

Improvements to the Sault Ste. Marie Canal Emergency Swing Dam

*Parks Canada Agency
Sault Ste. Marie National Historic Site of Canada*

Contract Documents and Specifications

Prepared By;



Prepared For;



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PART 1 – GENERAL

1.1 SITE

1. The site for the work described in this Specification is the Emergency Swing Dam at the Sault Ste. Marie Canal National Historic Site of Canada, in the District of Algoma, Ontario.

1.2 DESCRIPTION OF WORK

1. Work of this Contract generally comprises of the reconstruction of non-structural components for the Emergency Swing Dam and all associated work and is not limited to the following:
 1. Wicket Chain Stop Blocks:
 1. Remove and replace wood stop blocks.
 2. Reconstruct non-original steel chain stops.
 2. Decking
 1. Remove and replace all wood decking.
 2. Extend south decking as required.
 3. Handrails
 1. Remove and replace wood handrails.
 2. Install gates as required.
 4. Maintenance Shed
 1. Remove and replace maintenance shed.
 2. Remove and reinstall equipment within maintenance shed.
 5. Structural Steel Coating
 1. Sandblast and paint all wood to steel faces and limited access components as required.
 6. Turntable
 1. Seal all cracks within the turntable.
 7. End Supports
 1. Install end supports for dam.
 2. Supply and install support jacks and shrouds.

1.3 FAMILIARIZATION WITH SITE

1. All bidders, before submitting their tender, are to inspect and examine the site and its surroundings and to satisfy themselves as to the form and nature of the work and materials necessary for the completion of the works, the means of access to the site, the accommodation they may require, and in general to obtain all necessary information as to existing construction and services, risks, contingencies and other circumstances which may influence or affect their tender. No allowance shall be made subsequently in this connection on account of error or negligence to properly observe and determine the conditions that will apply.

1.4 CODES & STANDARDS

1. Perform work in accordance with standard construction practices, these specifications, the latest edition of the National Building Code of Canada (NBC), National Fire Code of Canada, and any other code of provincial or local application including all amendments up to project tender closing date provided. In

any case of conflict or discrepancy, the more stringent requirements shall apply.

2. Meet or exceed requirements of contract documents and specified standards, codes and referenced documents.

1.5 COMMUNICATIONS

1. After the award of contract, all communications in connection with work shall be directed to:

Parks Canada Project Manager (Departmental Representative)

1.6 WORK SCHEDULE

1. Provide in form acceptable to the Departmental Representative, within 10 working days after Contract award, gantt chart showing dates for:
 1. Anticipated progress stages;
 2. Submission of shop drawings, material lists and samples;
 3. Commencement and completion of Specification Sections;
 4. Hours of Work;
 5. Final Completion date within Contract document period.
2. Submit updates of the schedule one (1) day prior to each progress meeting with indication of the status of each activity and provide an explanation of necessary changes.
3. Normal working hours Monday to Friday, 08:00 Hours to 17:00 Hours. Schedule work in cooperation with the Consultant/Departmental Representative and the Site. Prior approval must be obtained from the Parks Canada Agency (PCA) for construction during non-normal hours.
4. The schedule, including all updates, shall be subject to the Departmental Representative's approval. Take necessary measures to complete work within approved time. Do not change schedule without Departmental Representative's approval.
5. Submit three (3) copies of the Construction Schedule and any subsequent re-submission to the Departmental Representative.

1.7 CONTRACTOR USE
OF PREMISES

1. The Sault Ste. Marie Canal National Historic Site of Canada will remain open to the public and staff. The required working area adjacent to the Emergency Swing Dam shall be fenced off by the Contractor. Co-operate with the Site officials when undertaking work to permit for safe and uninterrupted use and the normal functioning of services and facilities.
2. Access to the Emergency Swing Dam will be closed to the public during construction.
3. Do not block egress or access routes, exits, etc. Do not unreasonably encumber site with materials or equipment.
4. There are restrictions on the size of vehicles that can access the site. Contractor to become cognizant of and comply with restrictions placed on access by Parks Canada.
5. Assume full responsibility for protection and safekeeping of products and the environment under this Contract, including restrictions stipulated by Parks Canada.

1.8 DOCUMENT REQUIRED

1. Maintain at job site, one copy of each of the following:
 1. Contract Drawings
 2. Specifications
 3. Addenda
 4. Reviewed Shop Drawings
 5. List of outstanding shop drawings
 6. Change Orders
 7. Other modifications to Contract
 8. Field Test Reports
 9. Copy of Approval Work Schedule
 10. Site Specific Safety Plan

1.9 INSPECTION
& TESTING

1. Testing on materials and equipment, as specified within trade sections, is the responsibility of the Consultant, except where specified otherwise herein or within trade sections.
2. Provide all necessary instruments, equipment and qualified personnel to perform tests where applicable.
3. At completion of tests, turn over two sets of fully documented tests reports to the Consultant/Departmental Representative.
4. Where tests or inspection reveal work not in accordance with the Contract, the Contractor shall bear the cost of such tests and additional tests as the Consultant/Departmental Representative requires to verify the acceptability of corrected work.

5. Pay costs for uncovering and making good work that is covered before inspection or testing is completed and approved by the Departmental Representative.

1.10 ACCEPTANCE

1. At completion of project, in company with the Consultant/Departmental Representative, make a check of all work and correct all discrepancies and defects. Be aware that the Final Certificate of Completion will not be issued until such time that Contractor has fully completed and turned over all specified documents, test results and any guarantee/warranty certificates as issued by any manufacturer.

1.11 WORKS COORDINATION

1. The General Contractor is responsible for coordinating the work of the various trades, where the work of such trades interfaces with each other.
2. The General Contractor shall convene meetings between trades whose work interfaces and ensure that they are fully aware of the areas and the extent of where interfacing is required. Provide each trade with the plans and specs of the interfacing trade, as required, to assist them in planning and carrying out their respective work.
3. Shop drawing review and material ordering shall only commence after this coordination has taken place between trades and all conditions affecting the work of the interfacing trades has been made known and accounted for.
4. Ensure coordination and cooperation between trades in order facilitate the general progress of the work and avoid situations of spatial interference.
5. Ensure that each trade provides all other trades reasonable opportunity for the completion of the work and in such a way as to prevent unnecessary delays, cutting, patching and the need to remove and replace completed work.
6. Parks Canada Agency will not be responsible for or held accountable for any extra costs incurred as a result of the failure to carry out coordination work. Disputes between the various trades as a result of their not being informed of the area and extent of interface work shall be the sole responsibility of the General Contractor and shall be resolved by him at no extra cost to the Contract.

1.12 DEPARTMENT

FURNISHED ITEMS

1. Contractor Responsibilities:

1. Review shop drawings, product data, samples, and other submittals. Submit to Departmental Representative notification of any observed discrepancies or problems anticipated due to non-conformance with Contract Documents.
2. Handle products at site, including uncrating, sorting and storage.
3. Protect products from damage, and from exposure to elements.
4. Assemble, install, connect, adjust, and finish products.
5. Provide installation inspections required by public authorities.
6. Repair or replace items damaged by Contractor or Subcontractor on site (under his control).

