits.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

PART 1 - GENERAL

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| <u>1.1 GENERAL PROTECTION</u> | .1 | Do not disrupt airport business except as permitted by Departmental Representative |
| | .2 | Provide temporary protection for safe handling of public, personnel, pedestrians and vehicular traffic. |
| | .3 | Provide barricades and lights where directed. |
| <u>1.2 MOVEMENT OF EQUIPMENT AND PERSONNEL</u> | .1 | In areas of airport not closed to aircraft traffic:
.1 Obtain Departmental Representative's approval on scheduling of Work.
.2 Control movements of equipment and personnel as directed by Departmental Representative.
.3 Provide qualified field personnel at locations designated by Departmental Representative to relay signals from airport traffic control tower to equipment and personnel wishing to cross live traffic areas.
.4 Obey signals from airport traffic control tower instantly. |
| <u>1.3 UNSERVICEABLE AREAS</u> | .1 | Mark off areas made unserviceable for aircraft by Work of this Contract by providing plainly visible danger markings by day and red lights by night. |
| | .2 | Open flames and inflammable fuels are not permitted. |
| | .3 | Park equipment not in use and stockpile materials so that stockpile tops are below 50 to 1 ratio from ends of useable landing strip and below 20 to 1 ratio from sides of aircraft traffic areas. Mark tops with red lights as directed by Departmental Representative. |
| <u>1.4 TRENCHING</u> | .1 | Obtain Departmental Representative's written permission to undertake trenching on pavements open to aircraft traffic which cannot be completed, backfilled and sealed within one working day. |
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| <u>1.5 AIRPORT
FACILITIES</u> | .1 | Departmental Representative will stake or indicate location of underground facilities such as cables, pipes and ducts. |
| | .2 | Notify Departmental Representative of work areas sufficiently in advance of operations so that underground facilities can be located. |

PART 2 - PRODUCTS

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| <u>2.1 NOT USED</u> | .1 | Not Used. |
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PART 3 - EXECUTION

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| <u>3.1 NOT USED</u> | .1 | Not Used. |
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<u>1.1 SECTION INCLUDES</u>	.1	Procedures to isolate and lockout electrical facility and other equipment from energy sources.
<u>1.2 REFERENCES</u>	.1	CSA C22.1-12 - Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations.
	.2	COSH: Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.
<u>1.3 DEFINITIONS</u>	.1	Electrical Facility: means any system, equipment, device, apparatus, wiring, conductor, assembly or part thereof that is used for the generation, transformation, transmission, distribution, storage, control, measurement or utilization of electrical energy, and that has an amperage and voltage that is dangerous to persons.
	.2	Guarantee of Isolation: means a guarantee by a competent person in control or in charge that a particular facility or equipment has been isolated.
	.3	De-energize: in the electrical sense, that a piece of equipment is isolated and grounded, e.g. if the equipment is not grounded, it cannot be considered de-energized (DEAD).
	.4	Guarded: means that an equipment or facility is covered, shielded, fenced, enclosed, inaccessible by location, or otherwise protected in a manner that, to the extent that is reasonably practicable, will prevent or reduce danger to any person who might touch or go near such item.
	.5	Isolate: means that an electrical facility, mechanical equipment or machinery is separated or disconnected from every source of electrical, mechanical, hydraulic, pneumatic or other kind of energy that is capable of making it dangerous.
	.6	Live/alive: means that an electrical facility produces, contains, stores or is electrically connected to a source of alternating or direct current of an amperage and voltage that is dangerous or contains any hydraulic, pneumatic

- 1.3 DEFINITIONS (Cont'd) .6 Live/alive:(Cont'd)
or other kind of energy that is capable of
making the facility dangerous to persons.
- 1.4 COMPLIANCE REQUIREMENTS .1 Comply with the following in regards to
isolation and lockout of electrical facilities
and equipment:
.1 Canadian Electrical Code
.2 Federal and Provincial Occupational
Health and Safety Acts and Regulations.
.3 Procedures specified herein.
- .2 In event of conflict between any provisions
of above authorities the most stringent
provision will apply. Should a dispute arise
in determining the most stringent requirement,
Departmental Representative will advise on the
course of action to be followed.
- 1.5 SUBMITTALS .1 Submit copy of proposed lockout procedures
and sample of lockout permit or lockout tags
to Departmental Representative for review,
within 14 calendar days of acceptance of bid.
- .2 Submit in accordance with section 01 33 00.
- 1.6 ISOLATION OF EXISTING SERVICES .1 Obtain Departmental Representative's written
authorization prior to working on existing
live or active electrical facilities and
equipment and before proceeding with isolation
of such item.
- .2 To obtain authorization, submit to
Departmental Representative the following
documentation:
.1 Written request to isolate the
particular service or facility and;
.2 Copy of Contractor's Lockout Procedures.
- .3 Make a Request for Isolation for each event,
unless directed otherwise by Departmental
Representative, as follows:
.1 Fill-out standard form in current use at
the Airport as provided by Departmental
Representative or;
.2 Where no form exist, make written
request indicating:
.1 The equipment, system or service to
be isolated;
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1.6 ISOLATION OF
EXISTING SERVICES
(Cont'd)

