

- 1 PRECEDENCE .1 Division 1 Sections take precedence over technical specification sections in other Specification Divisions.
- 2 WORK COVERED BY CONTRACT DOCUMENTS .1 In accordance with Section 01 11 05 Project General Instructions.
- 3 DEFINITIONS .1 The word "provide" means "supply and install".
- 4 WORK SEQUENCE .1 Coordinate Progress Schedule with Departmental Representative.
.2 Maintain fire access/control.
- 5 TIME OF COMPLETION .1 Work under this contract is to be performed in a timely manner. Commence planning and preparatory work immediately upon receipt of official notification of acceptance of Contract and complete the work within time stipulated in the Construction Tender.
.2 Before work is undertaken to specific areas, ensure that all materials and trades required are available to finish work in as short a period as possible.
.3 complete all work by 30 October 2014.
- 6 INTERPRETATION OF DOCUMENTS .1 In the event of discrepancies or conflicts in interpreting the Plans (drawings) and technical specification sections in other Divisions;
.2 Specifications take precedence over drawings bound with specifications;
.3 GC's or General Conditions take precedence over specifications.
.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

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| <u>OF DOCUMENTS</u>
<u>(Cont'd)</u> | .2 | (Cont'd)
mentioned on the Drawings, it shall nevertheless be included in the Contract. |
| | .3 | The sub-division of the Specification into sections, identified by title and number, is for convenience only and does not modify the singularity of the document, nor does it operate to make or imply that the Departmental Representative is an arbiter to establish the limits or extent of contract between Contractor and Subcontractors or to determine the limits or extents of work that may be decided by trade unions or contractors' organizations. Extras to the Contract will not be considered on the grounds of differences in interpretation of the Specification and/or Plans (drawings) as to which trade performs the work. |
| <u>7 CONTRACTOR USE</u>
<u>OF PREMISES</u> | .1 | In accordance with Section 01 35 27 Special Procedures: Airports in Use and the Plan of Construction Operations PCO (OPS PLAN) attached in the Other Documents folder. |
| <u>8 OCCUPANCY</u> | .1 | Departmental Representative will occupy premises during entire construction period for execution of normal operations with the exception of the construction areas shown on drawing C 01 and described in OPS plan. |
| | .2 | Cooperate with Departmental Representative, as directed by the Departmental Representative, in scheduling operations to minimize conflict and to facilitate Departmental Representative usage. |
| <u>9 Electromagnetic</u>
<u>Interference</u> | .1 | The Departmental Representative shall not be held responsible for electromagnetic interference which may originate from base radars, electrical power systems, navigation equipment or any other airfield electrical and/or electronic devices. |
| | .2 | The Contractor shall provide alternative means of performing the work at no cost to the Departmental Representative in the event that interference is encountered by the Contractor's electronically controlled |
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9 Electromagnetic .2 (Cont'd)
Interference
(Cont'd) construction equipment, survey, or layout
devices.

10 CONTRACTOR'S .1 Each week for the duration of the contract,
WEEKLY SUBMISSION complete all applicable information required
REPORT on Contractor's Submission Sheet and submit to
the Departmental Representative on every
Thursday of each week.

- 1 REFERENCES .1 National Building Code of Canada (NBC) 2010 including all amendments up to tender closing date.
- 2 MEASUREMENT .1 Mobilization and demobilization of all contractors equipment and plant will measured as one item.
- 3 DESCRIPTION OF WORK .1 Work under this Contract covers all labour, materials, and equipment to Rehabilitate Runway 16-34, Taxiway "A", four (4) Roads connecting to Taxi A, and other related works. The scope of work includes, but is not limited to:
- .1 Removing or profiling of existing asphalt pavement by rotary milling.
 - .2 Removing full depth asphalt from the edges of Runway 16-34 and some areas on roads.
 - .3 Common excavation for a new full depth road construction.
 - .4 Compacting subgrade and placing, grading and compacting new base material.
 - .5 Placing, grading common fill and compacting subgrade and common fill on Runway 16-34 edges.
 - .6 Crackfilling and sealing in asphalt pavement
 - .7 Lower course and surface course resurfacing with new hot mix asphaltic concrete including application of prime or tack coats.
 - .8 Regrading airside graded areas by scarifying existing and placing new topsoil and Hydraulic seeding.
 - .9 Regrading road shoulder areas by scarifying existing and placing new topsoil and Hydraulic seeding.
 - .10 Pavement Marking.
 - .11 Adjusting(raising or lowering) Runway and Taxiway edge lights' height including pullpits.
 - .12 Other miscellaneous works.
- 4 CODES .1 Perform work in accordance with National Building Code of Canada (NBC) and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
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| 4 | <u>CODES</u>
(Cont'd) | .2 | Meet or exceed requirements of:
.1 contract documents,
.2 specified standards, codes and
referenced documents. |
| 5 | <u>DOCUMENTS</u>
<u>REQUIRED</u> | .1 | Maintain at job site, one copy each of
following:
.1 Contract drawings.
.2 Specifications.
.3 Addenda.
.4 Reviewed shop drawings.
.5 Change orders.
.6 Other modifications to Contract.
.7 Field test reports.
.8 Copy of approved work schedule.
.9 Manufacturers' installation and
application instructions.
.10 Labour conditions and wage schedules.
.11 Material Safety Data Sheets.
.12 Labour and Material Bonds.
.13 All applicable Municipal Permits.
.14 Project record documents (for "as-built"
purposes).
.15 Health and Safety Plan. |
| 6 | <u>MEASUREMENT FOR</u>
<u>PAYMENT</u> | .1 | Notify Departmental Representative
sufficiently in advance of operations to
permit required measurements for payment. |
| 7 | <u>COST BREAKDOWN</u> | .1 | Before submitting first progress claim submit
breakdown of contract price in detail as
directed by Departmental Representative and
aggregating contract price. After approval by
Departmental Representative, cost breakdown
will be used as basis for progress payment. |
| 8 | <u>CONTRACTOR'S USE</u>
<u>OF SITE</u> | .1 | Use of site in accordance with Section 01 35
27 Special Procedures: Airports in Use. |
| 9 | <u>SETTING OUT OF</u>
<u>WORK AND AS BUILT</u>
<u>SURVEY</u> | .1 | The Contractor will assume full
responsibility for and execution of all survey
layout required for construction of the Work.
This work includes, but is not limited to:
.1 Preliminary layout. |
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9 SETTING OUT OF
WORK AND AS BUILT
SURVEY
(Cont'd)

- .1 (Cont'd)
 - .2 Checking existing grades and coordinates a minimum of one week prior to milling or removal operations and reporting on any significant variations from those indicated in the Contract drawings.
 - .3 Setting all locations, lines, grades and elevations indicated including stringlines and stations for paving.
 - .4 Checking all locations, lines, grades and elevations to ensure Work is constructed as indicated or directed by the Departmental Representative.
 - .5 Surveying as required for as-built information required by Departmental Representative.
 - .2 The Contractor will provide a competent survey crew to the satisfaction of the Departmental Representative. If in the opinion of the Departmental Representative any of the crew lack the skills or experience required they will be replaced immediately with personnel capable of performing the Work.
 - .3 The Contractor will provide a surveyor capable of working in UTM coordinates.
 - .4 The Contractor will not substitute survey personnel without the permission of the Departmental Representative.
 - .5 The Contractor will provide survey results to the Departmental Representative upon request. Upon completion of the work the Contractor shall provide Departmental Representative with a complete copy of all survey information, including as-built information.
 - .6 Random survey checks by the Departmental Representative do not relieve the Contractor of his responsibility for the layout, checking, or accuracy of the work.
 - .7 Benchmarks of known elevation and coordinates will be provided by the Departmental Representative.
 - .8 Provide devices needed to lay out and construct work.
 - .9 Supply such devices as straight edges and templates required to facilitate Departmental Representative's inspection of work.
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9 SETTING OUT OF
WORK AND AS BUILT
SURVEY
(Cont'd)

- .10 Supply stakes and other survey markers required for laying out work.
 - .11 Conduct all survey using GPS or and Total Station. No point to be further than 10 meter from its nearest neighbouring point. Control to be produced using the 6-degree UTM grid system and geodetic mean sea level datum for all survey positioning. The horizontal datum is to be NAD 83.
 - .12 Use Civil 3D version 13 software or equivalent acceptable to Departmental Representative to prepare survey drawings. Provide drawing in UTM Ground Coordinates; indicate BMs and scale factor used to calculate Ground Coordinates. Do not use drawing level 0 (zero). Clearly indicate geodetic monuments on the drawing.
 - .13 Confirm that existing grades matches the provided cross section and profile grades. Confirm that the asphalt milling area and new HMA volume will match the tendered unit cost items.
 - .14 Prepare a 1:1000 scale AutoCAD drawing of all post construction as built cross sections and profiles. Confirm that all design grades were met. Provide elevation data as follows:
 - .1 For runway and taxiway,: take shots at 20.0 m station interval, at centreline, and 7.5 m offsets, edge of pavement, 5.0 m outside edge of pavement in graded are, all fillets and other odd shape corners.
 - .2 For roads and parking lots: take shots at 10.0 m station, centerline and 5.0 m offsets, edge of pavement, 3.0 m outside edge of pavement.
 - .3 Take two point shots one at top and other at bottom of airside runways and , taxiways edge lighting or any other vertical drop structures.
 - .4 Follow surveying convention to clearly indicate all topographical features.
 - .5 Where necessary, use tighter grid spacing to ensure all important features, including survey boundaries, feature break lines such as edge of ditch or swale, centerline of ditch or swale, pavement crown, and edge of pavement, and change in pavement surface type etc, are obtained. Take additional survey points wherever there is
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9 SETTING OUT OF
WORK AND AS BUILT
SURVEY
(Cont'd)

- .14 Prepare a 1:(Cont'd)
 - .5 (Cont'd)
change in horizontal alignment of features and wherever there is change in slope.
 - .6 Locations of all surface installations including drainage structures, signs, markers, light fixtures, pullpits, and any other features.
 - .7 Horizontal and vertical location of underground electrical and storm water utilities and appurtenances including cable ducts, pipe inverts and manhole and catchbasin sumps. (lights, signs, pullpits, wind cones and manholes etc.)
 - .8 For each catch basin, manhole, and similar structures, take shot on center of grating, measure depth of sump, all pipe inverts and elevation difference between their top and surrounding grades.
- .15 Surveyed area is to be mapped into a single CAD file only. The CAD file is not to be broken down into separate sub-files joined by match lines. Use 'ground' coordinates to create the file.
- .16 Logically assemble and label like features/object data, annotate by colour, and group by layer in a CAD file. Typographical data points and benchmarks are to be placed on exclusive drawing layers.
- .17 Survey Precision: Vertical Precision- the vertical precision is to be 10mm. Horizontal Precision-the Horizontal control points to be 1 in 25000.