1.13 ADDITIONAL
DRAWINGS

1. Departmental Representative may furnish additional drawings for clarification. These drawings have the same meaning and intent as if they were included with plans referred to in Contract Documents.

1.14 RELICS &
ANTIQUITIES

1. Comply with CEAA Environmental Screening.
2. The site is a National Historic Site of Canada and must be treated as such. The contractor must recognize that all work at the National Historic Site is subject to the *Standards and Guidelines for the Conservation of Historic Places in Canada*.
3. Relics, buried artefacts, antiquities, and other items of historical or scientific interest found on site shall remain property of Parks Canada. Advise Departmental Representative and receive direction regarding protecting such resources, should any be discovered by either archaeology or the contractor. The contractor may be directed to stop work on the area and redirect work elsewhere until the issue is resolved to the Departmental Representative's satisfaction.
4. As such, all excavations beyond the immediate work area as outlined by the Consultant/Departmental Representative, is strictly prohibited. Any deviation must be approved in advance. At least three weeks notice is required, to allow appropriate review and approval of any such deviation or proposal.
5. Archaeology staff from Parks Canada will monitor the project work and may require temporary stop of work to carry out site investigations.

6. The contractor shall protect subsurface infrastructure, historic features, profiles and ground features, as directed by the Consultant/Departmental Representative.
7. Whenever the structure or landscape interventions are to be changed beyond the details of the specifications provided, the interventions shall be approved by the Departmental Representative in advance of the work. The contractor shall identify the areas and level of expected intervention changes to the Departmental Representative in advance of any such work.

1.15 NATIONAL PARKS ACT

1. Because this project is located within the boundaries of a National Historic Site of Canada, the National Parks Act applies to this work. A copy of this Act may be obtained by contracting Parks Canada at the Sault Ste. Marie Canal National Historic Site of Canada.

1.16 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 the right to require dismissal from site of workers deemed incompetent or careless.

1.17 BUILDING SMOKING

1. No smoking is permitted in any of the buildings on site. Comply with smoking restrictions.

1.18 WARRANTY

1. Warranty the Work for a period of one year from date of Substantial Completion.

1.19 COMPLETION OF WORK

1. A final inspection of work to be completed including removal from site of all construction debris, scaffolding, materials and equipment, and the Contractor's labour force.
2. In the event that the Scope of Work under the Contract has been revised and the approved changes either increase or decrease the Work, the contractor shall inform the Departmental Representative as to any requested changes to the completion date of the Contract.

1.20 CERTIFICATES
& TRANSCRIPTS

1. Immediately after award of Contract, submit Workers Compensation Board status, transcription of insurances.

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|---------------------------|----|----------------|
| <u>PART 2 – PRODUCT</u> | 1. | Not Applicable |
| <u>PART 3 – EXECUTION</u> | 1. | Not Applicable |

PART 1 - GENERAL1.1 RELATED
SECTIONS

- | | | |
|----|-------------|---|
| .1 | 01 35 29.06 | Health and Safety Requirements |
| | 01 35 43 | Environmental Procedures |
| | 01 35 73 | Procedure for Deconstruction of Structures |
| | 01 74 21 | Construction Demolition Waste Management and Disposal |
| | 02 41 21 | Deconstruction of Structures |
| | 02 41 99 | Demolition for Minor Works |
| | 02 43 13.05 | Historical Structure Relocation |
| | 03 10 00 | Concrete Forming and Accessories |
| | 03 30 00.01 | Cast-in-Place Concrete |
| | 05 50 00 | Metal Fabrications |
| | 06 05 73 | Wood Treatment |
| | 06 15 00 | Wood Decking |
| | 09 03 61 | Historic – Repainting Exterior Surfaces |
| | 31 00 99 | Earthwork for Minor Works |

1.2 WORK COVERED BY_
CONTRACT DOCUMENTS

- | | |
|----|--|
| .1 | Work of this Contract comprises repairs and renovations of the Sault Ste. Marie Emergency Swing Dam, located at Canal Drive; and further identified as Swing Dam. |
| .1 | Summary of Work |
| .1 | Remove existing building. |
| .2 | Remove existing decking and equipment. |
| .3 | Sandblast and paint existing structure above limits indicated on drawings. |
| .4 | Replace existing decking and railing. |
| .5 | Re-install existing building and equipment. |
| .6 | Construct support piers. |
| .7 | Repair cracks in center pivot track steel. |
| .8 | Cast and install new wicket chain stop blocks |
| .2 | Construct Work under lump sum contract. |
| .3 | Contractor to submit a detailed cost breakdown at time of tender submission. |
| .4 | Contractor to submit a detailed work schedule in Gannt Chart or equivalent format upon award. |
| .5 | Relations and responsibilities between Contractor and subcontractors and Parks Canada are as defined in Conditions of Contract. Assigned Subcontractors must, in addition: |

- .1 Furnish to Contractor, bonds covering faithful performance of subcontracted work and payment of obligations thereunder when Contractor is required to furnish such bonds to Consultant/Departmental Representative.
- .2 Purchase and maintain liability insurance to protect Contractor from claims for not less than limits of liability which Contractor is required to provide to Departmental Representative.
- 1.4 WORK BY OTHERS
- .1 Co-operate with other Sub-Contractors in carrying out their respective works and carry out instructions from Consultant/Departmental Representative.
- .2 Co-ordinate work with that of other Sub-Contractors. If any part of work under this Contract depends for its proper execution or result upon work of another Contractor, report promptly to Consultant/Departmental Representative, in writing, any defects which may interfere with proper execution of Work.
- .1 Work of this Project must include provisions for co-ordinating related work, identified in Contract Documents, for following principal items.
- .1 Sandblasting Existing Steel Structure.
- .2 Painting Existing Steel Structure.
- .3 Electrical
- 1.5 FUTURE WORK
- .1 Sandblasting Existing Steel Structure.
- .2 Painting Existing Steel Structure.
- 1.6 WORK SEQUENCE
during construction.
- .1 Co-ordinate Progress Schedule and co-ordinate with Parks Canada
- .2 Maintain fire access/control.
- 1.7 CONTRACTOR USE OF PREMISES
- .1 Unrestricted use of site until Substantial Performance.
- .2 Co-ordinate use of premises under direction of Consultant/Departmental Representative.
- .3 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.
- .4 Remove or alter existing work to prevent injury or damage to portions

of existing work which remain.

- .5 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by Consultant/Departmental Representative.
- .6 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

1.8 OWNER OCCUPANCY

- 1. Not Used.