- .3 (Cont'd)
 - .2 (Cont'd)
 - .2 Duration of isolation period (ie: start time & date and completion time & date).
 - .3 Voltage of service feed to system or equipment being isolated.
 - .4 Name of person making the request.
- .4 Do not proceed with isolation until receipt of written notification from Departmental Representative granting the Isolation Request and authorizing to proceed with the work.
 - .1 Note that Departmental Representative may designate another person at the Airport being authorized to grant the Isolation Request.
- .5 Conduct safe, orderly shut down of equipment or facility. De-energize, isolate and lockout power and other sources of energy feeding the equipment or facility.
- .6 Plan and schedule shut down of existing services in consultation with the Departmental Representative and the Airport Maintenance Manager. Minimize impact and downtime of Airport operations. Follow all directives in this regard.
- .7 Conduct hazard assessment as part of the process in accordance with occupational Health and Safety Plan specified requirements.

1.7 LOCKOUTS

- .1 De-energize, isolate and lockout electrical facility and equipment from all potential sources of energy prior to working on such item.
- .2 Develop and implement clear and specific lockout procedures to be followed as part of the Work.
- .3 Prepare typed written Lockout Procedures describing safe work practices, procedures, worker responsibilities and sequence of activities to be followed on site by workers to safely isolate equipment and electrical facilities and lockout/tagout all sources of energy.
- .4 Include as part of the Lockout Procedures a system of lockout permits managed by

1.7 LOCKOUTS
(Cont'd)

- .4 (Cont'd)
Contractor's Superintendent or other qualified person designated by him/her as being "in-charge" at the site.
 - .1 A lockout permit shall be issued to specific worker providing a Guarantee of Isolation before each event when work must be performed on a live equipment or electrical facility.
 - .2 Duties of person managing the permit system to include:
 - .1 Issuance of permits and lockout tags to workers.
 - .2 Determining permit duration.
 - .3 Maintaining record of permits and tags issued.
 - .4 Making a Request for Isolation to Departmental Representative when required as specified above.
 - .5 Designating a Safety Watcher, when one is required based on type of work.
 - .6 Ensuring equipment or facility has been properly isolated.
 - .7 Collecting and safekeeping lockout tags returned by workers as a record of the event.
- .5 Clearly establish, describe and allocate responsibilities of:
 - .1 Workers.
 - .2 Person managing the lockout permit system.
 - .3 Safety Watcher.
 - .4 Subcontractor(s) and General Contractor.
- .6 Generic procedures, if used, must be edited and supplemented with pertinent information to reflect site specific project requirements.
 - .1 Incorporate specific procedures in force at the Airport as provided by the Airport Manager through the Departmental Representative.
 - .2 Clearly label the document as being the Lockout procedures applicable to work of this contract.
- .7 Use energy isolation lockout devices specifically designed and appropriate for type of facility or equipment being locked out.
- .8 Use industry standard lockout tags.
- .9 Provide appropriate safety grounding and guards as required.

1.8 CONFORMANCE .1 Brief all workers and subcontractors on requirements of this section. Stringently enforce use and compliance.

1.9 DOCUMENTS .1 Keep copies of Request for Isolation forms and lockout permits and tags issued to workers
ON SITE on site for full duration of Work.

.2 Upon request, make available to Departmental Representative or to authorized safety Representative for inspection.