10 CUTTING
AND PATCHING

- .1 Cut and patch as required to make work fit.
 - .2 Make cuts with clean, true, smooth edges.
 - .3 Where new work connects with existing and where existing work is altered, cut, or patched, place to match existing work.
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11 ADDITIONAL
DRAWINGS

- .1 Departmental Representative may furnish additional drawings for clarification. These additional drawings have same meaning and intent as if they were included with plans referred to in Contract documents.
- .2 When additional drawings and instructions are required by the Contractor, provide reasonable notice in writing to the Departmental Representative in advance of the date they are required.

1 EXISTING
SERVICES

- .1 Notify, Departmental Representative and utility companies of intended interruption of services and obtain required permission. For site utilities apply for a dig permit minimum 48 hours prior to excavation for site personnel to locate and mark Airport utilities and cables.
- .2 Where Work involves breaking into or connecting to existing services, give Departmental Representative 48 hours of notice for necessary interruption of service throughout course of work. Keep duration of interruptions minimum. Carry out work at times directed by authorities having jurisdiction, with minimum of disturbance to aerodrome activities.
- .3 Before commencing work, establish location and extent of service lines in area of work and notify Departmental Representative of findings.
- .4 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.
- .5 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .6 Record locations of maintained, re-routed, removed, and abandoned service lines.
- .7 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

2 SPECIAL
REQUIREMENTS

- .1 All work will be performed during regular working hours except as indicated.
 - .2 After regular hours includes the time (overnight) between 16:30 of one day and 06:00 the next day, Monday to Friday, and any time between 16:30 on Fridays and 06:00 on Monday, or Tuesday if Monday is a statutory holiday, unless approved otherwise by the Departmental Representative.
 - .3 After hours work in areas normally occupied during regular working hours will be subject to special security requirements and
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2 SPECIAL
REQUIREMENTS
(Cont'd)

- .3 (Cont'd)
surveillance. Indicate on the weekly schedule if any work will be undertaken after hours or on weekends.
- .4 Prior to excavating cutting or drilling horizontal or vertical surfaces including pavements or other structural substrate, determine location of service lines, pipes, conduits or other items by appropriate method. Submit findings to Departmental Representative prior to cutting or drilling.

- 1 SCOPE .1 These specifications govern all requirements for supplying and maintaining a field laboratory.
- 2 SUPPLY .1 The Contractor shall supply one laboratory, blocked and level, ready for use before work commences. The laboratory shall remain on the project until completion of the work unless released earlier by the Departmental Representative.
- 3 LOCATION .1 Laboratories shall be located on approved sites independent of all other buildings.
- 4 PHYSICAL REQUIREMENTS .1 Laboratories shall be well constructed, insulated weatherproof structures having the following physical requirements:
.1 A minimum inside floor area of 9.3 m², covered with a washable floor covering.
.2 Painted or panelled interior walls at least 2.1 m high.
.3 Two windows equipped with screens. Windows shall be on opposite walls, each with an opening of at least 0.56 m². All or one half of each window shall be capable of being opened, closed and latched.
.4 One combination door or a solid door and screen door. The door shall be tight fitting and equipped with a lock. Two keys shall be provided to the Departmental Representative. Doorsteps shall be provided.
.5 A solid, level workbench at least 1.8 m long, 750 mm wide and 900 mm above the floor having a smooth heat resistant surface, such as arborite.
.6 A stainless steel sink, at least 450 mm square and 175 mm deep shall be built into the workbench, complete with a drain to the outside.
- 5 UTILITIES .1 Laboratories shall be wired for 60 amp. electric service. Wiring, receptacles and overhead lights shall be installed to current building standards.
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- 5 UTILITIES
(Cont'd)
- .2 The Contractor shall supply electricity. The source shall be capable of providing 110 volt A.C. and at least 5 kilowatts at peak load. Laboratories shall be grounded.
- .3 An approved heating unit with controls shall be provided which will maintain a room temperature of at least 18°C.
- 6 MISCELLANEOUS
- .1 The following items shall be provided with each laboratory:
- .1 An approved permanent propane service line.
- .2 Clean water for use in testing samples as required.
- .3 A desk at least 1.25 m long and 750 mm wide, two chairs and one stool.
- .4 A floor mop, pail, broom and dustpan.
- .5 A fully charged fire extinguisher with a minimum size of 2.3 kg, rated ABC, shall be conveniently located on the wall.
- 7 BASIS OF PAYMENT
- .1 No direct payment will be made for providing laboratories, heating fuel, water and electricity and providing items necessary or incidental thereto, as herein described, all of which will be considered incidental to the operations being performed.

PART 1 - GENERAL

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| <u>1.1 Regulatory Requirements</u> | .1 | Prior to use, have weigh scales certified as meeting requirements of Statutes of Canada, Chapter 36, Weights and Measures Act 1970-71-72 and subsequent amendments. Display certificate in prominent position. |
| <u>1.2 Measurement Procedures</u> | .1 | Include cost of certification, installation, maintenance and removal of scales or use of local commercial scales in items of work to be measured by mass. |

PART 2 - PRODUCTS

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| <u>2.1 Equipment</u> | .1 | Weigh scales: truck scale of sufficient capacity to weigh loaded vehicles in single operation. |
| | .2 | Scale house: to enclose mass indicator and provide workspace for Departmental Representative's use.
.1 Weatherproof and have minimum 750 lx of illumination, one sliding window facing scale platform, one other window for cross ventilation, shelf desk at least 0.6 x 1.8 m, and heat to maintain inside temperature at 20°C. Entrance door not to face onto scale platform. |

PART 3 - EXECUTION

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| <u>3.1 Installation</u> | .1 | Provide, install and maintain scales, scale house and ramps, convenient to project site, at location approved by Departmental Representative. |
| <u>3.2 Operation</u> | .1 | Provide sufficient number of weigh tickets, in triplicate, with consecutive serial numbers. |
| | .2 | All weigh tickets shall have the company name, gross weight, tare weight, date, time, |
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- 3.2 Operation .2 (Cont'd)
(Cont'd)
- daily load number and ticket number printed on each ticket by an approved electric/mechanical printer coupled to the scale.
- .3 Each truck shall carry a current tare (monthly). This tare shall be obtained by weighing the truck or truck/trailer(s) combination on a certified scale and shall show:
- .1 Scale location
 - .2 The mechanically printed tare weight
 - .3 The license number(s) of the truck and trailer.
 - .4 The time and date of weighing.
- .4 The contractor will make arrangements to have weigh tickets collected at the site and forwarded to the Departmental Representative at the end of each day of work.
- 3.3 Verification .1 All trucks are subject to random verification of either gross or tare weights by the Departmental Representative.
- .2 There will be no charge by the Contractor for any delays or loss of production caused by such inspection and verification.
- 3.4 Operation .1 Contractor's representative at scales will weigh materials. The Departmental Representative reserves the right to inspect and/or perform the weighing operation at any time during the work.
- 3.5 Maintenance .1 Maintain scale platform and scale mechanism clean and free from gravel, asphalt, snow, ice, and debris.
- .2 Maintain approach ramps in good condition free from sags and ruts.
- .3 Have scales retested and recertified if requested by and at no cost to the Departmental Representative .
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3.6 Certification of.1
Delivery

The Departmental Representative or his designate shall sign each ticket to certify that material was actually delivered to the job.

- .2 It shall be the responsibility of the Contractor to ensure all tickets are presented to the Departmental Representative for verification at the end of each days work.
- .3 Deliveries shall be certified on the day of delivery. Late tickets will not be accepted.

3.7 Removal

- .1 Remove scales and scale house when no longer required by Departmental Representative.
- .2 Level approach and exit ramps and regrade and restore area back to original condition.

1 RELATED
REQUIREMENTS
SPECIFIED ELSEWHERE

- .1 Particular requirements for inspection and testing to be carried out by testing laboratory designated by Departmental Representative are specified under various sections.

2 APPOINTMENT AND
PAYMENT

- .1 Departmental Representative will appoint and pay for services of testing laboratory for random Quality Assurance Testing by an independent consultant.
- .2 Contractor will appoint and pay services of testing laboratory for Quality Control testing including the following:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's Quality control testing and convenience.
 - .3 Testing, adjustment and balancing of electrical equipment and systems.
 - .4 Mill tests and certificates of compliance.
 - .5 Tests specified to be carried out by Contractor under the supervision of Departmental Representative.
 - .6 Additional tests specified in the following paragraph.
- .3 Where tests or inspections by designated testing laboratory reveal Work not in accordance with contract requirements, pay costs for additional tests or inspections as required by Departmental Representative to verify acceptability of corrected work.

3 CONTRACTOR'S
RESPONSIBILITIES

- .1 Provide labour, equipment and facilities to:
 - .1 Provide access to Work to be inspected and tested.
 - .2 Facilitate inspections and tests.
 - .3 Make good Work disturbed by inspection and test.
 - .4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.
 - .2 Notify Departmental Representative sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.
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3 CONTRACTOR'S
RESPONSIBILITIES
(Cont'd)

- .3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
- .4 Pay costs for uncovering and making good Work that is covered before required inspection or and approved by Departmental Representative.

1 DESCRIPTION

- .1 Coordination of progress schedules, submittals, use of site, temporary utilities, construction facilities, and construction Work, with progress of Work of other contractors and Work by Departmental Representative, under instructions of Departmental Representative.

2 CONSTRUCTION
ORGANIZATION AND
START-UP

- .1 Within 15 days after award of Contract, the Departmental Representative will request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
 - .2 Senior representatives of the Departmental Representative, Contractor, major Subcontractors, field inspectors and supervisors will be in attendance. Others may be in attendance at the discretion of the Departmental Representative or the Contractor.
 - .3 The Departmental Representative will establish time and location of meeting and notify parties concerned minimum 5 days before meeting.
 - .4 Agenda to include following:
 - .1 Appointment of official representative of participants in Work.
 - .2 Schedule of Work.
 - .3 Schedule of submission of shop drawings and samples.
 - .4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, and fences in accordance with Section 01 56 00.
 - .5 Site security in accordance with Section 01 35 27 special Procedures: Airport in Use.
 - .6 Security clearances.
 - .7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements.
 - .8 Record drawings in accordance with Section 01 78 00.
 - .9 Maintenance in accordance with Section 01 78 00.
 - .10 Take-over procedures, acceptance, and warranties in accordance with Section 01 77 00 and 01 78 00.
 - .11 Monthly progress claims, administrative procedures, photographs, and holdbacks.
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2 CONSTRUCTION
ORGANIZATION AND
START-UP
(Cont'd)

- .4 Agenda to include following:(Cont'd)
 - .12 Appointment of inspection and testing agencies or firms in accordance with Section 01 45 00 Quality Control.
 - .13 Insurance and Transcript of policies.
 - .14 List of Suppliers and Sub-Contractors.
 - .15 Other business.
- .5 Comply with Departmental Representative's allocation of mobilization areas of site for field offices and sheds; for, access, traffic, and parking facilities.
- .6 During construction, coordinate use of site and facilities through Departmental Representative's procedures for intra-project communications for submittals, reports and records, schedules, coordination of drawings, and recommendations and resolution of ambiguities and conflicts.
- .7 Comply with instructions of Departmental Representative for use of temporary utilities and construction facilities.