1.9 PARTIAL OWNER OCCUPANCY

- .1 Schedule and substantially complete designated portions of Work for Parks Canada's control prior to Substantial Performance of entire Work.
- .1 Execute Certificate of Substantial Performance for each designated portion of Work prior to Parks Canada occupancy. Contractor shall allow:
 - .1 Access for Parks Canada personnel.
 - .2 Use of parking facilities.
 - .3 Operation of electrical systems.

1.10 PRE-BID WORK

- .1 Not Used.

1.11 PRE-PURCHASED EQUIPMENT

- .1 Not Used.

1.12 OWNER FURNISHED ITEMS

- .1 Contractor Responsibilities:
 - .1 Deliver supplier's bill of materials to Departmental Representatives for review and approval.
 - .2 Arrange and pay for delivery to site in accordance with Progress Schedule.
 - .3 Inspect deliveries jointly with Consultant/Departmental Representatives.
 - .4 Submit claims for transportation damage.
 - .5 Arrange for replacement of damaged, defective or missing items.
 - .6 Designate submittals and delivery date for each product in progress schedule.
 - .7 Review shop drawings, product data, samples, and other submittals. Submit to Departmental Representative notification of observed discrepancies or problems anticipated due to non-conformance with Contract

- Documents.
- .3 Receive and unload products at site.
- .4 Inspect deliveries jointly with Parks Canada/Consultant; record shortages, and damaged or defective items.
- .5 Handle products at site, including uncrating and storage.
- .6 Protect products from damage, and from exposure to elements.
- .7 Assemble, install, connect, adjust, and finish products.
- .8 Provide installation inspections required by public authorities.
- .9 Repair or replace items damaged by Contractor or subcontractor on site under his control.

- .3 Schedule of Parks Canada furnished items:
 - .1 All existing material currently installed.
 - .2 Wicket castings.

1.13 ALTERATIONS,
ADDITIONS OR
REPAIRS TO EXISTING
STRUCTURE

- .1 Execute work with least possible interference or disturbance to operations, public and normal use of premises. Arrange with Departmental Representative to facilitate execution of work.

1.14 EXISTING
SERVICES

- .1 Notify, Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, give Consultant/Departmental Representative 48 hours notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to pedestrian, vehicular traffic and tenant operations.
- .3 Provide alternative routes for pedestrian and vehicular traffic.
- .4 Establish location and extent of service lines in area of work before starting Work. 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 including power and communications services. Adhere to approved schedule and provide notice to affected parties.
- .6 Provide adequate bridging over trenches which cross sidewalks or

roads to permit normal traffic.

- .7 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .8 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.
- .9 Record locations of maintained, re-routed and abandoned service lines.
- .10 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

1.15 DOCUMENTS_
REQUIRED

- .1 Maintain at job site, one copy each document as follows:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Reviewed Shop Drawings.
 - .5 List of Outstanding Shop Drawings.
 - .6 Change Orders.
 - .7 Other Modifications to Contract.
 - .8 Field Test Reports.
 - .9 Copy of Approved Work Schedule.
 - .10 Health and Safety Plan and Other Safety Related Documents.
 - .11 Other documents as specified.

PART 2 - PRODUCTS

- 2.1 NOT USED .1 Not used.

PART 3 - EXECUTION

- 3.1 NOT USED .1 Not used.

PART 1 - GENERAL

| | | |
|---|----|--|
| <u>1.1 RELATED SECTIONS</u> | .1 | 01 35 29.06 Health and Safety Requirements 01 35 43 Environmental Procedures 01 35 75 Procedures for Deconstruction of Structures 02 41 99 Demolition for Minor Works 02 43 13.05 Historic – Structure Relocation 03 10 00 Concrete Forming and Accessories 03 30 00.01 Cast-in-Place Concrete 05 50 00 Metal Fabrications 06 05 73 Wood Treatment 06 15 00 Wood Decking 09 03 61 Historic – Repainting Exterior Surfaces 31 00 99 Earthworks for Minor Works |
| <u>1.2 ACCESS AND EGRESS</u> | .1 | Design, construct and maintain temporary "access to" and "egress from" work areas, including stairs, runways, ramps or ladders and scaffolding, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations. |
| <u>1.3 USE OF SITE AND FACILITIES</u> | .1 | Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Consultant/Departmental Representative to facilitate work as stated. |
| | .2 | Where security is reduced by work provide temporary means to maintain security. |
| <u>1.4 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING</u> | .1 | Not Used. |
| <u>1.5 EXISTING SERVICES</u> | .1 | Notify, Consultant/Departmental Representative and utility companies of intended interruption of services and obtain required permission. |
| | .2 | Where Work involves breaking into or connecting to existing services, give Consultant/Departmental Representative 48 hours of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions |

| | | |
|---|----|---|
| | | minimum. Carry out interruptions after normal working hours occupants, preferably on weekends. |
| | .3 | Provide for pedestrian and vehicular traffic. |
| | .4 | Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures. |
| <u>1.6 SPECIAL REQUIREMENTS</u> | .1 | Not Used. |
| <u>1.7 SECURITY CLEARANCES</u> | .1 | Personnel employed on this project may be subject to security check. Obtain clearance, as instructed, for each individual who will require to enter premises. |
| <u>1.8 SECURITY ESCORT</u> | .1 | Not Used. |
| <u>1.9 BUILDING SMOKING ENVIRONMENT</u> | .1 | Comply with smoking restrictions. Smoking is not allowed within public buildings. |
| <u>PART 2 - PRODUCTS</u> | | |
| <u>2.1 NOT USED</u> | .1 | Not Used. |
| <u>PART 3 - EXECUTION</u> | | |
| <u>3.1 NOT USED</u> | .1 | Not Used. |

PART 1 – GENERAL

| | | | |
|--|----------------|-------------------------------------|--|
| <u>1.1 RELATED SECTIONS</u> | .1 .2 .3 | 03 30 00.01 09 03 61 31 00 99 | Cast-in-Place Concrete Historic – Repainting Exterior Surfaces Earthwork for Minor Works |
| <u>1.2 RELATED REQUIREMENTS SPECIFIED ELSEWHERE</u> | .1 | | Particular requirements for inspection and testing to be carried out by testing laboratory designated by Consultant/Departmental Representative are specified under various sections. |
| <u>1.3 APPOINTMENT AND PAYMENT</u> | .1 | | Consultant/Departmental Representative will appoint and pay for services of testing laboratory except follows: <ul style="list-style-type: none"> .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities. .2 Inspection and testing performed exclusively for Contractor's convenience. .3 Testing, adjustment and balancing of conveying systems, mechanical and electrical equipment and systems. .4 Mill tests and certificates of compliance. .5 Tests specified to be carried out by Contractor under the supervision of Consultant/Departmental Representative. .6 Additional tests specified as follows: <p>.2 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 Consultant/Departmental Representative to verify acceptability of corrected work.</p> |
| <u>1.4 CONTRACTOR'S/DESIGN -BUILDER'S RESPONSIBILITIES</u> | .1 | | Provide labour, equipment and facilities to: <ul style="list-style-type: none"> .1 Provide access to Work for inspection and testing. .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. <p>.2 Notify Consultant/Departmental Representative sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.</p> <p>.3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.</p> <p>Pay costs for uncovering and making good Work that is covered</p> |

before required inspection or testing is completed and approved by
Consultant/Departmental Representative.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

PART 1 – GENERAL

1.1 SECTION INCLUDES

- .1 Project managing and coordination
- .2 Construction progress documentation
- .3 Submittal procedures
- .4 Waste management
- .5 Fire Safety
- .6 Regulatory requirements
- .7 Quality Control

1.2 RELATED SECTIONS

- .1 01 11 00 Summary of Work
01 35 29.06 Health and Safety Requirements
01 35 43 Environmental Procedures
- .2 This section describes requirements applicable to all Sections within Divisions 02 to 31.