PART 1 - GENERAL

- 1.1 REFERENCES
- .1 Canadian Standards Association (CSA): Canada
 - .1 CSA-S350-M1980(R2003), Code of Practice for Safety in Demolition of Structures.
 - .2 National Building Code 2010 (NBC):
 - .1 NBC 2010, Division B, Part 8 Safety Measures at Construction and Demolition Sites.
 - .3 National Fire Code 2010 (NFC):
 - .1 NFC 2010, Division B, Part 2 Emergency Planning, subsection 2.8.2 Fire Safety Plan.
- 1.2 SUBMITTALS
- .1 Make submittals in accordance with Section 01 33 00.
 - .2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operations found in work plan.
 - .3 Contractor's and Sub-contractors' Safety Communication Plan.
 - .4 Contingency and Emergency Response Plan addressing standard operating procedures specific to the project site to be implemented during emergency situations. Coordinate plan with existing Facility Emergency Response requirements and procedures provided by Departmental Representative.
 - .3 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 5 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 5 days after receipt of comments from Departmental Representative.
 - .4 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
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| <u>1.2 SUBMITTALS
(Cont'd)</u> | .5 | Submit records of Contractor's Health and Safety meetings when requested. |
| | .6 | Submit copies of orders, directions or reports issued by health and safety inspectors of the authorities having jurisdiction. |
| | .7 | Submit copies of incident and accident reports. |
| | .8 | Submit Material Safety Data Sheets (MSDS). |
| <u>1.3 FILING OF
NOTICE</u> | .1 | File Notice of Project with Provincial authorities prior to commencement of Work. |
| <u>1.4 WORK PERMIT</u> | .1 | Obtain building permit related to project prior to commencement of Work. |
| <u>1.5 SAFETY
ASSESSMENT</u> | .1 | Perform site specific safety hazard assessment related to project. |
| <u>1.6 MEETINGS</u> | .1 | Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work. |
| <u>1.7 REGULATORY
REQUIREMENTS</u> | .1 | Comply with the Acts and regulations of the Province of Newfoundland and Labrador. |
| | .2 | Comply with specified standards and regulations to ensure safe operations at site. |
| <u>1.8 GENERAL
REQUIREMENTS</u> | .1 | Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications. |
| | .2 | Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns either accepting or requesting improvements. |
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1.8 GENERAL REQUIREMENTS (Cont'd)	.3	Relief from or substitution for any portion or provision of minimum Health and Safety standards specified herein or reviewed site-specific Health and Safety Plan shall be submitted to Departmental Representative in writing.
1.9 COMPLIANCE REQUIREMENTS	.1	Comply with Provincial Occupational Health and Safety Act.
1.10 RESPONSIBILITY	.1	Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
	.2	Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.
1.11 UNFORSEEN HAZARDS	.1	Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, immediately stop work and advise Departmental Representative verbally and in writing.
1.12 POSTING OF DOCUMENTS	.1	Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province of Newfoundland and Labrador, and in consultation with Departmental Representative. <ul style="list-style-type: none"> .1 Contractor's Safety Policy. .2 Constructor's Name. .3 Notice of Project. .4 Name, trade, and employer of Health and Safety Representative or Joint Health and Safety Committee members (if applicable). .5 Ministry of Labour Orders and reports. .6 Occupational Health and Safety Act and Regulations for Construction Projects. .7 Address and phone number of nearest Ministry of Labour office. .8 Material Safety Data Sheets. .9 Written emergency Response Plan. .10 Site Specific Safety Plan. .11 Valid certificate of first aider on duty.

1.12 POSTING OF DOCUMENTS (Cont'd)	.1	(Cont'd)
	.12	WSIB "In Case of Injury At Work" poster.
	.13	Location of toilet and cleanup facilities.

1.13 CORRECTION OF NON-COMPLIANCE	.1	Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.
	.2	Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
	.3	Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.

1.14 BLASTING	.1	Blasting or other use of explosives is not permitted.
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1.15 POWDER ACTUATED DEVICES	.1	Use powder actuated devices only after receipt of written permission from Departmental Representative.
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1.16 WORK STOPPAGE	.1	Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.
	.2	Assign responsibility and obligation to Competent Supervisor to stop or start Work when, at Competent Supervisor's discretion, it is necessary or advisable for reasons of health or safety. Departmental Representative may also stop Work for health and safety considerations.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not used.

PART 1 - GENERAL

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| <u>1.1 FIRES</u> | .1 | Fires and burning of rubbish on site not permitted. |
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| <u>1.2 DISPOSAL OF WASTES</u> | .1 | Do not bury rubbish and waste materials on site. |
| | .2 | Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers. |
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| <u>1.3 DRAINAGE</u> | .1 | Provide temporary drainage and pumping as necessary to keep excavations and site free from water. |
| | .2 | Do not pump water containing suspended materials into waterways, sewer or drainage systems. |
| | .3 | Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements. |
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| <u>1.4 WORK ADJACENT TO WATERWAYS</u> | .1 | Do not operate construction equipment in waterways. |
| | .2 | Do not use waterway beds for borrow material. |
| | .3 | Do not dump excavated fill, waste material or debris in waterways. |
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| <u>1.5 POLLUTION CONTROL</u> | .1 | Maintain temporary erosion and pollution control features installed under this contract. |
| | .2 | Control emissions from equipment and plant to local authorities emission requirements. |
| | .3 | Cover or wet down dry materials and rubbish to prevent blowing dust and debris. |

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| 1.5 POLLUTION
CONTROL
(Cont'd) | .4 | Spills of deleterious substances:
.1 Immediately contain, limit spread and
clean up in accordance with provincial
regulatory requirements.
.2 Further information on dangerous goods
emergency cleanup and precautions including a
list of companies performing this work can be
obtained from the Transport Canada 24-hour
number (613) 996-6666 collect. |
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PART 2 - PRODUCTS

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| 2.1 NOT USED | .1 | Not Used. |
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PART 3 - EXECUTION

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| 3.1 NOT USED | .1 | Not Used. |
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PART 1 - GENERAL