3 Work Schedule

- .1 Provide within 10 working days after Contract award, schedule showing anticipated progress stages and final completion of work within time period required by Contract documents. Schedule to include:
 - .1 Construction Progress Schedule broken into each phase described in the OPS Plan that is attached in Other Documents of these specifications. Schedule to show major types of work; Common excavation, asphalt removal and milling, asphalt paving, base material and sub base material, shoulder grading and improvements, electrical, and pavement marking.
 - .2 Submittal Schedule for Shop Drawings and Product Data.
 - .3 Submittal Schedule for Samples.
 - .4 Product Delivery Schedule.
 - .5 Shutdown or closure activity.
- .2 The Contractor shall provide the Departmental Representative with a minimum of one(1) week notice prior to commencing work. Any change of this date requires a minimum of three (3) days notice.

3 Work Schedule
(Cont'd)

- .3 The Contractor shall make every effort to maintain the submitted work schedule and work commencement date.
- .4 The Contractor shall be responsible for all costs incurred by the Departmental Representative and his staff resultant from failure to comply with work schedule requirements.
- .5 Submit updated schedule with each Progress Payment Claim.
- .6 Interim reviews of work progress based on work schedule will be conducted as decided by Departmental Representative and schedule updated by Contractor in conjunction with and to approval of Departmental Representative.
- .7 Distribute copies of revised schedule to:
 - .1 Job site office.
 - .2 Subcontractors.
 - .3 Other concerned parties.
- .8 Instruct recipients to report to Contractor within 5 days, any problems anticipated by timetable shown in schedule.

4 PROJECT
MEETINGS

- .1 Schedule and administer weekly project meetings throughout progress of Work as determined by Departmental Representative.
- .2 Representatives of the Contractor, major Subcontractors, other Subcontractors involved in work, Departmental Representative, and others as required and decided upon by the Departmental Representative or Contractor are to be in attendance.
- .3 Prepare agenda for meetings.
- .4 Distribute written notice of each meeting four days in advance of meeting date to Departmental Representative and Subcontractors.
- .5 Departmental Representative will preside all meetings.

4 PROJECT
MEETINGS
(Cont'd)

- .6 Departmental Representative will record minutes, including significant proceedings and decisions, and identifying action by parties.
- .7 Departmental Representative will reproduce and distribute copies of minutes within three days after each meeting and transmit to Contractor, and affected parties not in attendance; Contractor will distribute to Subcontractors.
- .8 Agenda to include the following:
 - .1 Review, approve minutes of previous meeting.
 - .2 Review of work progress subsequent to previous meeting.
 - .3 Observed field conditions, problems, conflicts.
 - .4 Review problems which impede construction schedule.
 - .5 Review progress, schedule, during succeeding work period.
 - .6 Review submittal schedules. Revise and expedite as required.
 - .7 Review pending changes and substitutions.
 - .8 Review proposed changes for effect on construction schedule and on completion date.
 - .9 Maintenance of Quality Standards, review of test results.
 - .10 Review of Site safety and security issues if Any.
 - .9 Other business.

PART 1 - GENERAL

- 1.1 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, and samples in SI Metric units. Submit preliminary shop drawings, product data and samples for review for compliance with Contract Documents. After review, revise and resubmit for Departmental Representative's approval.
- .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.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
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- 1.1 Administrative (Cont'd)
- .10 Submit requests for payment for review, and for transmittal to Departmental Representative.
 - .11 Submit requests for interpretation of Contract Documents, and obtain instructions through Departmental Representative.
 - .12 Process substitutions through Departmental Representative.
 - .13 Process change orders through Departmental Representative.
 - .14 Deliver closeout submittals for review and preliminary inspections, for transmittal to Departmental Representative.
 - .15 Keep one reviewed copy of each submission on site.
- 1.2 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 7 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
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- 1.2 Shop Drawings .5 (Cont'd)
And Product Data
(Cont'd)
- .6 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.
- .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 6 prints of shop drawings or PDF copies for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
- .10 Submit 6 prints copy or PDF copy 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. Two
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1.2 Shop Drawings
And Product Data
(Cont'd)

- .10 (Cont'd)
copies will be retained by the Departmental Representative. Include applicable web site addresses for manufacturers for future reference.
- .11 Delete information not applicable to project.
- .12 Supplement standard information to provide details applicable to project.
- .13 If upon review by Departmental Representative, no errors or omissions are 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.
- .14 The review of shop drawings by the Departmental Representative is for sole purpose of ascertaining conformance with general concept. This review shall not mean that the Departmental Representative 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.

1.3 Samples

- .1 Submit for review samples in duplicate or triplicate as requested in respective specification Sections. Label samples with origin and intended use.
 - .2 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.
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- 1.3 Samples
(Cont'd)
- .3 Where colour, pattern or texture is criterion, submit full range of samples.
 - .4 Adjustments made on samples 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 samples which Departmental Representative may require, consistent with Contract Documents.
 - .6 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.
- 1.4 Certificates
and Transcripts
- .1 Immediately after award of Contract, submit Workers' Compensation Board status.

- 1 MEASUREMENT PROCEDURES .1 No measurement will be made for construction or restoration of any temporary roads or other works, include cost in other construction items.
- 2 REFERENCES .1 Uniform Traffic Control Devices for Canada, (UTCD) latest edition (distributed by Transportation Association of Canada).
- .2 Manual of Uniform Traffic Control Devices for Streets and Highways, US FHWA, Part IV, - latest edition.
- 3 PROTECTION OF PUBLIC TRAFFIC .1 Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.
- .2 When working on travelled way:
- .1 Place equipment in position to present minimum of interference and hazard to traveling public.
- .2 Keep equipment units as close together as working conditions permit and preferably on same side of travelled way.
- .3 Do not leave equipment on travelled way overnight.
- .3 Do not close any lanes of road without approval of Departmental Representative. Before re-routing traffic erect suitable signs and devices in accordance with instructions contained in Part D of UTCD.
- .4 Keep travelled way graded, free of pot holes and of sufficient width for required number of lanes of traffic.
- .1 Provide minimum 4.0m wide temporary roadway for traffic.
- .5 As indicated, and as directed by Departmental Representative, provide gravelled temporary roads to facilitate passage of traffic around restricted construction area and for construction equipment traffic.
- .6 Provide and maintain road access and egress to property fronting along Work under Contract and in other areas as indicated, unless other
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- 3 PROTECTION OF PUBLIC TRAFFIC (Cont'd)
- .6 (Cont'd)
means of road access exist that meet approval of Departmental Representative.
- 4 INFORMATIONAL AND WARNING DEVICES
- .1 Provide and maintain signs, flashing warning lights and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.
- .2 Supply and erect signs, delineators, barricades and miscellaneous warning devices as specified in Part D, Temporary Conditions Signs and Devices, of UTCD manual.
- .3 Place signs and other devices in locations recommended in UTCD manual.
- .4 Meet with Departmental Representative prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of Departmental Representative.
- .5 Continually maintain traffic control devices in use by:
.1 Checking signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
.2 Removing or covering signs which do not apply to conditions existing from day to day.
- 5 CONTROL OF PUBLIC TRAFFIC
- .1 Provide competent flag persons, trained in accordance with, and properly equipped as specified in, UTCD manual in following situations:
.1 When public traffic is required to pass working vehicles or equipment which block all or part of travelled roadway.
.2 When it is necessary to institute one-way traffic system through construction area or other blockage where traffic volumes are heavy, approach speeds are high and traffic signal system is not in use.
.3 When workmen or equipment are employed on travelled way over row of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.
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5 CONTROL OF
PUBLIC TRAFFIC
(Cont'd)

- .1 (Cont'd)
 - .4 Where temporary protection is required while other traffic control devices are being erected or taken down.
 - .5 For emergency protection when other traffic control devices are not readily available.
 - .6 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.
 - .7 Delays to public traffic due to contractor's operators: maximum 15 minutes.
- .2 Where roadway, carrying two-way traffic, to be restricted to one lane, for 24 hours each day, provide portable traffic signal system. Adjust, as necessary, and regularly maintain system during period of restriction. Signal system to meet requirements of Part IV of Manual of Uniform Traffic Control Devices to Street and Highways, US FHWA.

PART 1 - GENERAL

- | | | |
|--|----|--|
| <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: to Section 01 56 00 - Temporary Barriers and Enclosures. |
| | .3 | Do not interfere with aerodrome aircraft landing, take-off, and marshalling activities. |
| <u>1.2 Measurement for Payment</u> | .1 | No measurement will be made for work requirements under this section. Include costs in items which require security. |
| <u>1.3 Coordination Movements in Operational Areas</u> | .1 | Brief Departmental Representative no later than 1400 hours every day on next day's planned work and proposed construction equipment and vehicular traffic activities prior to starting work in area adjacent to or on active aerodrome facilities. |
| <u>1.4 Flight Safety</u> | .1 | Prior to permitting personnel to cross active runways, taxiways, apron, or working within 60 m of an active facility, establish contact with Flight Service Station (FSS) and obtain specific clearance. Once established on airfield, maintain radio contact with ATC(Air Traffic Control) at all times. |
| | .2 | Prior to starting work obtain necessary closure of adjacent facilities. |
| | .3 | All Contractor's vehicles used on the airfield must be equipped with an orange rotary beacon or must be escorted by a vehicle equipped with such a beacon. Escorted vehicle must have 4 way emergency flasher on. |
| | .4 | Foreign Object Damage (FOD) control procedures will be enforced by the |
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- 1.4 Flight Safety .4 (Cont'd)
(Cont'd)
- Departmental Representative at all times in the construction and operational area.
- .5 The contractor shall maintain at the construction site an Departmental Representative approved, sufficiently sized and powered, tractor, or similar vehicle, fitted with a non-metallic motorized rotary sweeper broom, minimum width 2.4m, for FOD control and clean-up of adjacent operational surfaces affected by construction activities. Site FOD sweeps shall be conducted at the end of each working day and when directed by the. Departmental Representative.
- .6 Use of radio transmitting device on site must be approved by the Departmental Representative.
- 1.5 Construction Equipment .1 It is essential that all power tools, internal combustion engines, and equipment used for work in this project, be equipped with suppressors to eliminate interference with airfield radio, and telecommunications equipment.
- 1.6 Restricted or Secure Area .1 Any area on airport property to which access is restricted by sign and/or monitored is a secure or restricted area.
- .2 Coordinate use of premises under direction of Departmental Representative.
- 1.7 Contractor Personnel .1 Provide Departmental Representative and site personnel with list of responsible personnel complete with phone numbers, and those of sub-contractors, who may be contacted after working hours in case of an emergency.
- .2 The Contractor will be responsible for personnel and vehicles employed by the Contractor as well as personnel and vehicles of a sub-contractor and suppliers of materials or services requiring access to restricted areas.
-

1.7 Contractor Personnel (Cont'd) .3 Maintain security measures established by OPS plan. The contractor is required to employ and pay for full time security escorts.

1.8 Movement of Equipment and Personnel .1 For all airside work.
.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 radio personnel at locations designated by Departmental Representative to relay signals from Flight Service Station to equipment and personnel.
.4 Obey signals from Flight Service Station instantly.
.2 The Contractor's employees and equipment that are authorized to enter the work areas will be restricted to designated work areas.
.3 Any Contractor's employee found outside of the work site limit will have his security pass revoked and will no longer be allowed inside the security area.