1.3 COORDINATION

- .1 Perform coordination of progress schedules, submittals, use of site, temporary utilities, construction facilities, and construction Work, with progress of Work of others.

1.4 PRE-CONSTRUCTION_ MEETING

- .1 Schedule and administer health and Safety meeting with Consultant/Departmental Representative before starting Work.

1.5 PROJECT MEETINGS

- .1 Schedule and administer pre-installation meetings when specified in sections and when required to coordinate related or affected Work.
- .2 Prepare agenda for meetings and distribute written notice of each meeting in advance of meeting date to Consultant and Departmental Representative.
- .4 Provide office trailer heated/cooled to 22 degrees C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table.

1.6 CONSTRUCTION ORGANIZATION_ AND START-UP

- .1 Within seven (10) days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.

-
- .2 Establish time and location of meeting and notify parties concerned a minimum three (3) days before meeting.

 - .3 Agenda to include following:
 - .1 Appointment of official representative of participants in Work.
 - .2 Schedule of Work and progress scheduling.
 - .3 Schedule of submission of shop drawings, samples, colour chips.
 - .4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences.
 - .5 Delivery schedule of specified equipment.
 - .6 Site safety and security.
 - .7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements.
 - .8 Record drawings and a process for maintaining them current during the Work.
 - .9 Maintenance material and data.
 - .10 Take-over procedures, acceptance, and warranties.
 - .11 Monthly progress claims, administrative procedures, photographs, and holdbacks.
 - .12 Appointment of inspection and testing agencies or firms.
 - .13 Insurances and transcript of policies.

 - .4 During construction, coordinate use of site and facilities.

 - .5 Activate procedures for intra-project communications: Submittals, reports and records, schedules, coordination of drawings, recommendations, and resolution of ambiguities and conflicts.
- 1.7 SCHEDULES AND COST BREAKDOWN
- .1 Within 10 days of contract Award, submit two copies following items for review. When requested by the Department Representative revise and re-submit within 3 days. Do not make changes to reviewed schedule without Departmental Representative's review.

 - .2 Construction Progress Schedule
 - .1 Use Gantt-Chart (CPM) format
 - .2 Provide time scale
 - .3 Provide a separate bar for each major item of work, trade, or operation.

-
- .4 Show dates for submitting shop drawings, product data, samples, and mock ups. Include review time and re-submission time. Show last possible date for meeting fabrication/delivery of trusses.
 - .3 No progress payments will be made until construction progress schedule is approved.
 - .4 Consultant/Departmental Representative will review work progress based on approved construction progress schedule.
 - .5 With each application for progress payment for, submit for Consultant/Departmental Representative's review and comment annotations to Construction Progress Schedule. In these annotations, identify anticipated delays and other problems, quantify their anticipated effect on schedule, and plan alternatives to minimize effect of delays.
- 1.8 CONSTRUCTION PROGRESS MEETINGS
- .1 During course of work and two weeks prior to project completion, Departmental Representative schedule progress meetings bi-weekly.
 - .2 Departmental Representative notify affected parties minimum three days prior to meetings.
 - .3 Consultant records minutes of meetings and circulate to attending parties and affected parties not in attendance within three days after meeting.
 - .4 Agenda to include following:
 - .1 Review, approval of minutes of previous meeting.
 - .2 Review of Work progress since previous meeting.
 - .3 Field observations, problems, conflicts.
 - .4 Problems which impede construction schedule.
 - .5 Review of off-site fabrication delivery schedules.
 - .6 Corrective measures and procedures to regain projected schedule.
 - .7 Revision to construction schedule.
 - .8 Progress schedule, during succeeding work period.
 - .9 Review submittal schedules: expedite as required.
 - .10 Maintenance of quality standards.
 - .11 Review proposed changes for affect on construction schedule and on completion date.
 - .12 Review site safety and security issues.
 - .13 Other business.
- 1.9 SUBMITTALS
- .1 Submit preliminary shop drawings, product data and samples for review for compliance with Contract Documents; for field dimensions and clearances, for relation to available space,

and for relation to work of other contracts. After review, revise and resubmit for transmittal to Consultant/Departmental Representative.

.2 Submit requests for interpretation of Contract Documents, and obtain instructions through Consultant/Departmental Representative.

.3 Departmental Representative to review and approve:

.1 Requests for payment.

.2 Substitutions.

.3 Change orders.

.4 Closeout submittals.

.5 Preliminary inspections.

.4 Any proposed changes to the scope of work are to be discussed with the Departmental Representative but any resulting changes can only be authorized by an amendment issued by the Contracting Authority/Departmental Representative.

1.10 CLOSEOUT PROCEDURES

.1 Notify Consultant/Departmental Representative when Work is considered ready for Substantial Performance.

.1 Accompany Consultant/Departmental Representative on preliminary inspection to determine items listed for completion or correction.

.2 Comply with Consultant/Departmental Representative's instructions for correction of items of Work listed in executed certificate of Substantial Performance.

.3 Notify Consultant/Departmental Representative of instructions for completion of items of Work determined in Consultant/Departmental representative's final inspection.

1.11 CONSTRUCTION PROGRESS SCHEDULING

.1 Submit initial schedule in duplicate within fifteen (15) days, after date established in Notice to Proceed.

.2 Revise and resubmit as required.

1.12 CERTIFICATES AND TRANSCRIPTS

.1 Immediately after award of Contract, submit Workers' Compensation Board status.

1.13 FIRE SAFETY

.1 Do not light fires or burn rubbish on site

.2 Comply with Human Resources Development Canada (HRDC), Fire Commissioner of Canada (FCC) Standards. Those are listed in Section 01 35 29.06 – Health and Safety Requirements.

.3 Retain all fire safety documents and standards on site.