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| <u>1.1 REFERENCES AND
CODES</u> | .1 | Perform Work in accordance with National Building Code of Canada (NBC) 2010, National Fire Code of Canada (NFC) 2010 and Newfoundland and Labrador Building Code, latest edition, including all amendments up to bid 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. |
| <u>1.2 HAZARDOUS
MATERIAL DISCOVERY</u> | .1 | Stop work immediately and notify Departmental Representative if materials which may contain designated substances or PCB's, are discovered in course of work. |
| <u>1.3 BUILDING
SMOKING ENVIRONMENT</u> | .1 | Comply with smoking restrictions. |
| <u>1.4 TAXES</u> | .1 | Pay applicable Federal, Provincial and Municipal taxes. |
| <u>1.5 EXAMINATION</u> | .1 | Examine existing conditions and determine conditions affecting work. |
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PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

PART 1 - GENERAL

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| <u>1.1 SECTION
INCLUDES</u> | .1 | Inspection and testing, administrative and enforcement requirements. |
| | .2 | Tests and mix designs. |
| | .3 | Equipment and system adjust and balance. |
| <u>1.2 RELATED
SECTIONS</u> | .1 | Section 01 33 00 - Submittal Procedures. |
| | .2 | Section 01 78 00 - Closeout Submittals. |
| | .3 | Section 01 91 00 - Commissioning - General Requirements. |
| <u>1.3 INSPECTION</u> | .1 | Allow Departmental Representative access to Work. |
| | .2 | Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work. |
| | .3 | If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work. |
| | .4 | Departmental Representative may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. |
| <u>1.4 ACCESS TO WORK</u> | .1 | Allow inspection/testing agencies access to Work. |
| | .2 | Co-operate to provide reasonable facilities for such access. |
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- 1.5 PROCEDURES
- .1 Notify appropriate agency and Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.
 - .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.
 - .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

- 1.6 REJECTED WORK
- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
 - .2 Make good other Contractor's work damaged by such removals or replacements promptly.
 - .3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Departmental Representative may deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Departmental Representative.

- 1.7 REPORTS
- .1 Submit 4 copies of inspection and test reports to Departmental Representative.

- 1.8 TESTS AND MIX DESIGNS
- .1 Furnish test results as may be requested.
 - .2 The cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work shall be appraised by Departmental Representative and may be authorized as recoverable.
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1.8 TESTS AND MIX DESIGNS .3 Any additional testing as a result of defective work or materials shall be Contractor's responsibility.
(Cont'd)

1.9 EQUIPMENT AND SYSTEMS .1 Submit testing, adjusting and balancing reports for electrical equipment.

.2 Submit Commissioning Documentation in accordance with Section 01 91 00.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

PART 1 - GENERAL

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| <u>1.1 SECTION
INCLUDES</u> | .1 | Construction aids. |
| | .2 | Parking. |
| <u>1.2 SUBMITTALS</u> | .1 | Provide submittals in accordance with Section 01 33 00. |
| <u>1.3 INSTALLATION
AND REMOVAL</u> | .1 | Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation. |
| | .2 | Provide construction facilities in order to execute work expeditiously. |
| | .3 | Remove from site all such work after use. |
| <u>1.4 SITE
STORAGE/LOADING</u> | .1 | Confine work and operations of employees to areas defined by Contract Documents. Do not unreasonably encumber premises with products. |
| | .2 | Do not load or permit to load any part of Work with a weight or force that will endanger the Work. |
| <u>1.5 CONSTRUCTION
PARKING</u> | .1 | Parking will be permitted on site. |
| | .2 | Clean runways and taxi areas where used by Contractor's equipment. |
| <u>1.6 SECURITY
REQUIREMENTS</u> | .1 | Pay for security personnel having proper airport security to provide full time escort for workers on air side. |
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| <u>1.7 EQUIPMENT,
TOOL AND MATERIALS
STORAGE</u> | .1 | Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials. |
| | .2 | Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities. |

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| <u>1.8 SANITARY
FACILITIES</u> | .1 | Provide sanitary facilities for work force in accordance with governing regulations and ordinances. |
| | .2 | Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition. |

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| <u>1.9 CLEAN-UP</u> | .1 | Remove construction debris, waste materials, packaging material from work site daily. |
| | .2 | Clean dirt or mud tracked onto paved or surfaced roadways. |
| | .3 | Store materials resulting from demolition activities that are salvageable. |
| | .4 | Stack stored new or salvaged material. |

PART 2 - PRODUCTS

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| <u>2.1 NOT USED</u> | .1 | Not Used. |
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PART 1 - GENERAL

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| <u>1.1 SECTION
INCLUDES</u> | .1 | Product quality, availability, storage, handling, protection, and transportation. |
| | .2 | Manufacturer's instructions. |
| | .3 | Quality of Work, coordination and fastenings. |
| | .4 | Existing facilities. |

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| <u>1.2 RELATED
SECTIONS</u> | .1 | Section 01 45 00 - Quality Control. |
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| <u>1.3 REFERENCES</u> | .1 | Within text of specifications, reference may be made to reference standards. |
| | .2 | Conform to these standards, in whole or in part as specifically requested in specifications. |
| | .3 | If there is question as to whether any product or system is in conformance with applicable standards, Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance. |
| | .4 | The cost for such testing will be born by Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance. |
| | .5 | Conform to latest date of issue of referenced standards in effect on date of submission of Bids, except where specific date or issue is specifically noted. |