1.9 Evacuation .1 The Contractor shall be required to abandon and evacuate the work sites as directed, should an emergency situation be declared by Airport Authorities.
.2 Stoppage of work:
.1 May occur as a result of observance by the contractor of the requirements contained in the OPS Plan that is attached in Other Documents of the specification. In such cases where these stoppages exceed one hour in aggregate in any one day, the Contract Sum shall be increased by the amount of any direct expense properly incurred by the Contractor as ascertained by the Departmental Representative for the aggregate period (including the first hour) in respect of plant, and labour rendered idle and not employable on the site. No payment will be admitted in respect of mixing plant standing idle, or any other consequential costs, losses or expenses.
.2 Submission for re-imbursement of such expenses must be supported by detailed and

- 1.9 Evacuation (Cont'd) .2 Stoppage of work: (Cont'd)
- .2 (Cont'd)
- duely authenticated records prepared by the Contractor which must be countersigned by the Departmental Representative. The Departmental Representative must be notified (by telephone if necessary) at the commencement and on cessation of each period of stoppage of work admissible under this Clause.
- .3 No claim will be entertained where such stoppage does not exceed one hour in aggregate each day.
- 1.10 Flagpersons Escorts and Security .1 The Contractor shall provide radio controlled competent security personnel for guards, escorts, and flagpersons for this project as specified in the OPS Plan attached that is attached in Other Documents.
- .2 The cost of providing Escorts/radio operators and Flagpersons will be incidental to the work.
- .3 Provide Security Gaurds at all temporary gates, accesses to storage and construction areas during construction operations.
- .4 Flagpersons will be provided as directed by the Departmental Representative.
- 1.11 Vehicles .1 Vehicles and equipment required to be in a restricted area must be equipped with 360° rotating amber beacons or must be escorted by a vehicle equipped with such a beacon. Escorted vehicle must have 4 way emergency flasher on.
- .2 Company vehicles will be removed from the construction site when not actually in use. If company vehicles are left at the airport they are to be stored in the staging/storage area or a location directed by Departmental Representative.
- 1.12 Staging/ Storage Areas .1 Use of site for work and storage limited to the areas indicated on the drawings or as directed by Departmental Representative.
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- 1.12 Staging/
Storage Areas
(Cont'd)
- .2 Security of any and all materials in storage or staging areas will be the sole responsibility of the Contractor. Move stored products or equipment which interfere with operations of Occupants or other contractors.
 - .3 Do not unreasonably encumber the site with materials and equipment.
 - .4 Any storage or staging area that may be established by the Contractor shall be fully enclosed and lockable.
 - .5 Entry to a restricted area through a storage or staging area will be manned by a uniformed security guard, or company representative that is clearly identified for that purpose.
- 1.13 Deliveries
- .1 All delivery vehicle comply to requirements of this Section.
 - .2 Contractor will supply radio controlled escort services as required.
- 1.14 Daily Security
- .1 Ensure that access to restricted area is secured at end of each work day. Lock all of the gates at the end of each work day.
 - .2 When work is to be done within restricted area after normal working hours, provide Departmental Representative with minimum 48 hours notice of area and times.
- 1.15 Unserviceable
Areas
- .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 in Accordance with TP312, Aerodrome Standards and Recommended Practices, including closed Runway and Taxiway Marking. Open flames and inflammable fuels are not permitted.
 - .2 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.
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- 1.16 Haul Routes
- .1 The cost of construction, maintenance and dust control of all haul routes will be incidental to the work.
 - .2 Site haul routes will be as indicated on contract drawings.
 - .3 The Departmental Representative will identify the haul routes on airport property. All Contractors' vehicles must follow the designated haul routes.
 - .4 The contractor will be responsible to ensure that all personnel are familiar with the haul routes prior to use.
 - .5 The contractor will supply and install signs and markings to clearly identify the haul routes to be used to the satisfaction of the Departmental Representative.
 - .6 Vehicles and drivers not following designated haul routes will be removed and permanently barred from the site.
 - .7 Maintain all haul routes in good condition at all times during construction. Provide dust control as directed by the Departmental Representative.
 - .8 Any mud or debris tracked onto the active aircraft operating surface by the Contract must be removed immediately so as not to present a hazard to aircraft engines.
 - .9 The use of calcium chloride for dust control will not be permitted on the airport.
 - .10 The contractor will be responsible to restore all haul routes, to the conditions which existed prior to construction, upon completion of the work to the satisfaction of the Departmental Representative.
- 1.17 Passes and Keys
- .1 A picture Identification e.g. Valid Drivers License will be required to enter airside. Temporary passes can be issued by contractor to their employees after verification of above picture identification.
 - .2 Keys necessary for access to restricted areas will be responsibility of contractor when issued by the Airport Manager. The keys will
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1.17 Passes and .2
Keys
(Cont'd)

(Cont'd)

be returned at the end of project work or according to arrangements laid down by the Airport Manager. Keys lost or not returned shall be subject to a charge of \$200.00.

- .3 All vehicles requiring access to restricted area are required to be registered and display a vehicle pass identity marker. Upon completion of the work, all markers will be removed and with all supporting documentation returned to the area pass control office. A charge of \$200.00 will be assessed for any items not returned.

PART 1 - GENERAL

1.1 REFERENCES

- .1 Government of Canada.
 - .1 Canada Labour Code - Part II
 - .2 Canada Occupational Health and Safety Regulations.
- .2 National Building Code of Canada (NBC):
 - .1 Part 8, Safety Measures at Construction and Demolition Sites.
- .3 Canadian Standards Association (CSA) as amended:
 - .1 CSA-S350-M1980(R2003) Code of Practice for Safety in Demolition of Structures.
- .4 Fire Protection Engineering Services, HRSDC:
 - .1 FCC No. 301, Standard for Construction Operations.
 - .2 FCC No. 302, Standard for Welding and Cutting.
- .5 Province of British Columbia:
 - .1 Workers Compensation Act Part 3-Occupational Health and Safety.
 - .2 Occupational Health and Safety Regulation

1.2 Worker
Compensation
Board Coverage

- .1 Comply fully with the Workers' Compensation Act, regulations and orders made pursuant
- .2 Maintain Workers' Compensation Board coverage during the term of the Contract, until and including the date that the Certificate of Final Completion is issued.

1.3 Compliance
with Regulations

- .1 Departmental Representative may terminate the Contract without liability to Departmental Representative where the Contractor, in the opinion of Departmental Representative, refuses to comply with a requirement of the Workers' Compensation Act or the Occupational
-

with Regulations .2 It is the Contractor's responsibility to
(Cont'd) ensure that all workers are qualified,
competent and certified to perform the work as
required by the Workers' Compensation Act or
the Occupational Health and Safety
Regulations.

- 1.4 SUBMITTALS .1 Work effected by submittal shall not proceed
until review is complete.
- .2 Submit the following:
.1 Health and Safety Plan.
.2 Copies of reports or directions issued
by Federal and Provincial health and safety
inspectors.
.3 Copies of incident and accident reports.
.4 Complete set of Material Safety Data
Sheets (MSDS), and all other documentation
required by Workplace Hazardous Materials
Information System (WHMIS) requirements.
.5 Emergency Procedures.
- .3 The Departmental Representative will review
the Contractor's site-specific project Health
and Safety Plan and emergency procedures, and
provide comments to the Contractor within 5
days after receipt of the plan. Revise the
plan as appropriate and resubmit to
Departmental Representative.
- .4 Medical surveillance: where prescribed by
legislation, regulation or safety program,
submit certification of medical surveillance
for site personnel prior to commencement of
work, and submit additional certifications for
any new site personnel to Departmental
Representative.
- .5 Submission of the Health and Safety Plan, and
any revised version, to the Departmental
Representative is for information and
reference purposes only. It shall not:
.1 Be construed to imply approval by the
Departmental Representative.
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|--------------------------------|----|---|
| 1.4 SUBMITTALS
(Cont'd) | .5 | (Cont'd) |
| | | .2 Be interpreted as a warranty of being complete, accurate and legislatively compliant. |
| | | .3 Relieve the Contractor of his legal obligations for the provision of health and safety on the project. |
| 1.5 FILING OF
NOTICE | .1 | File Notice of Project with Provincial authorities prior to commencement of Work. |
| | .2 | Provide copies of all notices to the Departmental Representative |
| 1.6 WORK PERMIT | .1 | Obtain all required permits related to project prior to commencement of Work. |
| 1.7 SAFETY
ASSESSMENT | .1 | Perform site specific safety hazard assessment related to project. |
| 1.8 MEETINGS | .1 | Pre-construction meeting: schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of work. |
| | .2 | Attend health and safety pre-construction meeting and all subsequent meetings called by the Departmental Representative. |
| 1.9 REGULATORY
REQUIREMENTS | .1 | Comply with Acts and regulations of the Province of British Columbia. |
| | .2 | Comply with specified standards and regulations to ensure safe operations at site. |
| | .3 | In event of conflict between any provisions of specified standards and regulations, the most stringent provision governs. Should a dispute arise in determining the most stringent requirement, the Departmental Representative will advise on the course of action to be followed. |

1.10 Health
and safety Plan

- .1 Conduct a site-specific hazard assessment based on review of Contract documents, required work, and project site. Identify any known and potential health risks and safety hazards.
- .2 Prepare and comply with a site-specific project Health and Safety Plan based on hazard assessment, including, but not limited to, the following:
 - .1 Primary requirements:
 - .1 Contractor's safety policy.
 - .2 Identification of applicable compliance obligations.
 - .3 Definition of responsibilities for project safety/organization chart for project.
 - .4 General safety rules for project.
 - .5 Job-specific safe work, procedures.
 - .6 Inspection policy and procedures.
 - .7 Incident reporting and investigation policy and procedures.
 - .8 Occupational Health and Safety Committee/Representative procedures.
 - .9 Occupational Health and Safety meetings.
 - .10 Occupational Health and Safety communications and record keeping procedures.
 - .2 Summary of health risks and safety hazards resulting from analysis of hazard assessment, with respect to site tasks and operations which must be performed as part of the work.
 - .3 List hazardous materials to be brought on site as required by work.
 - .4 Indicate Engineering and administrative control measures to be implemented at the site for managing identified risks and hazards.
 - .5 Identify personal protective equipment (PPE) to be used by workers.
 - .6 Identify personnel and alternates responsible for site safety and health.
 - .7 Identify personnel training requirements and training plan, including site orientation for new workers.
- .3 Develop the plan in collaboration with all subcontractors. Ensure that work/activities of subcontractors are included in the hazard assessment and are reflected in the plan.
- .4 Revise and update Health and Safety Plan as required, and re-submit to the Departmental Representative.

1.10 Health and safety Plan (Cont'd) .5 Departmental Representative's review: the review of Health and Safety Plan by Departmental Representative shall not relieve the Contractor of responsibility for errors or omissions in final Health and Safety Plan or of responsibility for meeting all requirements of construction and Contract documents.