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- .4 Store flammable liquids in approved CSA containers inspected by Fire Prevention Unit. Use no open flame unless authorized by the Fire Prevention Unit.
- 1.14 STORAGE, HANDLING AND PROTECTION
- .1 Store, materials to be reused, recycled and salvaged in locations as directed by Consultant/Departmental Representative.
- .2 Protect, stockpile, store salvaged items.
- .3 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.
- .4 Protect surface drainage, storm sewers, sanitary sewers, and utility services from damage or blockage.
- .5 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.
- 1.15 USE OF SITE AND FACILITIES
- .1 Execute work with least possible interference or disturbance to normal use of premises.
- .2 Provide temporary security measures as directed by Consultant/Departmental Representative.
- 1.16 DISPOSAL OF WASTE
- .1 Burying rubbish and waste materials is prohibited.
- .2 Disposal of waste, volatile materials, mineral spirits, oil, paint thinner, into waterways, storm, sanitary sewers, or on site is prohibited.
- 1.17 CLEANING
- .1 Daily Clean-Up
- .1 Clean up work area as work progresses. At end of day, and more often if so ordered by Consultant/Departmental Representative, remove debris from site, neatly stack material for use, and clean up generally. Permit no undue amounts of debris, trash or garbage to accumulate.
- .2 Neither bury nor burn rubbish and waste materials on site.
- .2 Final Clean-Up
- .1 At completion of work remove all scaffolding, temporary protection and surplus materials, tools and plant. Collect and dispose of all rubbish and debris in an approved manner off of Parks Canada property.

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- .2 Clean areas under contract to a condition at least equal to that previously existing and to the approval of the Consultant/ Department Representative.
- .3 Source separate materials to be reused/recycled into specified sort areas.
- 1.18 LAWS, NOTICES, PERMITS AND FEES
- .1 The Contractor shall be responsible for permits, licenses or certificates necessary for the performance of the Work which were legally in force at the date of executing the Agreement.
- .2 Give the required notices and comply with the laws, ordinances, rules, regulations or codes which are or become in force during the performance of the Work and which relate to the Work.
- .3 To knowingly perform or allow work to be performed, that is contrary to laws, ordinances, rules, regulations or codes, the Contractor shall be responsible for and shall correct the violations, and shall bear the costs, expenses and damages attributable to the failure to do so.
- .4 Pay construction damage deposits levied in connection with the issuance of a building permit.
- 1.19 PERSONNEL SMOKING
- .1 Comply with regulatory and Department imposed tobacco smoking restrictions during execution of the Work.
- 1.20 INSPECTION BY AUTHORITY
- .1 Allow Authorities Having Jurisdiction access to Work.
- .2 Give timely notice requesting inspection, whenever portions of the Work are designated for tests, inspections or approvals, when described in the Contract Documents or when required by law at the Place of the Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- 1.21 REVIEW BY CONSULTANT/ DEPARTMENTAL REPRESENTATIVE
- .1 Consultant/Departmental Representative may order any part of the Work to be reviewed, if Work is suspected to be not in accordance with Contract Documents.
- .2 If, upon review such work is found not in accordance with Contract Documents, correct such Work and pay cost of additional review and correction.

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- .3 If such Work is found in accordance with Contract Documents, Department will pay cost of review and replacement.
- 1.22 INDEPENDENT_ INSPECTION AGENCIES
- .1 Independent inspection and testing agencies may be engaged by Consultant/Departmental Representative for purpose of inspecting and testing portions of Work.
- .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of inspection and testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and testing to ascertain full degree of defect. Correct defect and irregularities as advised by Consultant/Departmental Representative at no cost to Department. Pay costs for retesting and re-inspection.
- 1.23 ACCESS TO WORK
- .1 Allow inspection and testing agencies access to Work, off-site manufacturing and fabrication plants.
- .2 Cooperate to provide reasonable facilities for such access.
- 1.24 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 Consultant/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 Consultant/Departmental Representative, it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Department may deduct from Contract Price, the difference in value between Work performed and that required by the Contract Documents, amount of which shall be determined by Consultant/Departmental Representative.
- .4 Submit four (4) copies of inspection and test reports to Consultant/Departmental Representative and others affected.

PART 1 - GENERAL

- | | | |
|--|----|---|
| <u>1.1 RELATED_</u> <u>REQUIREMENTS</u> | .1 | 01 35 29.06 Health and Safety Requirements 01 35 43 Environmental Procedures 01 35 73 Procedures for Deconstruction of Structures 02 41 99 Demolition of Minor Works 02 43 13.05 Historic – Structure Relocation 05 50 00 Metal Fabrications 06 15 00 Decking 09 03 61 Historic – Repainting Exterior Surfaces |
| <u>1.2 REFERENCES</u> | .1 | Not Used. |
| <u>1.3 ADMINISTRATIVE</u> | .1 | Submit to Consultant/Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed. |
| | .2 | Do not proceed with Work affected by submittal until review is complete. |
| | .3 | Present shop drawings, product data, samples and mock-ups in SI Metric units. |
| | .4 | Where items or information is not produced in SI Metric units converted values are acceptable. |
| | .5 | Review submittals prior to submission to Consultant/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 considered rejected. |
| | .6 | Notify Consultant/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 co-ordinated. |
| | .8 | Contractor's responsibility for errors and omissions in submission is not relieved by Consultant/Departmental Representative's review of submittals. |

1.4 SHOP DRAWINGS
AND PRODUCT DATA

- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant/Departmental Representative review.
- .10 Keep one reviewed copy of each submission on site.
- .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 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Canada.
- .3 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 co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .4 Allow 7 days for Consultant/Departmental Representative's review of each submission.
- .5 Adjustments made on shop drawings by Consultant/Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant/Departmental Representative prior to proceeding with Work.
- .6 Make changes in shop drawings as Consultant/Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Consultant/Departmental Representative in writing of revisions other than those requested.
- .7 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.
- .8 Submissions include:
- .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.

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- .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.
 - .9 After Consultant/Departmental Representative's review, distribute copies.
 - .10 Submit 6 prints of shop drawings for each requirement requested in specification Sections and as Consultant/Departmental Representative may reasonably request.
 - .11 Submit 6 copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Consultant/Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
 - .12 Submit 6 copies of test reports for requirements requested in specification Sections and as requested by Consultant/Departmental Representative.
 - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within [3] years of date of contract award for project.
 - .13 Submit 6 copies of certificates for requirements requested in specification Sections and as requested by Consultant/Departmental Representative.
 - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
 - .2 Certificates must be dated after award of project

contract complete with project name.

- .14 Submit 6 copies of manufacturers instructions for requirements requested in specification Sections and as requested by Consultant/Departmental Representative.
 - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .15 Submit 6 copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Consultant/Departmental Representative.
- .16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .17 Submit 6 copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Consultant/Departmental Representative.
- .18 Delete information not applicable to project.
- .19 Supplement standard information to provide details applicable to project.
- .20 If upon review by Consultant/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.

1.5 SAMPLES

- .1 Submit for review samples in triplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Departmental Representative's business address or site office.
- .3 Notify Consultant/Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Adjustments made on samples by Consultant/Departmental

Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant/Departmental Representative prior to proceeding with Work.