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| <u>1.4 QUALITY</u> | .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. |
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| <u>1.4 QUALITY
(Cont'd)</u> | .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. |
| | .5 | Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms. |
| <u>1.5 AVAILABILITY</u> | .1 | Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of products are foreseeable, notify Departmental Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work. |
| | .2 | In event of failure to notify Departmental Representative at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Departmental Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time. |
| <u>1.6 STORAGE,
HANDLING AND
PROTECTION</u> | .1 | Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable. |
| | .2 | Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not |

- 1.6 STORAGE,
HANDLING AND
PROTECTION
(Cont'd)
- .2 (Cont'd)
remove from packaging or bundling until
required in Work.
 - .3 Store products subject to damage from weather
in weatherproof enclosures.
 - .4 Store cementitious products clear of earth or
concrete floors, and away from walls.
 - .5 Keep sand, when used for grout or mortar
materials, clean and dry. Store sand on wooden
platforms and cover with waterproof tarpaulins
during inclement weather.
 - .6 Remove and replace damaged products at own
expense and to satisfaction of Departmental
Representative.
 - .7 Touch-up damaged factory finished surfaces to
Departmental Representative's satisfaction.
Use touch-up materials to match original. Do
not paint over name plates.
- 1.7 TRANSPORTATION .1 Pay costs of transportation of products
required in performance of Work.
- 1.8 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.
 - .3 Improper installation or erection of
products, due to failure in complying with
these requirements, authorizes Departmental
Representative to require removal and
re-installation at no increase in Contract
Price or Contract Time.
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| <u>1.9 QUALITY
OF WORK</u> | .1 | Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Departmental Representative if required Work is such as to make it impractical to produce required results. |
| | .2 | Do not employ anyone unskilled in their required duties. Departmental Representative reserves right to require dismissal from site, workers deemed incompetent or careless. |
| | .3 | Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Departmental Representative, whose decision is final. |
| <u>1.10 CO-ORDINATION</u> | .1 | Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision. |
| | .2 | Be responsible for coordination and placement of openings, sleeves and accessories. |
| <u>1.11 CONCEALMENT</u> | .1 | Before installation, inform Departmental Representative if there is interference. Install as directed by Departmental Representative. |
| <u>1.12 REMEDIAL WORK</u> | .1 | Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required. |
| | .2 | Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work. |
| <u>1.13 LOCATION OF
FIXTURES</u> | .1 | Consider location of fixtures, and electrical items indicated as approximate. |
| | .2 | Inform Departmental Representative of conflicting installation. Install as directed. |
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| <u>1.14 FASTENINGS</u> | .1 | Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise. |
| | .2 | Prevent electrolytic action between dissimilar metals and materials. |
| | .3 | Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section. |
| | .4 | Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable. |
| | .5 | Keep exposed fastenings to a minimum, space evenly and install neatly. |
| | .6 | Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable. |
|
<u>1.15 FASTENINGS - EQUIPMENT</u> | .1 | Use fastenings of standard commercial sizes and patterns with material and finish suitable for service. |
| | .2 | Use heavy hexagon heads, semi-finished unless otherwise specified. Use No.304 stainless steel for exterior areas. |
| | .3 | Bolts may not project more than one diameter beyond nuts. |
| | .4 | Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel. |
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<u>1.16 PROTECTION OF WORK IN PROGRESS</u> | .1 | Prevent overloading of any part of building. Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated without written approval of Departmental Representative. |
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| <u>1.17 EXISTING
UTILITIES</u> | .1 | When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work. |
| | .2 | Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service. |

PART 2 - PRODUCTS

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| <u>2.1 NOT USED</u> | .1 | Not Used. |
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PART 3 - EXECUTION

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| <u>3.1 NOT USED</u> | .1 | Not Used. |
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PART 1 - GENERAL

<u>1.1 SECTION INCLUDES</u>	.1	Field engineering survey services to measure and stake site.
	.2	Survey services to establish and confirm inverts for Work.
	.3	Recording of subsurface conditions found.
<u>1.2 PRECEDENCE</u>	.1	For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.
<u>1.3 QUALIFICATIONS OF SURVEYOR</u>	.1	Qualified registered land surveyor, licensed to practise in Place of Work, acceptable to Departmental Representative.
<u>1.4 SURVEY REFERENCE POINTS</u>	.1	Existing base horizontal and vertical control points are designated on drawings.
	.2	Locate, confirm and protect control points prior to starting site work. Preserve permanent reference points during construction.
	.3	Make no changes or relocations without prior written notice to Departmental Representative.
	.4	Report to Departmental Representative when reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
	.5	Require surveyor to replace control points in accordance with original survey control.
<u>1.5 SURVEY REQUIREMENTS</u>	.1	Establish lines and levels, locate and lay out, by instrumentation.
	.2	Stake for grading, fill and topsoil placement.
	.3	Stake slopes.