1.11 RESPONSIBILITY .1 Assume responsibility as the Prime Contractor for work under this contract.

.2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

.3 Provide safety barricades and lights around work site as required to provide a safe working environment for workers and protection for pedestrian and vehicular traffic.

.4 Ensure that non-authorized persons are not allowed to circulate in designated construction areas of the work site.

.1 Provide appropriate means by use of barricades, fences, warning signs, traffic control personnel, and temporary lighting as required.

.2 Secure site at night time as deemed necessary to protect site against entry.

1.12 UNFORESEEN 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.

.2 Follow procedures in place for Employees Right to Refuse Work as specified in the Act for the Province of British Columbia.

1.13 Emergency Procedures .1 List standard operating procedures and measures to be taken in emergency situations. Include an evacuation plan and emergency contacts (i.e. names/telephone numbers) of:

.1 Designated personnel from own company.

1.13 Emergency
Procedures
(Cont'd)

- .1 (Cont'd)
 - .2 Regulatory agencies applicable to work and as per legislated regulations.
 - .3 Local emergency resources.
 - .4 Departmental Representative and site staff.
- .2 Include the following provisions in the emergency procedures:
 - .1 Notify workers and the first-aid attendant, of the nature and location of the emergency.
 - .2 Evacuate all workers safely.
 - .3 Check and confirm the safe evacuation of all workers.
 - .4 Notify the fire department or other emergency responders.
 - .5 Notify adjacent workplaces or residences which may be affected if the risk extends beyond the workplace.
 - .6 Notify Departmental Representative and site staff.
- .3 Provide written rescue/evacuation procedures as required for, but not limited to:
 - .1 Work with hazardous substances.
 - .2 Underground work.
 - .3 Work on, over, under and adjacent to water.
 - .4 Workplaces where there are persons who require physical assistance to be moved.
- .4 Design and mark emergency exit routes to provide quick and unimpeded exit.
- .5 Revise and update emergency procedures as required, and re-submit to the Departmental Representative.

1.14 Hazardous
Products

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous materials, and regarding labelling and provision of Material Safety Data Sheets (MSDS) acceptable to the Departmental Representative and in accordance with the Canada Labour Code.

1.14 Hazardous
Products
(Cont'd)

- .2 Where use of hazardous and toxic products cannot be avoided:
.1 Advise Departmental Representative beforehand of the product(s) intended for use. Submit applicable MSDS and WHMIS documents.

1.15 Ammonia Gas
Hazard

- .1 Excavation activities in areas adjacent to aprons and taxiways of certain airports have resulted in encounters with ammonia gas.
.1 Ammonia gas results from decomposition of urea, used for de-icing purposes, which seeps through surface pavement joints and cracks to become trapped in sometimes heavily concentrated pockets in underlying and adjacent soil.
- .2 There can be a possible ammonia gas hazard at this site.
- .3 Advise all workers, before any such excavation work, that should the smell of ammonia be detected at any time when working in excavations, then the workers must immediately leave the excavation area until such time as the volume of ammonia can be measured and appropriate safety measures are taken.
- .4 Ensure that all workers are aware that, at certain levels of concentration, unprotected exposure to ammonia can result in nose and throat irritation, breathing difficulty, and eye and skin irritation. Prolonged exposure without adequate protection could result in serious and permanent damage to personal health.
- .5 Notify Departmental Representative immediately upon detection of ammonia.
- .6 The Departmental Representative will act to have the ammonia gas concentration measured immediately and, depending upon the results, will direct procedures to be adopted for the safety of all personnel in adjacent areas.

- 1.16 Electrical Safety .1 Comply with authorities and ensure that, when installing new facilities or modifying existing facilities, all electrical personnel are completely familiar with existing and new electrical circuits and equipment and their operation.
- .1 Before undertaking any work, coordinate required energizing and de-energizing of new and existing circuits with Departmental Representative.
- .2 Maintain electrical safety procedures and take necessary precautions to ensure safety of all personnel working under the contract as well as of other personnel on site.
- 1.17 Electrical Lockout .1 Develop, implement and enforce use of established procedures to provide electrical lockout and to ensure the health and safety of workers for every event where work must be done on any electrical circuit or facility.
- .2 Prepare the lockout procedures in writing, listing step-by-step processes to be followed by workers, including how to prepare and issue the request/authorization form. Have procedures available for review upon request by the Departmental Representative.
- .3 Keep the documents and lockout tags at the site and list in a log book for the full duration of the Contract. Upon request, make such data available for viewing by Departmental Representative or by any authorized safety representative.
- 1.18 POSTING OF DOCUMENTS .1 Provide documents as follow and post on site in a conspicuous location:
- .1 Health and Safety Plan.
- .2 Sequence of work.
- .3 Emergency procedures.
- .4 Site drawing showing project layout, locations of the first-aid station, evacuation route and marshalling station, and the emergency transportation provisions.
- .5 Notice of Project.
- .6 Site plans.
- .7 Notice as to where a copy of the Workers' Compensation Act and Regulations are available on the work site for review by employees and workers.
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- 1.18 POSTING OF DOCUMENTS
(Cont'd)
- .1 (Cont'd)
 - .8 Workplace Hazardous Materials Information System (WHMIS) documents.
 - .9 Material Safety Data Sheets (MSDS).
 - .10 List of names of Joint Health and Safety Committee members, or Health and Safety Representative, as applicable.
 - .2 Comply with Provincial general posting requirements.
 - .3 Post all Material Safety Data Sheets (MSDS) on site, in a common area, visible to all workers and in locations accessible to tenants when work of this Contract includes construction activities adjacent to occupied areas.
 - .4 Postings should be protected from the weather, and visible from the street or the exterior of the principal construction site shelter provided for workers and equipment, or as approved by the Departmental Representative.
- 1.19 CORRECTION OF NON-COMPLIANCE
- .1 Immediately address health and safety non-compliance issues identified by Departmental Representative and regulatory agency having jurisdiction in the Province.
 - .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 immediately or within posted time. The General Contractor/subcontractors will be responsible for any costs arising from such a "stop work order".
- 1.20 BLASTING
- .1 Blasting or other use of explosives is not permitted without prior receipt of written instruction from Departmental Representative.
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- 1.21 Overloading .1 Ensure no part of work is subjected to a load which will endanger its safety or will cause permanent deformation.
- 1.22 Falsework .1 Design and construct falsework in accordance with CSA S269.1- 1975 (R2003).
- 1.23 POWDER
ACTUATED DEVICES .1 Use of powder actuated devices, in accordance with ANSI A10.3, is not permitted without prior receipt of written instruction from Departmental Representative.
- 1.24 Fire safety
and Hot Work .1 Obtain Departmental Representative's authorization before any welding, cutting or any other hot work operations can be carried out on site.
- .2 Hot work includes cutting/melting with use of torch, flame heating roofing kettles, or other open flame devices and grinding with equipment which produces sparks.
- 1.25 Fire Safety
Requirements .1 Store oily/paint-soaked rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
- .2 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.
- 1.26 Fire
Protection and
Alarm System .1 Fire protection and alarm systems shall not be obstructed, shut off, or left inactive at the end of a working day or shift.
- .2 Do not use fire hydrants, standpipes and hose systems for purposes other than firefighting.
- .3 Be responsible/liable for costs incurred from the fire department, the building owner and the tenants, resulting from false alarms.
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- 1.27 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 Health and Safety Coordinator or Competent Supervisor to stop or start Work when, at Health and Safety Coordinator's or 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.

- 1 FIRES .1 Fires and burning of rubbish on site not permitted.
- 2 DISPOSAL OF WASTES .1 Do not bury rubbish and waste materials on site unless approved by Departmental Representative.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- 3 DRAINAGE .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.
- 4 WORK ADJACENT TO WATERWAYS .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.
- .4 Avoid indicated spawning beds when constructing temporary crossings of waterways.
- .5 Do not blast under water or within 100 m of indicated spawning beds.
- 5 POLLUTION CONTROL .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment and plant to local authorities emission requirements.
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- 5 POLLUTION CONTROL .3
(Cont'd)
- .3 Prevent sandblasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.
 - .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.
 - .5 Spills of deleterious substances:
 - .1 Immediately contain, limit spread and clean up in accordance with provincial regulatory requirements.
 - .2 Report immediately to Departmental Representative and other appropriate Jurisdiction..
 - .3 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 phone number (613) 996-6666 collect.

1 REFERENCES AND
CODES

- .1 Perform Work in accordance with current edition of National Building Code of Canada (NBC)2010, National Fire Code of Canada (NFC) and British Columbia Building Code, 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.
- .3 Contractor will appoint and pay for independent Inspection and Testing for quality control and regulatory testing and inspection requirements.

2 FEES, PERMITS
AND CERTIFICATES

- .1 Submit applications to and provide authorities having jurisdiction with information requested.
- .2 Pay fees and obtain certificates and permits required.
- .3 Furnish certificates and permits.

3 CONSTRUCTION
SAFETY MEASURES

- .1 Without restricting other provisions or requirements of the Contract, observe construction safety measures of National Building Code, Provincial Government, Workers' Compensation Board and municipal authority provided that in any case of conflict or discrepancy more stringent requirements shall apply.
 - .2 Comply with requirements of FCC(Fire Commissionnaire Of Canada)No. 301.
 - .3 Provide fire extinguishers necessary to protect the work in progress and the Contractor's physical plant on site. Do not use specified permanent fire extinguishers for this purpose.
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- 4 FALSEWORK .1 Design and construct falsework in accordance with CSA S269.1.
- 5 WHMIS .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets acceptable to Labour Canada and Health and Welfare Canada.
- .2 Deliver copies of WHMIS data sheets to Departmental Representative on delivery of materials.
- 6 BUILDING SMOKING ENVIRONMENT .1 Comply with smoking restrictions.
- 7 TAXES .1 Pay applicable Federal, Provincial and Municipal taxes.
- 8 EXAMINATION .1 Examine existing conditions and determine conditions affecting work.

- 1 INSPECTION
- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
 - .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. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative shall pay cost of examination and replacement.
- 2 INDEPENDENT INSPECTION AGENCIES
- .1 Independent Inspection/Testing Agencies will be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work for Quality Assurance. The testing frequency for quality assurance will be determined by Departmental Representative.
 - .2 Contractor will furnish labour, equipment, and facilities to provide quality Control (QC) testing and any regulatory testing by an approved Testing Laboratory in accordance with appropriate specification sections and with the following minimum frequency of testing.

Minimum Field Density Requirements

Common Fill	1 Per 3000Sq.m each lift
Subgrade	1 Per 3000Sq.m each lift
Base	1 Per 3000Sq.m each lift
HMAC	1 Per 1000Sq.m each lift

2 INDEPENDENT .2 (Cont'd)
INSPECTION AGENCIES
(Cont'd)

Minimum Construction Control Testing

Work Phase	Testing	Frequency
Common Fill	Moisture-Density Relationship	1/material Source
	Field Density	1/3000SQ.m. /lift
Subgrade	Moisture-Density Relationship	1/material
	Field Density	1/3000SQ.m. /lift
Base	Moisture-Density Relationship	1/material
	Gradation and Crush Count	2/day
	Atterberg limits	1/material
HMAC	Dry bin aggregate	1/day
	gradation	1/2000tonne
	Plant marshall Tests*	4/day 1/500tonne
	Field Density	1/500 tonne Or 1/1000 sq.m each lift
Straight Edge 1/100SQ.m		

* Plant Marshall test to include for each briquette-density, stability, flow, voids, VMA and extraction for bitumen content, aggregate gradation and crush content. Each test to include 4 briquettes.