.6 Make changes in samples which Consultant/Departmental Representative may require, consistent with Contract Documents.

.7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.6 MOCK-UPS

.1 Erect mock-ups as requested by Consultant/Departmental Representative.

1.7 PHOTOGRAPHIC DOCUMENTATION

.1 Submit electronic and hard copy of colour digital photography in jpg format, standard resolution monthly with progress statement and as directed by Consultant/Departmental Representative.

.2 Project identification: name and number of project and date of exposure indicated.

.3 Number of viewpoints: 2 locations.

.1 Viewpoints and their location as determined by Consultant/Departmental Representative.

.4 Frequency of photographic documentation: daily.

.1 Upon completion of: excavation, foundation, framing and services before concealment, and as directed by Consultant/Departmental Representative.

1.8 CERTIFICATES AND TRANSCRIPTS

.1 Immediately after award of Contract, submit Workers' Compensation Board status.

PART 2 - PRODUCTS

2.1 NOT USED

1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

.1 Not Used.

PART 1 - GENERAL

- 1.1 SECTION INCLUDES
- .1 Health and safety considerations required to ensure that Parks Canada shows due diligence towards health and safety on construction sites, and meets the requirements laid out in PWGSC/RPB Departmental Policy DP 073 - Occupational Health and Safety - Construction.
- 1.2 RELATED SECTIONS
- .1
- 01 35 43 Environmental Procedures
 - 01 35 73 Procedures for Deconstruction of Structures
 - 01 74 21 Construction/Demolition Waste Management and Disposal
 - 02 41 99 Demolition of Minor Works
 - 02 43 13.05 Historic – Structure Relocation
 - 03 10 00 Concrete Forming and Accessories
 - 03 30 00.01 Cast-in-Place Concrete
 - 05 50 00 Metal Fabrications
 - 06 05 73 Wood Treatment
 - 06 15 00 Wood Decking
 - 09 03 61 Historic – Repainting Exterior Surfaces
 - 31 00 99 Earthwork for Minor Works
- 1.3 REFERENCES
- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
- .1 Material Safety Data Sheets (MSDS).
- .3 Province of Ontario
- .1 Occupational Health and Safety Act, R.S.O. Latest Edition.
- 1.4 SUBMITTALS
- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
- .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
- .3 Submit 3 copies of Contractor's authorized representative's worksite health and safety inspection reports to Consultant/Departmental Representative daily.

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- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports.
- .6 Submit WHMIS MSDS - Material Safety Data Sheets.
- .7 Consultant/Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 3 days after receipt of plan. Revise plan as appropriate and resubmit plan to Consultant/Departmental Representative within 5 days after receipt of comments from Consultant/Departmental Representative.
- .8 Consultant/Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .9 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 Consultant/Departmental Representative.
- .10 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.
- 1.5 FILING OF NOTICE
- .1 File Notice of Project with Provincial authorities prior to beginning of Work.
- 1.6 SAFETY ASSESSMENT
- .1 Perform site specific safety hazard assessment related to project.
- 1.7 MEETINGS
- .1 Schedule and administer Health and Safety meeting with Consultant/Departmental Representative prior to commencement of Work.
- 1.8 REGULATORY REQUIREMENTS
- .1 Do Work in accordance with Section 01 41 00 - Regulatory Requirements.
- 1.9 PROJECT/SITE CONDITIONS
- .1 Work at site will involve contact with:

- .2 Have existing paint tested for hazardous materials i.e. potential based lead paint, through testing of spent blast medium.

1.10 GENERALREQUIREMENTS

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Consultant/Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.11 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.12 COMPLIANCE_
REQUIREMENTS

- .1 Comply with Ontario Health and Safety Act, R.S.O.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

1.13 UNFORSEEN_
HAZARDS

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Consultant/Departmental Representative verbally and in writing.

1.14 HEALTH AND_
SAFETY CO-ORDINATOR

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:
 - .1 Have site-related working experience specific to activities.
 - .2 Have working knowledge of occupational safety and health regulations.
 - .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
 - .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

.5 Be on site during execution of Work and report directly to and be under direction of site supervisor.

1.15 POSTING OF DOCUMENTS

.1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Consultant/Departmental Representative.

1.16 CORRECTION OF NON-COMPLIANCE

.1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Consultant/Departmental Representative.

.2 Provide Consultant/Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Consultant/Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.

1.17 BLASTING

.1 Not Used.

1.18 POWDER ACTUATED DEVICES

.1 Use powder actuated devices only after receipt of written permission from Consultant/Departmental Representative.

1.19 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.

PART 2 - PRODUCTS

2.1 NOT USED

.1 Not used.

PART 3 - EXECUTION

3.1 NOT USED

.1 Not used.

PART 1 - GENERAL

- 1.1 FIRE DEPARTMENT_
BRIEFING
- .1 Consultant/Departmental Representative will co-ordinate arrangements for contractor for briefing on Fire Safety at pre-work conference by Fire Chief before work is commenced.
- 1.2 REPORTING FIRES .1 Know location of nearest fire alarm box and telephone, including emergency phone number.
- .2 Report immediately fire incidents to Fire Department as follows:
- .1 Activate nearest fire alarm box; or
- .2 Telephone.
- .3 Person activating fire alarm box will remain at box to direct Fire Department to scene of fire.
- .4 When reporting fire by telephone, give location of fire, name or number of building and be prepared to verify location.
- 1.3 INTERIOR AND
EXTERIOR FIRE
PROTECTION AND_
ALARM SYSTEMS
- .1 Fire protection and alarm system will not be:
- .1 Obstructed;
- .2 Shut-off; and
- .3 Left inactive at end of working day or shift without authorization from Fire Chief.
- .2 Fire hydrants, standpipes and hose systems will not be used for other than fire-fighting purposes unless authorized by Fire Chief.
- 1.4 FIRE
EXTINGUISHERS
- .1 Supply fire extinguishers, as scaled by Fire Chief, necessary to protect work in progress and contractor's physical plant on site.
- 1.5 INSTALLATION
AND/OR REPAIR OF
ROOF TO INCLUDE
CONTRACTORS
PHYSICAL PLANT AT_
SITE
- .1 Not Used