1.5 SURVEY
REQUIREMENTS
(Cont'd)

- .4 Establish pipe invert elevations.
- .5 Stake batter boards for foundations.
- .6 Establish foundation, column locations and floor elevations.

1.6 EXISTING
SERVICES

- .1 Before commencing work, establish location and extent of service lines in area of Work and notify Departmental Representative of findings.
- .2 Remove abandoned service lines.

1.7 LOCATION OF
EQUIPMENT AND
FIXTURES

- .1 Location of equipment and fixtures indicated or specified are to be considered as approximate.
- .2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.
- .3 Inform Departmental Representative of impending installation and obtain approval for actual location.
- .4 Submit field drawings to indicate relative position of various services and equipment when required by Departmental Representative.

1.8 RECORDS

- .1 Maintain a complete, accurate log of control and survey work as it progresses.
- .2 Record locations of maintained, re-routed and abandoned service lines.

1.9 SUBMITTALS

- .1 Submit name and address of Surveyor to Departmental Representative.
- .2 On request of Departmental Representative, submit documentation to verify accuracy of field engineering work.
- .3 Submit certificate signed by surveyor certifying and noting those elevations and

1.9 SUBMITTALS (Cont'd)	.3	(Cont'd) locations of completed Work that conform and do not conform with Contract Documents.
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PART 2 - PRODUCTS

2.1 NOT USED	.1	Not Used.
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PART 3 - EXECUTION

3.1 NOT USED	.1	Not Used.
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PART 1 - GENERAL

- 1.1 SUBMITTALS .1 Submittals: in accordance with Section 01 33 00.
- 1.2 MATERIALS .1 Required for original installation.
.2 Change in Materials: Submit request for substitution in accordance with Section 01 33 00.
- 1.3 PREPARATION .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
.2 After uncovering, inspect conditions affecting performance of Work.
.3 Beginning of cutting or patching means acceptance of existing conditions.
.4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.
.5 Provide protection from elements for areas which are to be exposed by uncovering work; maintain excavations free of water.
- 1.4 EXECUTION .1 Execute cutting, fitting, and patching including excavation and fill, to complete Work.
.2 Fit several parts together, to integrate with other Work.
.3 Uncover Work to install ill-timed Work.
.4 Remove and replace defective and non-conforming Work.
.5 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
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<u>1.4 EXECUTION (Cont'd)</u>	.6	Restore work with new products in accordance with requirements of Contract Documents.
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<u>1.5 WASTE MANAGEMENT AND DISPOSAL</u>	.1	Separate waste materials for reuse and recycling.
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PART 2 - PRODUCTS

<u>2.1 NOT USED</u>	.1	Not Used.
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PART 3 - EXECUTION

<u>3.1 NOT USED</u>	.1	Not Used.
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PART 1 - GENERAL

1.1 SECTION
INCLUDES

- .1 Progressive cleaning.
- .2 Final cleaning.

1.2 PROJECT
CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, other than that caused by Owner or other Contractors.
- .2 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site, unless approved by Departmental Representative.
- .3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4 Provide and use clearly marked separate bins for recycling.
- .5 Remove waste material and debris from site at end of each working day.
- .6 Dispose of waste materials and debris off site.
- .7 Clean interior areas prior to start of finish work, and maintain areas free of dust and other contaminants during finishing operations.
- .8 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .9 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .10 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .11 Schedule cleaning operations so that resulting dust, debris and other contaminants

1.2 PROJECT
CLEANLINESS
(Cont'd)

- .11 (Cont'd)
will not fall on wet, newly painted surfaces
nor contaminate building systems.

1.3 FINAL CLEANING

- .1 When Work is Substantially Performed, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3 Prior to final review, remove surplus products, tools, construction machinery and equipment.
- .4 Remove waste products and debris other than that caused by Owner or other Contractors.
- .5 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site, unless approved by Departmental Representative.
- .6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .7 Clean hardware and electrical fixtures. Replace broken, scratched or disfigured glass.
- .8 Remove stains, spots, marks and dirt from decorative work, electrical fixtures, walls, and floors.
- .9 Clean lighting reflectors, lenses, and other lighting surfaces.
- .10 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- .11 Clean equipment and fixtures to a sanitary condition.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