2 INDEPENDENT .2 (Cont'd)
INSPECTION AGENCIES
(Cont'd)

Portland Cement Concrete

Mix Production

Gradation	2
Crush count	2
Slump/air content	1/100cu.m.
Strength	3cylinders each day

Placing Straight Edge 2/10m

- .3 Provide equipment required for executing inspection and testing by appointed agencies.
- .4 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .5 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and reinspection.

3 ACCESS TO WORK .1 Allow inspection/testing agencies access to Work, and off site manufacturing and fabrication plants.

- .2 Co-operate to provide reasonable facilities for such access.

4 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
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- 4 PROCEDURES (Cont'd)
- .2 (Cont'd)
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.
- 5 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.
- 6 REPORTS
- .1 Submit 4 copies or one PDF copy of inspection and test reports to Departmental Representative.
 - .2 Provide copies to Subcontractor of work being inspected or tested and manufacturer or fabricator of material being inspected or tested.
- 7 TESTS AND MIX DESIGNS
- .1 Furnish test results and mix designs 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 evaluated by Departmental Representative, and Contractor may be compensated for any excess incurred and
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7 TESTS AND MIX .2 (Cont'd)
DESIGNS
(Cont'd) substantiated in accordance with the terms of
the Contract.

8 MILL TESTS .1 Submit mill test certificates as requested
and required of specification Sections.

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| <u>1 INSTALLATION
AND REMOVAL</u> | .1 | Provide temporary utilities controls in order to execute work expeditiously. |
| | .2 | Remove from site all such work after use. |
| <u>2 DEWATERING</u> | .1 | Provide temporary drainage and pumping facilities to keep excavations and site free from standing water. |
| <u>3 WATER SUPPLY</u> | .1 | Arrange for connection with appropriate utility company and pay all costs for installation, maintenance and removal. |
| | .2 | Supply of temporary water by Transport Canada is subject to Transport Canada requirements and may be discontinued by Transport Canada site representative at any time without notice, without acceptance of any liability for damage or delay caused by such withdrawal of temporary services. |
| <u>4 TEMPORARY POWER
AND LIGHT</u> | .1 | Arrange for connection with appropriate utility company. Pay all costs for installation, maintenance and removal. |
| | .2 | Supply of temporary power by Transport Canada is subject to Transport Canada requirements and may be discontinued by Transport Canada site representative at any time without notice, without acceptance of any liability for damage or delay caused by such withdrawal of temporary services. |
| <u>5 TEMPORARY
COMMUNICATION
FACILITIES</u> | .1 | Provide and pay for temporary telephone fax data hook up, lines equipment necessary for own use and for departmental representative. |
| <u>6 FIRE PROTECTION</u> | .1 | Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws. |
| | .2 | Burning rubbish and construction waste materials is not permitted on site. |
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- 7 LIGHTS FOR NIGHT WORK
- .1 The Contractor shall provide adequate Working Lighting for night work to permit good workmanship, inspection and safety.
 - .2 The Contractor is advised the the illumination is to be a minimum of 50 horizontal lux throughout the Work area and a minimum of 200 horizontal lux around the spreaders, rollers and other heavy equipment with a ratio of 2:1 throughout the Work area.
 - .3 The Contractor shall use metal halide floodlights units mounted on portable masts and spaced along the edge of the pavement or Work area.
 - .4 The Contractor shall fit glare shields to the floodlight units to eliminate any direct Nighttime illumination between the units and the Control Tower and runway approaches. These glare shields must be adjustable. If requested by the Control Tower personnel, the Contractor shall adjust shields or reposition the lights to limit glare interference with Airport traffic or the Control Tower. The contractor shall always point sources away from the Control Tower.
 - .5 The contractor shall provide and use mobile engine-driven generator units suitable to power one (1) or a group of lighting units. Ensure back-up generators are readily available as to minimize 'Night work' disruption.
 - .6 Submit to and Departmental Representative photometric work areas Layouts and with isolux curves or charts showing the pattern and layout of illumination, and quantity and spacing calculations to verify the the average illumination required levels are met.
 - .7 Contractor shall calculate and measure illumination levels in accordance with the standards of the Illumination Engineering Society (IESA) current practices and recommended levels.
 - .8 In addition to the above overall flood lighting, the contractor shall provide smaller self-contained lighting units in other localized work areas to provide sufficient illumination to ensure that the work does not suffer due to inadequate illumination.
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7 LIGHTS FOR NIGHT .9 The contractor shall keep sufficient number
WORK of spare units (with lamps) on site to
(Cont'd) eliminate any reduction in quality and
illumination level in the Work area at any
time during construction, should any of the
operating units fail.

- 1 SECTION INCLUDES .1 Construction aids.
- .2 Office and sheds.
- .3 Parking.

- 2 PRECEDENCE .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.

- 3 INSTALLATION AND REMOVAL .1 Provide construction facilities in order to execute work expeditiously.
- .2 Remove from site all such work after use.

- 4 SITE STORAGE/LOADING .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.

- 5 CONSTRUCTION PARKING .1 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractors' use of roads.
- .2 Parking space will be made available near the construction site. Maintain and administer this space as directed by Departmental Representative. Only construction equipment and a minimum of supervisory vehicles will be permitted in the construction (operational runway/taxiway/ramp) area.
- .3 Clean runways, taxiway, road, and parking areas where used by Contractor's equipment. Control Foreign Object Damage (FOD) at all times.
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| <u>6 SECURITY</u> | .1 | Provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays. |
| <u>7 OFFICES</u> | .1 | Provide office for Departmental Representative use heated to 22°C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table. |
| | .2 | Provide and pay for temporary telephone fax data hook up, lines equipment necessary for own use and for departmental representative's use. |
| | .3 | Provide a clearly marked and fully stocked first-aid case in a readily available location. |
| | .4 | Subcontractors may provide their own offices as necessary. Direct location of these offices. |
| <u>8 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. |
| <u>9 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. |
| <u>10 CONSTRUCTION EQUIPMENT AND PLANT</u> | .1 | The Contractor shall submit a heavy equipment, paving equipment and plant equipment list to the Departmental Representative. The list shall include:
.1 Make, year and model.
.2 Quantity of each machine used.
.3 Production capacity of asphalt concrete plant. |
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10 CONSTRUCTION
EQUIPMENT AND PLANT
(Cont'd)

- .2 Prove to the satisfaction of Departmental Representative that the construction equipment and plant are adequate to manufacture, transport, place and finish work to quality and production rates specified. If inadequate, replace or provide additional equipment or plant as directed.
- .3 Maintain construction equipment and plant in good, safe operating order.

1 SECTION INCLUDES .1 Barriers.

.2 Environmental Controls.

.3 Traffic Controls.

.4 Fire Routes.

- 2 REFERENCES .1 Canadian General Standards Board (CGSB):
- .1 CAN/CGSB-1.189-2000, Exterior Alkyd Primer for Wood.
 - .2 CAN/CGSB-1.59-97, Alkyd Exterior Gloss Enamel.
- .2 Canadian Standards Association (CSA):
- .1 CAN/CSA-O121-M1978(R1998), Douglas Fir Plywood.

- 3 INSTALLATION AND REMOVAL .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove from site all such work after use.

- 4 WORK AREA BARRIER .1 Provide barricades at locations as indicated and as directed by Departmental Representative to separate active air traffic areas from the work site.
- .2 Remove any temporary fencing and barricades upon substantial completion of the work. Repair damage caused by installation and removal of fence/barricades to satisfaction of Departmental Representative.

- 5 ACCESS TO SITE .1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

- 6 PUBLIC TRAFFIC FLOW .1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect the public.
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7 FIRE ROUTES .1 Maintain access to property including
overhead clearances for use by emergency
response vehicles.

8 PROTECTION FOR .1 Protect surrounding private and public
OFF-SITE AND PUBLIC property from damage during performance of
PROPERTY Work.

.2 Be responsible for damage incurred.

9 PROTECTION OF .1 Provide protection for finished and partially
BUILDING FINISHES finished building finishes and equipment
during performance of Work.

- 1 SECTION INCLUDES
- .1 Product quality, availability, storage, handling, protection, and transportation.
 - .2 Manufacturer's instructions.
 - .3 Quality of Work, coordination and fastenings.
 - .4 Existing facilities.

- 2 REFERENCES
- .1 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.
 - .2 The cost for such testing will be born by Departmental Representative in event of conformance with Contract Documents and by Contractor in event of non-conformance.
 - .3 Conform to latest date of issue of referenced standards in effect on date of submission of Tenders, except where specific date or issue is specifically noted.

- 3 DEFINITIONS
- .1 Workplace Hazardous Materials Information System (WHMIS): A Canada-wide system designed to give employers and workers information about hazardous materials used in the workplace. Under WHMIS, information on hazardous materials is to be provided on container labels, material safety data sheets (MSDS), and worker education programs. WHMIS is put into effect by a combination of federal and provincial laws.
 - .2 Comply with Workplace Hazardous Materials Information System Regulation (WHMIS) Certified in accordance with the applicable legislation of the authority having jurisdiction.

- 4 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
-

- 4 QUALITY
(Cont'd)
- .1 (Cont'd)
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.
 - .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.
- 5 AVAILABILITY
- .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.
- 6 STORAGE, HANDLING AND PROTECTION
- .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
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6 STORAGE, HANDLING .2
AND PROTECTION
(Cont'd)

- .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not 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 Store sheet materials, lumber and on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .8 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.
- .9 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

7 TRANSPORTATION

- .1 Pay costs of transportation of products required in performance of Work.

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.
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- 8 MANUFACTURER'S INSTRUCTIONS (Cont'd) .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.
- 9 QUALITY OF WORK .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.
- 10 CO-ORDINATION .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.
- 11 REMEDIAL WORK .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.
- 12 FASTENINGS .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
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12 FASTENINGS
(Cont'd)

- .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 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

13 FASTENINGS -
EQUIPMENT

- .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.

14 PROTECTION OF
WORK IN PROGRESS

- .1 Adequately protect Work completed or in progress. Work damaged or defaced due to failure in providing such protection is to be removed and replaced, or repaired, as directed by Departmental Representative, at no increase in Contract Price or Contract Time.

15 EXISTING
UTILITIES

- .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, and/or building occupants and pedestrian and vehicular traffic.
 - .2 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.
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15 EXISTING
UTILITIES
(Cont'd)

- .3 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.
- .4 Before commencing work, establish location and extent of service lines in area of Work and notify Departmental Representative of findings.
- .5 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.
- .6 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .7 Record locations of maintained, re-routed and abandoned service lines.