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- 1.6 BLOCKAGE OF ROADWAYS
- .1 Advise Fire Chief of work that would impede fire apparatus response. This includes violation of minimum overhead clearance, as prescribed by Fire Chief, erecting of barricades and digging of trenches.
- 1.7 SMOKING PRECAUTIONS
- .1 Observe smoking regulations.
- 1.8 RUBBISH AND WASTE MATERIALS
- .1 Keep rubbish and waste materials at minimum quantities.
- .2 Burning of rubbish is prohibited.
- .3 Removal:
- .1 Remove rubbish from work site at end of work day directed.
- .4 Storage:
- .1 Store oily waste in approved receptacles to ensure maximum cleanliness and safety.
- .2 Deposit greasy or oily rags and materials subject to spontaneous combustion in approved receptacles and remove specified.
- 1.9 FLAMMABLE AND COMBUSTIBLE LIQUIDS
- .1 Handling, storage and use of flammable and combustible liquids governed by current National Fire Code of Canada.
- .2 Keep flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use in quantities not exceeding 45 litres provided they are stored in approved safety cans bearing Underwriters' Laboratory of Canada or Factory Mutual seal of approval. Storage of quantities of flammable and combustible liquids exceeding 45 litres for work purposes requires permission of Fire Chief.
- .3 Transfer of flammable and combustible liquids is prohibited within buildings or jetties.
- .4 Transfer of flammable and combustible liquids will not be carried out in vicinity of open flames or any type of heat-producing devices.
- .5 Do not use flammable liquids having flash point below 38 degrees C such as naphtha or gasoline as solvents or cleaning agents.
- .6 Store flammable and combustible waste liquids, for disposal, in approved containers located in safe ventilated area. Keep quantities

minimum and Fire Department is to be notified when disposal is required.

1.10 HAZARDOUS SUBSTANCES

- .1 Work entailing use of toxic or hazardous materials, chemicals and/or explosives, or otherwise creating hazard to life, safety or health, in accordance with National Fire Code of Canada.
- .2 Obtain or provide a "Hot Work" permit for work involving welding, burning or use of blowtorches and salamanders, subject to approval by Consultant/Departmental Representative.
- .3 When Work is carried out in dangerous or hazardous areas involving use of heat, provide fire watchers equipped with sufficient fire extinguishers. Determination of dangerous or hazardous areas along with level of protection necessary for Fire Watch is at discretion of Fire Chief. Contractors are responsible for providing fire watch service for work on scale established and in conjunction with Fire Chief at pre-work conference.
- .4 Provide ventilation where flammable liquids, such as lacquers or urethanes are used, eliminate sources of ignition. Inform Fire Chief prior to and at cessation of such work.

1.11 QUESTIONS AND/OR CLARIFICATION

- .1 Direct questions or clarification on Fire Safety in addition to above requirements to Fire Chief.

1.12 FIRE INSPECTION

- .1 Co-ordinate site inspections by Fire Chief through Consultant/Departmental Representative.
- .2 Allow Fire Chief unrestricted access to work site.
- .3 Co-operate with Fire Chief during routine fire safety inspection of work site.
- .4 Immediately remedy unsafe fire situations observed by Fire Chief.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- .1 Site fires.
- .2 Disposal of wastes.
- .3 Drainage.
- .4 Site cleaning and plant protection.
- .5 Work adjacent to waterways.
- .6 Pollution control.

1.2 RELATED SECTIONS

Covers All Sections

1.3 DESCRIPTION

- .1 This section describes requirements for the protection of the environment that apply to the work. These requirements apply to all sections of this specification, without limiting the conditions and approvals imposed by statute.

1.4 COMPLIANCE REQUIREMENTS

- .1 Execute work to meet or exceed environmental conditions/protection measures set out in the Screening Level Environmental Assessment prepared under the *Canadian Environmental Assessment Act* (CEAA) by the Consultant/ Departmental Representative.

1.5 DEFINITIONS

- .1 Barrier: means fence consisting of approved material, supported by steel posts and being a minimum of 1.2 m high, without breaks or unsupported sections.
- .2 Deleterious Material: any substance that, if added to a waterbody, could degrade water quality or impact fish, fish habitat and aquatic wildlife. This includes, but is not limited to:
 - .1 Concrete dust.
 - .2 Soils (clay, silt, sand).
 - .3 Oil, diesel, or gasoline.
 - .4 Chipped or fresh concrete and admixtures.
 - .5 Alkali water resulting from concrete or cementitious grout.
 - .6 Salt.
 - .7 Solvents.
 - .8 Paint (wet and dry).
 - .9 Spent blast medium
- .3 Dripline: means the location on the ground surface directly beneath a theoretical line described by the tips of the outermost branches of the trees.
- .4 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect

human health and welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.

- .5 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.6 SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00.
- .2 Prior to commencing construction activities or delivery of materials to site, submit Environmental Protection Plan for review and approval by Consultant/Departmental Representative. Environmental Protection Plan shall present a comprehensive overview of known or potential environmental issues which must be addressed during construction.
- .3 Address topics at level of detail, commensurate with environmental issue and required construction tasks.
- .4 Environmental protection plan shall include:
- .1 Names of persons responsible for ensuring adherence to Environmental Protection Plan.
 - .2 Names and qualifications of persons responsible for manifesting hazardous waste to be removed from site.
 - .3 Names and qualifications of persons responsible for training site personnel.
 - .4 Descriptions of environmental protection personnel training program.
 - .5 Erosion and sediment control plan which identifies type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.
 - .6 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use. Include in plan measures for marking limits of use areas including methods for protection of features to be preserved within authorized work areas.
 - .7 Spill Control Plan: including procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.

- .8 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
- .9 Air pollution control plan detailing provisions to assure that dust, debris, materials, spent blast medium and trash, do not become air borne and travel off project site.
- .10 Contaminant prevention plan that: identifies potentially hazardous substances to be used on job site; identifies intended actions to prevent introduction of such materials into air, water, or ground; and details provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.
- .11 Waste water management plan that identifies methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water.
- .12 Historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands.

1.7 WORK ADJACENT TO
WATERWAYS

- .1 Do not release any Deleterious Materials into a waterway.
- .2 Do not operate construction equipment in waterways.
- .3 Do not use dust control measures that are considered a Deleterious Material (e.g. Calcium Chloride) near waterway.
- .4 Do not use waterway beds for borrow material.
- .5 Do not dump excavated fill, waste material or debris in waterways.
- .6 Stockpiled excavated or fill materials must be stored and stabilized away from the water, minimum 30m. Runoff from excavated or fill material must be contained from entering the waterway.

1.8 MEASURES TO PROTECT
FISH AND FISH HABITAT WHEN
MAINTAINING CULVERTS

- .1 Use existing trails and roads to avoid disturbance to the riparian vegetation.
- .2 The removal of riparian vegetation should be kept to a minimum of should be kept to a minimum.
- .3 No in-water work.

- .4 Effective sediment and erosion control measures must be installed prior to the commencement of work to prevent sediment from entering the watercourse. Sediment, debris or erosion control measures must be inspected daily during the course of construction to ensure that they are functioning properly and are maintained and upgraded as required.
- .5 Operate machinery on land only and in a manner that minimizes disturbance to the banks of the watercourse.
- .6 Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.
- .7 Stabilize any waste materials removed from the work site to prevent them from entering the watercourse.
- .8 Vegetate any disturbed areas by planting and seeding preferably with native grasses and cover such areas with mulch to prevent erosion and to help seeds germinate. If there is insufficient time remaining in the growing season, the site should be stabilized (e.g., cover exposed areas with erosion control blankets to keep the soil in place and prevent erosion) and vegetated the following spring.
- .9 Maintain effective sediment and erosion control -vegetation of the disturbed areas is achieved.