PART 1 - GENERAL

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| <u>1.1 SECTION
INCLUDES</u> | .1 | Administrative procedures preceding preliminary and final inspections of Work. |
| <u>1.2 RELATED
SECTIONS</u> | .1 | Section 01 78 00 - Closeout Submittals. |
| | .2 | Section 01 91 00 - Commissioning - General Requirements. |
| <u>1.3 INSPECTION AND
DECLARATION</u> | .1 | Contractor's Inspection: Contractor and all Subcontractors shall conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
.1 Notify Departmental Representative in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
.2 Request Departmental Representative's Inspection. |
| | .2 | Departmental Representative's Inspection: Departmental Representative and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor shall correct Work accordingly. |
| | .3 | Completion: submit written certificate that following have been performed:
.1 Work has been completed and inspected for compliance with Contract Documents.
.2 Defects have been corrected and deficiencies have been completed.
.3 Equipment and systems have been tested, adjusted and balanced and are fully operational and the performance of the equipment and system has been verified.
.4 Certificates required by Utility companies have been submitted.
.5 Operation of systems have been demonstrated to Owner's personnel.
.6 Work is complete and ready for Final Inspection. |
| | .4 | Final Inspection: when items noted above are completed, request final inspection of Work by Departmental Representative, and Contractor. If Work is deemed incomplete by Departmental |
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1.3 INSPECTION AND DECLARATION (Cont'd)	.4	Final Inspection:(Cont'd) Representative, complete outstanding items and request reinspection.
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PART 2 - PRODUCTS

<u>2.1 NOT USED</u>	.1	Not Used.
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PART 3 - EXECUTION

<u>3.1 NOT USED</u>	.1	Not Used.
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PART 1 - GENERAL

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| <u>1.1 SECTION
INCLUDES</u> | .1 As-built and specifications. |
| | .2 Equipment and systems. |
| | .3 Product data, materials and finishes, and related information. |
| | .4 Operation and maintenance data. |
| | .5 Spare parts, special tools and maintenance materials. |
| | .6 Warranties and bonds. |
| | .7 Final site survey. |
| <u>1.2 RELATED
SECTIONS</u> | .1 Section 01 91 00 - Commissioning - General Requirements. |
| | .2 Section 01 79 00 - Demonstration and Training. |
| <u>1.3 SUBMISSION</u> | .1 Prepare instructions and data using personnel experienced in maintenance and operation of described products. |
| | .2 Copy will be returned after final inspection, with Departmental Representative's comments. |
| | .3 Revise content of documents as required prior to final submittal. |
| | .4 Two weeks prior to Substantial Performance of the Work, submit to the Departmental Representative, four final copies of maintenance manuals and commissioning documentation in English. |
| | .5 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. |
| | .6 If requested, furnish evidence as to type, source and quality of products provided. |
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| 1.3 SUBMISSION
(Cont'd) | .7 | Defective products will be rejected, regardless of previous inspections. Replace products at own expense. |
| | .8 | Pay costs of transportation. |
| 1.4 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 or USB drive. |
| 1.5 CONTENTS - EACH
VOLUME | .1 | Table of Contents: provide title of project;
.1 date of submission; names,
.2 addresses, and telephone numbers of Contractor with name of responsible parties;
.3 schedule of products and systems, indexed to content of volume. |
| | .2 | For each product or system:
.1 list names, addresses and telephone numbers of subcontractors and suppliers, |
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- 1.5 CONTENTS - EACH .2 For each product or system:(Cont'd)
VOLUME .1 (Cont'd)
(Cont'd) 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.
- .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.
- .6 Training: Refer to Section 01 79 00 and 01 91 00.
- 1.6 AS-BUILTS .1 In addition to requirements in General Conditions, maintain at the site for Departmental Representative one record copy of:
- .1 Contract Drawings.
- .2 Specifications.
- .3 Amendments.
- .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 record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
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1.6 AS-BUILTS
(Cont'd)

- .5 Keep record documents and samples available for inspection by Departmental Representative.
- .6 Turn one set, paper copy and electronic copy, of AS-BUILT drawings and specifications over to Departmental Representative on completion of work.
- .7 If project is completed without significant deviations from Contract drawings and specifications submit to Departmental Representative one set of drawings and specifications marked "AS-BUILT".

1.7 RECORDING
ACTUAL SITE
CONDITIONS

- .1 Record information on set of black line opaque drawings, and in copy of Project Manual, provided by Departmental Representative.
- .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 Field changes of dimension and detail.
 - .2 Changes made by change orders.
 - .3 Details not on original Contract Drawings.
 - .4 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 Amendments and change orders.
- .6 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.

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- 1.8 FINAL SURVEY .1 Submit final site survey certificate in accordance with Section 01 71 00, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.
- 1.9 EQUIPMENT AND SYSTEMS .1 Each Item of Equipment and Each System: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- .2 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include any special operating instructions.
- .3 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- .4 Include manufacturer's printed operation and maintenance instructions.
- .5 Include sequence of operation.
- .6 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- .7 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- .8 Include test reports as specified in Section 01 45 00 and 01 91 00.
- .9 Additional requirements: As specified in individual specification sections.
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- 1.10 MATERIALS AND FINISHES
- .1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations.
 - .2 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.
 - .3 Additional Requirements: as specified in individual specifications sections.
- 1.11 SPARE PARTS
- .1 Provide spare parts, in quantities specified in individual specification sections.
 - .2 Provide items of same manufacture and quality as items in Work.
 - .3 Deliver to site; place and store.
 - .4 Receive and catalogue all items. Submit inventory listing to Departmental Representative. Include approved listings in Maintenance Manual.
 - .5 Obtain receipt for delivered products and submit prior to final payment.
- 1.12 SPECIAL TOOLS
- .1 Provide special tools, in quantities specified in individual specification section.
 - .2 Provide items with tags identifying their associated function and equipment.
 - .3 Deliver to site; place and store.
 - .4 Receive and catalogue all items. Submit inventory listing to Departmental Representative. Include approved listings in Maintenance Manual.
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1.13 STORAGE,
HANDLING AND
PROTECTION