16 CONTRACTOR'S
OPTIONS FOR
SELECTION OF
MATERIALS

- .1 The Departmental Representative's decision shall be final and conclusive in respect of the work. Interpretation of Contract by Departmental Representative, including whether or not the quality of any materials supplied or proposed to be supplied meets the requirements of the contract.
 - .2 When materials are specified by referenced standard, select any material that meets or exceeds the specified standard.
 - .3 Where materials are required to be listed on the "Canadian General Standards Board, Qualified Products List" select any manufacturer so listed.
 - .4 Materials specified by "Prescriptive" or "Performance" specification, select any material meeting or exceeding specification.
 - .5 When materials are specified by a Standard, Prescriptive or Performance specifications, upon request of the Departmental Representative, obtain from manufacturer an independent testing laboratory reporting,
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16 CONTRACTOR'S .5 (Cont'd)
OPTIONS FOR showing that the material or equipment meets
SELECTION OF or exceeds the specified requirements.
MATERIALS
(Cont'd)

17 Substitution .1 No substitutions will be permitted without
prior written approval of Departmental
Representative.

.2 Proposals for substitution, submitted after
award of contract, must include statements of
respective costs of items originally specified
and the proposed substitution. Proposals will
only be considered by Departmental
Representative if:

.1 materials selected by tenderer from
those specified, are not available;

.2 delivery date of materials selected from
those materials specified would unduly delay
completion of contract, or

.3 alternative material to those specified,
which are brought to the attention of and
considered by Departmental Representative as
equivalent to the material specified and will
result in a credit to the Contract amount.

.3 Should proposed substitution be accepted
either in part or in whole, assume full
responsibility and costs when substitution
affects other work on project. Pay for design
or drawing changes required as result of
substitution.

.4 Amounts of all credits arising from approval
of substitutions will be determined by
Departmental Representative and Contract Price
will be reduced accordingly.

18 CONSTRUCTION .1 On request, prove to the satisfaction of
EQUIPMENT AND PLANT Departmental Representative that the
construction equipment and plant are adequate
to manufacture, transport, place and finish
work to quality and production rates
specified. If inadequate, replace or provide
additional equipment or plant as directed.

.2 Maintain construction equipment and plant in
good operating order.

- 1 SECTION INCLUDES .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.
- 2 PRECEDENCE .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.
- 3 REFERENCES .1 Departmental Representative's identification of existing survey control points and property limits.
- 4 SETTING OUT OF WORK .1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.
- .2 Provide devices needed to lay out and construct work.
- .3 Supply such devices as straight edges and templates required to facilitate Departmental Representative 's inspection of work.
- .4 Supply stakes and other survey markers required for laying out work.
- 5 QUALIFICATIONS OF SURVEYOR .1 Qualified registered land surveyor, licensed to practice in Place of Work, acceptable to Departmental Representative.
- 6 SURVEY REFERENCE POINTS .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.
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- 6 SURVEY REFERENCE POINTS
(Cont'd)
- .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.
- 7 Survey Requirements
- .1 In accordance with Project General Instructions Section 01 11 05 - item 9 Setting Out of Work.
- 8 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 within 2 m of structures. Cap or otherwise seal lines at cut-off points as directed by Departmental Representative.
- 9 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.
- 10 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 locations of completed Work that conform and do not conform with Contract Documents.

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| <u>1 SECTION INCLUDES</u> | .1 | Requirements and limitations for cutting and patching the Work. |
| <u>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>3 SUBMITTALS</u> | .1 | Submit written request in advance of cutting or alteration which affects:
.1 Structural integrity of any element of Project.
.2 Integrity of weather-exposed or moisture-resistant elements.
.3 Efficiency, maintenance, or safety of any operational element.
.4 Visual qualities of sight-exposed elements.
.5 Work of Department or separate contractor. |
| | .2 | Include in request:
.1 Identification of Project.
.2 Location and description of affected Work.
.3 Statement on necessity for cutting or alteration.
.4 Description of proposed Work, and products to be used.
.5 Alternatives to cutting and patching.
.6 Effect on Work of Department or separate contractor.
.7 Written permission of affected separate contractor.
.8 Date and time work will be executed. |
| <u>4 MATERIALS</u> | .1 | Required for original installation. |
| | .2 | Change in Materials: Submit request for substitution. |
| <u>5 PREPARATION</u> | .1 | Inspect existing conditions, including elements subject to damage or movement during cutting and patching. |
| | .2 | After uncovering, inspect conditions affecting performance of Work. |
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5 PREPARATION
(Cont'd)

- .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 may be exposed by uncovering work; maintain excavations free of water.

6 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 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.
- .6 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- .7 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.
- .8 Restore work with new products in accordance with requirements of Contract Documents.
- .9 Fit Work to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .10 Refinish surfaces to match adjacent finishes: For continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.
- .11 Conceal pipes, ducts and wiring in construction of finished areas except where indicated otherwise.

1 SECTION INCLUDES .1 Progressive cleaning.

.2 Final cleaning.

2 PROJECT
CLEANLINESS

.1 Maintain Work in tidy condition, free from accumulation of waste products and debris.

.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 on-site containers for collection of waste materials and debris.

.5 Provide and use clearly marked separate bins for recycling.

.6 Remove waste material and debris from site and deposit in waste container at end of each working day.

.7 Dispose of waste materials and debris off site.

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 Prior to final review, remove surplus products, tools, construction machinery and equipment.

.3 Remove waste products and debris.

.4 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.

.5 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

3 FINAL CLEANING .6 Sweep and wash clean paved areas.
(Cont'd)

PART 1 - GENERAL

1.1 Section Includes

- .1 Text, schedules and procedures for systematic Waste Management Program for construction, deconstruction, demolition, and renovation projects, including:
 - .1 Diversion of Materials.
 - .2 Waste Audit (WA) - Schedule A.
 - .3 Waste Reduction Workplan (WRW) - Schedule B.
 - .4 Cost/Revenue Analysis Workplan (CRAW) - Schedule D.
 - .5 Materials Source Separation Program (MSSP).
 - .6 Canadian Governmental Responsibility for the Environment Resources - Schedule E.

1.2 Definitions

- .1 Cost/Revenue Analysis Workplan (CRAW): Based on information from WRW, and intended as financial tracking tool for determining economic status of waste management practices.
 - .2 Demolition Waste Audit (DWA): Relates to actual waste generated from project.
 - .3 Materials Source Separation Program (MSSP): Consists of series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.
 - .4 Recyclable: Ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse by others.
 - .5 Recycle: Process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
 - .6 Recycling: Process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
-

1.2 Definitions
(Cont'd)

- .7 Reuse: Repeated use of product in same form but not necessarily for same purpose. Reuse includes:
 - .1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
 - .2 Returning reusable items including pallets or unused products to vendors.
- .8 Salvage: Removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.
- .9 Separate Condition: Refers to waste sorted into individual types.
- .10 Source Separation: Acts of keeping different types of waste materials separate beginning from first time they became waste.
- .11 Waste Audit (WA): Detailed inventory of materials. Involves quantifying by volume/weight amounts of materials and wastes generated during construction, demolition, deconstruction, or renovation project. Indicates quantities of reuse, recycling and landfill. Refer to Schedule A.
- .12 Waste Management Coordinator (WMC) : Contractor representative responsible for supervising waste management activities as well as coordinating related, required submittal and reporting requirements.
- .13 Waste Reduction Workplan (WRW): Written report which addresses opportunities for reduction, reuse, or recycling of materials. Refer to Schedule B. WRW is based on information acquired from WA (Schedule A).

1.3 Documents

- .1 Maintain at job site, one copy of following documents:
 - .1 Waste Audit.
 - .2 Waste Reduction Workplan.
 - .3 Material Source Separation Plan.
 - .4 Schedules A, B,D and E completed for project.
-

- 1.4 Submittals
- .1 Prepare and submit following prior to project start-up:
 - .1 Submit 2 copies of completed Waste Audit (WA): Schedule A.
 - .2 Submit 2 copies of completed Waste Reduction Workplan (WRW): Schedule B.
 - .3 Submit 2 copies of Cost/Revenue Analysis Workplan (CRAW): Schedule D.
 - .4 Submit 2 copies of Materials Source Separation Program (MSSP) description.
 - .2 Submit before final payment summary of waste materials salvaged for reuse, recycling or disposal by project using deconstruction/disassembly material audit form.
 - .1 Failure to submit could result in hold back of final payment.
 - .2 Provide receipts, scale tickets, waybills, and show quantities and types of materials reused, recycled, co-mingled and separated off-site or disposed of.
 - .3 For each material reused, sold or recycled from project, include amount in tonnes or quantities by number, type and size of items and the destination.
 - .4 For each material land filled or incinerated from project, include amount in tonnes of material and identity of landfill, incinerator or transfer station.
- 1.5 Waste Audit (WA)
- .1 Conduct WA prior to project start-up.
 - .2 Prepare WA: Schedule A.
 - .3 Record, on WA - Schedule A, extent to which materials or products used consist of recycled or reused materials or products.
- 1.6 Waste Reduction Workplan (WRW)
- .1 Prepare WRW prior to project start-up.
 - .2 WRW should include but not limited to:
 - .1 Destination of materials listed.
 - .2 Deconstruction/disassembly techniques and sequencing.
 - .3 Schedule for deconstruction/disassembly.
 - .4 Location.
 - .5 Security.
 - .6 Protection.
 - .7 Clear labelling of storage areas.
-

- | | |
|--|--|
| <p>1.6 Waste Reduction .2
 <u>Workplan (WRW)</u>
 (Cont'd)</p> | <p>(Cont'd)</p> <p>.8 Details on materials handling and removal procedures.</p> <p>.9 Quantities for materials to be salvaged for reuse or recycled and materials sent to landfill.</p> <p>.3 Structure WRW to prioritize actions and follow 3R's hierarchy, with Reduction as first priority, followed by Reuse, then Recycle.</p> <p>.4 Describe management of waste.</p> <p>.5 Identify opportunities for reduction, reuse, and recycling of materials. Based on information acquired from WA.</p> <p>.6 Post WRW or summary where workers at site are able to review content.</p> <p>.7 Set realistic goals for waste reduction, recognize existing barriers and develop strategies to overcome these barriers.</p> <p>.8 Monitor and report on waste reduction by documenting total volume and cost of actual waste removed from project.</p> |
| <p>1.7 Demolition
 <u>Waste Audit (DWA)</u></p> | <p>.1 Prepare DWA prior to project start-up.</p> <p>.2 Provide inventory of quantities of materials to be salvaged for reuse, recycling, or disposal.</p> |
| <p>1.8 Cost/Revenue
 <u>Analysis Workplan</u>
 (CRAW)</p> | <p>.1 Prepare CRAW: Schedule D.</p> |
| <p>1.9 Materials
 <u>Source Separation</u>
 <u>Program (MSSP)</u></p> | <p>.1 Prepare MSSP and have ready for use prior to project start-up.</p> <p>.2 Implement MSSP for waste generated on project in compliance with approved methods and as reviewed by Departmental Representative.</p> <p>.3 Provide on-site facilities for collection, handling, and storage of anticipated quantities of reusable and recyclable materials.</p> |