- .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
- .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- .3 Store components subject to damage from weather in weatherproof enclosures.
- .4 Store paints and freezable materials in a heated and ventilated room.
- .5 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

1.14 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 Departmental Representative's permission, leave date of beginning of time of warranty until the Date of Certificate 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.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

PART 1 - GENERAL

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| <u>1.1 SECTION INCLUDES</u> | .1 | Procedures for demonstration and instruction of equipment and systems to Owner's O&M personnel. |
| | .2 | O&M personnel includes airport manager, maintenance staff and technical specialists, as applicable. |
| <u>1.2 RELATED SECTIONS</u> | .1 | Section 01 33 00 - Submittal Procedures. |
| | .2 | Section 01 78 00 - Closeout Submittals. |
| | .3 | Section 01 91 00 - Commissioning - General Requirements. |
| <u>1.3 DESCRIPTION</u> | .1 | Demonstrate scheduled operation and maintenance of equipment and systems to Owner's personnel two weeks prior to date of final inspection. |
| | .2 | Departmental Representative will provide list of personnel to receive instructions, and will coordinate their attendance at agreed-upon times. |
| <u>1.4 QUALITY CONTROL</u> | .1 | Submit training schedule of time and date for demonstration and training of each item of equipment and each system in accordance with the training plan four weeks prior to designated dates, for Departmental Representative's approval. |
| | .2 | Submit reports within one week after completion of demonstration, that demonstration and instructions have been satisfactorily completed. |
| | .3 | Report shall give time and date of each demonstration and training, with list of persons present. |
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- 1.5 CONDITIONS FOR DEMONSTRATIONS
- .1 Equipment has been inspected and put into operation in accordance with Section.
 - .2 Testing, adjusting, and balancing has been performed in accordance with Section 01 91 00 - Commissioning - General Requirements and equipment and systems are fully operational.
 - .3 Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions.

- 1.6 PREPARATION
- .1 Verify that conditions for demonstration and instructions comply with requirements.
 - .2 Verify that designated O&M personnel are present.

- 1.7 DEMONSTRATION AND INSTRUCTIONS
- .1 Demonstrate start-up, operation, control, adjustment, trouble-shooting,, servicing, and maintenance of each item of equipment at scheduled agreed upon times, at the equipment location.
 - .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.

- 1.8 TIME ALLOCATED FOR INSTRUCTIONS
- .1 Ensure amount of time required for instruction of each item of equipment.
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PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

PART 1 - GENERAL

<u>1.1 SECTION INCLUDES</u>	.1	Includes general requirements for commissioning facilities and facility systems.
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<u>1.2 RELATED SECTIONS</u>	.1	Section 01 33 00 - Submittal Procedures.
	.2	Section 01 78 00 - Closeout Submittals.
	.3	Section 01 79 00 - Demonstration and Training.

<u>1.3 REPORT FORMS</u>	.1	Contractor personnel having managerial responsibility shall make reports.
	.2	Report forms shall include: .1 Startup Checklists. .2 Product Information (PI) Report forms. .3 Performance Verification (PV) Report forms.
	.3	Ensure each form bears signature of recorder, and that of supervisor of reporting organization.
	.4	Submit signed form to Departmental Representative for review, approval and signature.
	.5	Identify each instrument used for testing, adjusting and balancing and its latest date of calibration.

<u>1.4 CONTRACTOR'S RESPONSIBILITIES</u>	.1	Prepare each system for testing.
	.2	Provide personnel and operate systems at designated times, and under conditions required for proper testing, adjusting, and balancing.
	.3	Notify Departmental Representative 7 days prior to time project will be ready for testing, adjusting, and balancing.
	.4	Accurately record data for each step.

<u>1.4 CONTRACTOR'S RESPONSIBILITIES (Cont'd)</u>	.5	Report to Departmental Representative any deficiencies or defects noted during performance of services.
	.6	Correct deficiencies identified in accordance with Departmental Representative's written instructions.

<u>1.5 PREPARATION</u>	.1	Provide instruments required for testing, adjusting, and balancing operations.
	.2	Retain possession of instruments and remove at completion of services.
	.3	Verify systems installation is complete and in continuous operation.

<u>1.6 EXECUTION</u>	.1	Test equipment systems, and adjust devices.
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PART 2 - PRODUCTS

<u>2.1 NOT USED</u>	.1	Not Used.
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PART 3 - EXECUTION

<u>3.1 NOT USED</u>	.1	Not Used.
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