- | | | |
|---|----|--|
| 1.9 Materials Source Separation Program (MSSP) (Cont'd) | .4 | Provide containers to deposit reusable and recyclable materials. |
| | .5 | Locate containers in locations, to facilitate deposit of materials without hindering daily operations. |
| | .6 | Locate separated materials in areas which minimize material damage. |
| | .7 | Collect, handle, store on-site, and transport off-site, salvaged materials in separate condition.
.1 Transport to approved and authorized recycling facility or to users of material for recycling. |
| 1.10 Storage, Handling And Protection | .1 | Store, materials to be reused, recycled and salvaged in locations as directed by Departmental Representative. |
| | .2 | Unless specified otherwise, materials for removal become Contractor's property. |
| | .3 | Protect, stockpile, and store salvaged items. |
| | .4 | Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility. |
| | .5 | Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities.
.1 On-site source separation is recommended.
.2 Remove co-mingled materials to off-site processing facility for separation.
.3 Provide waybills for separated materials. |
| 1.11 Disposal Of Wastes | .1 | Do not bury rubbish or waste materials. |
| | .2 | Do not dispose of waste, volatile materials, mineral spirits, oil, paint thinner, into waterways, storm, or sanitary sewers. |
| | .3 | Keep records of construction waste including:
.1 Number and size of bins.
.2 Waste type of each bin. |
-

- 1.11 Disposal Of Wastes (Cont'd)
- .3 (Cont'd)
 - .3 Total tonnage generated.
 - .4 Tonnage reused or recycled.
 - .5 Reused or recycled waste destination.
 - .6.
- .4 Remove materials from deconstruction as deconstruction/disassembly Work progresses.
- .5 Prepare project summary to verify destination and quantities on a material-by-material basis as identified in pre-demolition material audit.
- 1.12 Use Of Site And Facilities
- .1 Execute work with least possible interference or disturbance to normal use of premises.
- 1.13 SCHEDULING
- .1 Coordinate Work with other activities at site to ensure timely and orderly progress of Work.
- PART 2 - PRODUCTS
- .2 Not Used.
- PART 3 - EXECUTION
- 3.1 Application
- .1 Do Work in compliance with WRW.
 - .2 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.
- 3.2 Cleaning
- .1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.
 - .2 Clean-up work area as work progresses.
 - .3 Source separate materials to be reused/recycled into specified sort areas.
-

- 3.3

Diversion Of Materials

.1

From following list, separate materials from general waste stream and stockpile in separate piles or containers, as reviewed by Departmental Representative, and consistent with applicable fire regulations.

.1 Mark containers or stockpile areas.

.2 Provide instruction on disposal practices.

.2

On-site sale of salvaged, recovered, reusable and recyclable materials is not permitted.

.3

Construction Waste. Modify the list for the project as required.

Material Type	Recommended Diversion %	Actual Diversion %
Cardboard	100	
Plastic Packaging	100	
Rubble	100	
Steel	100	
Wood (uncontaminated)	100	
Other		

- 3.4

Waste Audit (WA)

.1

The following pertains to Schedule A - Waste Audit (WA). Column-1 refers to the category of waste, and a physical description of the material (eg. off-cuts, clean drywall, etc.). Column-2 refers to the total quantity of materials received by the Contractor. Measurement units must be specified. Column-3 refers to the estimated percentage of material that is waste. Column-4 refers to the total quantity of waste (column-2 x column-3). Column-5 refers to the areas(s) in which the waste was generated. Column-6 refers to the total percentage of recycled material from the specified total quantity of waste (column-4). Column-7 refers to the total percentage of reused material from the specified total quantity of waste (column-4).

.2

Schedule A - Waste Audit (WA) the following is an example. Modify items list as required for the project.

(1) Material Category	(2) Material Quantity Unit	(3) Estimate d Waste %	(4) Total Quantity of Waste (unit)	(5) Generati on Point	(6) % Recycled	(7) % Reused
Asphalt						
Concrete						

3.4 Waste Audit .2 (Cont'd)

(WA)

(Cont'd)

Gravel
Wood and
Plastics
Material
Descrip.
Off-cuts
Warped
Pallet
Forms
Plastic
Packaging
Cardboard
Packaging

Other

Doors
and
Windows
Material
Descrip.
Painted
Frames
Glass
Wood
Metal
Other

3.5 Waste Reduction .1 The following pertains to Schedule B - Waste
Workkplan (WRW) Reduction Workplan (WRW). Column-1 refers to
the category and type of waste materials.
Column-2 refers to the persons responsible for
completing the WRW. Column-3 refers to
Column-4 of Schedule A. Column-4 refers to the
amount of reused waste predicted and realized.
Column-5 refers to the amount of recycled
waste predicted and realized. Column-6 refers
to the approved recycling facility.

.2 Schedule B. Modify items list as required for
the project

(1)	(2)	(3)	(4)	(5)	(6)
Material	Persons	Total	Reused	Actual	Actual
Category	Respon-	Quantity	Amount	Recycled	Material
	sible	of	(units)	Amount	Destina
		Waste	Projected	(unit)	- tion
		(unit)		Projected	

3.5 Waste Reduction .2 (Cont'd)
 Workplan (WRW)
 (Cont'd)

Asphalt	
Concrte	
Gravel	
Wood	
and	
Plastics	
Material	
Descrp.	
Chutes	
Warped	
Pallet	
Forms	
Plastic	
Packag	
ing	
Card-	
board	
Packaging	
Other	
Doors	
and	
Windows	
Material	
Descrip.	
Painted	
Frames	
Glass	
Wood	
Metal	
Other	

3.6 Cost/Revenue .1 The following pertains to Schedule D -
 Analysis Workplan Cost/Revenue Analysis Workplan (CRAW).
 (CRAW) Column-1 refers to the type of material
 salvaged. Column-2 refers to the total
 quantity of material shown in Column-1.
 Column-3 refers to the cumulative volume of
 salvaged material. Column-4 refers to the
 total weight in kilograms. Column-5 refers to
 either the cost associated with disposal

- 3.6 Cost/Revenue Analysis Workplan (CRAW) (Cont'd)
- .1 (Cont'd)
indicated with a (-), or the credit received from disposal indicated with a (+). Column-6 refers to the sub-total of column-5 for individual categories. Row-7 refers to summation of all column-6. A negative total indicates a cost. A positive total indicates revenue.
- .2 Schedule D - Cost/Revenue Analysis Workplan (CRAW). Modify the Table as required for the project.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Material	Total	Volume	weight	Disposal	Category	Cost (-)
Description	Quantity	(cum)	Tonne	Cost/Credit	Sub-Total	Revenue (+)
	(unit)			\$ (+/-)	\$ (+/-)	
Gravel						
asphalt						
Concrete						
Wood						
Wood Stud						
Plywood						
Baseboard						
- Wood						
Door Trim						
- Wood						
Cabinet						
Doors and						
Windows						
Panel						
Regular						
Slab						
Regular						
Wood						
Laminate						
Byfold -						
Closet						
Glazing						
Total						

- 3.7 Canadian Governmental Departments Chief Responsibilities For The Environment
- .1 Schedule E - Government Chief Responsibility for the environment
- .1 British Columbia, Ministry of Environment Lands and Parks, 810 Blanshard Street, 4th Floor, Victoria, BC V8V 1X4. Ph: 604 387 1161 Ph: 604 356 6464
- .2 British Columbia, Waste Reduction Commission Soils and Hazardous Waste, 770 South Pacific Blvd., Suit 303, Vancouver, BC V6B 5E6. Ph: 604 660 9550 Ph: 604 660 9596

- 1 SECTION INCLUDES .1 Administrative procedures preceding preliminary and final inspections of Work.
- 2 PRECEDENCE .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.
- 3 INSPECTION AND DECLARATION .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 Interim completion Inspection.
- .2 Departmental Representative's Interim Completion Inspection: Departmental Representative and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor shall correct Work accordingly.
- .3 Comply with Departmental Representative's instructions for correction of items of Work listed in Certificate of Interim Completion and for access to occupied areas.
- .4 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 Operation of systems have been demonstrated to Departmental Representative's personnel.
 .4 Work is complete and ready for Final Inspection.
- .5 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 Representative, complete outstanding items and request reinspection.
-

3 INSPECTION AND
DECLARATION
(Cont'd)

- .6 Declaration of Substantial Performance: when Departmental Representative consider deficiencies and defects have been corrected and it appears requirements of Contract have been substantially performed, make application for certificate of Substantial Performance (Interim Certificate of Completion).
- .7 Commencement of Lien and Warranty Periods: date of Departmental Representative's acceptance of submitted declaration of Substantial Performance shall be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.
- .8 Final Payment: When Departmental Representative and Departmental Representative consider final deficiencies and defects have been corrected and it appears requirements of Contract have been totally performed, make application for final payment. If Work is deemed incomplete by Departmental Representative, complete outstanding items and request reinspection.
- .9 Payment of Holdback: After issuance of certificate of Substantial Performance of Work, submit an application for payment of holdback amount in accordance with General Conditions.

1 SECTION INCLUDES

- .1 As-built, samples, 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.

2 PRECEDENCE

- .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.

3 SUBMISSION

- .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 If requested, furnish evidence as to type, source and quality of products provided.
- .5 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .6 Pay costs of transportation.

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.
-

- | | | | |
|---|-----------------------------------|----|---|
| 4 | <u>FORMAT
(Cont'd)</u> | .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, process flow, 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. |
| 5 | <u>CONTENTS - EACH
VOLUME</u> | .1 | Table of Contents: provide title of project;

.1 date of submission; names,
.2 addresses, and telephone numbers of Consultant and 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, including local source of supplies and replacement parts. |
| 6 | <u>AS-BUILTS AND
SAMPLES</u> | .1 | Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage. |
| | | .2 | 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. |
-

- 6 AS-BUILTS AND
SAMPLES
(Cont'd)
- .3 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
 - .4 Keep record documents and samples available for inspection by Departmental Representative.
 - .5 Turn one set, paper copy and electronic copy, of AS-BUILT drawings and specifications over to Departmental Representative on completion of work.

- 7 Record Drawings
- .1 Departmental Representative will provide two sets of white prints for record drawing purposes.
 - .2 Maintain project record drawings and record accurately deviations from Contract documents.
 - .3 Record changes in red. Mark on one set of prints and at completion of project and prior to final inspection, neatly transfer notations to second set and submit both sets to Departmental Representative.
 - .4 Record following information:
 - .1 Field changes of dimension, elevation and detail.
 - .2 Changes made by Change Order or Field Order.

- 8 Site Survey
AS-BUILTS
- .1 Submit to Departmental Representative a UTM NAD 83 digital typographical control survey of completed area of work as described in section 01 11 05 item 9.

- 9 RECORDING
ACTUAL SITE
CONDITIONS
- .1 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
 - .2 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.
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|-------------|----|--|
| 9 RECORDING | .2 | Specifications: (Cont'd) |
| ACTUAL SITE | .2 | Changes made by Addenda and change |
| CONDITIONS | | orders. |
| (Cont'd) | .3 | Other Documents: maintain manufacturer's |
| | | certifications, inspection certifications, |
| | | field test records, required by individual |
| | | specifications sections. |