1.9 TURBIDITY CONTROL,
AND DRAINAGE WATER

- .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 Control turbidity of all water released during the work. In the event of significant silting or debris caused by construction activities, contractor must take appropriate measures to confine work and install additional turbidity curtains.
- .5 Should water be encountered in excavations construct sedimentation basin, size and located by Consultant/Departmental Representative.
- .6 In the event of suspected contamination, advise Consultant/Departmental Representative immediately for direction. Mitigate spillage and other adverse spread of contamination upon discovery by Contractor.

1.10 SEDIMENT, DUST AND
EROSION PROTECTION

- .1 Before starting work that will create dust or debris, (such as sandblasting, wood protection sawing, excavation, backfilling, etc.), install effective mitigation techniques for sediment, dust, debris and erosion control to the satisfaction of the Consultant/Departmental Representative. Maintain these protective measures at all times, including shut down periods.
- .2 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.
- .3 Provide a 1 metre high silt fence barrier in all areas where, due to construction activities, silt or debris may enter the waterway.
- .4 Maintain a standby supply of pre-fabricated silt barrier, or an equivalent ready-to-install sediment control device.
- .5 Excavation to cease during periods of heavy rainfall, unless runoff is contained from entering waterway.
- .6 Sediment, debris and erosion control measures shall be left in place until all disturbed areas within the work area has been stabilized and any sediments in the water have settled. Removal will be permitted only after written approval from Consultant/Departmental Representative.

1.11 OPERATION AND
MAINTENANCE OF EQUIPMENT

- .1 Equipment and heavy machinery used shall meet or exceed all applicable emission requirements.
- .2 Machinery is to arrive on site in a clean condition and is to be maintained free of fluid leaks.
- .3 Provide drip trays to prevent the discharge of oil, grease, antifreeze, or any other materials into the ground.
- .4 Leave machinery running only while in actual use, except where extreme temperatures prohibit shutting machinery down.
- .5 Conduct all vehicle/equipment maintenance and refueling over impermeable/absorptive material situated at a designated site where all precautions have been made to prevent the discharge of oil, grease, antifreeze or any other materials into the ground. The contractor will be responsible for all costs of cleaning up any spills to the satisfaction of the Consultant/Departmental Representative.

1.12 SITE CLEARING
AND PLANT PROTECTION

- .1 Protect trees and plants on site.
- .2 Wrap in burlap, trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 metres.
- .3 Protect roots of trees to drip-line during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .4 Minimize stripping of topsoil and vegetation.

1.13 POLLUTION CONTROL
installed under this contract.

- .1 Maintain temporary erosion and pollution control features
- .2 Control emissions from equipment and plant to local authorities emission requirements.
- .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 Carry out dust control measures during construction so that dust generated from any operation does not become irritating to local residents or wildlife population.
- .6 Spills:
 - .1 Report all spills immediately to the Consultant/Departmental Representative and to the Ontario Spills Action Centre (Telephone No. 1-800-268-6060).
 - .2 Using appropriate safety precautions, collect liquid or solidify liquid with an inert, noncombustible material and remove for disposal.
 - .3 Be responsible for all costs of cleaning up any spills to the satisfaction of the Consultant/Departmental Representative.
 - .4 Must have an environmental emergency response plan in place and a spill kit ready.

1.14 FIRES

- .1 No open fires or burning of rubbish are permitted.

1.15 DISPOSAL OF WASTE

- .1 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- .2 Do not bury rubbish and waste materials on site.

PART 1 - GENERAL1.1 RELATED
SECTIONS

- | | | |
|----|-------------|---|
| .1 | 01 35 29.06 | Health and Safety Requirements |
| | 01 35 43 | Environmental Procedures |
| | 01 74 21 | Construction/Demolition Waste Management and Disposal |
| | 02 41 99 | Demolition for Minor Works |
| | 02 43 13.05 | Historic – Structure Relocation |
| | 05 50 00 | Metal Fabrications |
| | 06 15 00 | Decking |

1.2 REFERENCES

- | | |
|----|--|
| .1 | Federal Legislation |
| .1 | Canadian Environmental Protection Act, 1999, c. 33 (CEPA). |
| .2 | Canadian Environmental Assessment Act, 1992, c. 37 (CEAA). |
| .3 | Transportation of Dangerous Goods Act 1992, c. 34 (TDGA). |
| .4 | Motor Vehicle Safety Act 1993, c. 16 (MVSA). |

1.3 DEFINITIONS

- | | |
|----|---|
| .1 | Alternate Disposal: reuse and recycling of materials by designated facility, user or receiving organization which has valid Certificate of Approval to operate. Alternative to landfill disposal. |
| .2 | Deconstruction: systematic dismantling of structure to salvage materials for reuse. What cannot be reused is considered subsequently for recycling. Ultimate objective is to recover potentially valuable resources while diverting from landfill what has traditionally been significant portion of waste stream. |
| .3 | Demolition: rapid destruction of structure with or without prior removal of hazardous materials. |
| .4 | Disassembly: physical detachment of materials from structure and may include: prying, pulling, cutting, unscrewing. |
| .5 | Hauler: company (possessing appropriate and valid Certificate of Approval) contracted to transport waste, reusable or recyclable materials off site to designated facility, user or receiving organization. |
| .6 | Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities and hazardous products, may include but not limited to: poisons, corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or other material that can endanger human health or well being or environment if handled improperly. |

- .7 Processing: tasks which are subsequent to disassembly and may include: moving materials, denailing, cleaning, separating and stacking.
- .8 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.
- .9 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .10 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .11 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:
 - .1 Salvaging reusable materials from remodeling projects before the demolition stage, for resale, reuse on current project or for storage for use on future projects.
 - .2 Returning reusable items may include pallets and unused products to vendors.
- .12 Salvage: removal of structural and non-structural structure materials from industrial, commercial and institutional structure deconstruction/disassembly projects for purpose of reuse or recycling.
- .13 Source Separation: acts of keeping different types of waste materials separate beginning from first time they become waste.
- .14 Used Building Material Receipt: receipt issued at end destination for materials designated for alternate disposal.
- .15 Waste Audit (WA): detailed inventory of materials in building. Involves quantifying (by volume or weight) amounts of materials and wastes generated during deconstruction. Indicates quantities of reuse, recycling and landfill.
- .16 Waste Management Co-ordinator (WMC) : contractor representative responsible for supervising waste management activities as well as coordinating related, required submittal and reporting requirements.
- .17 Waste Reduction Workplan (WRW): written report which outlines actions to be taken to reduce, reuse and recycle materials during course of deconstruction. Actions based on finding of the Waste Audit (WA).

- .18 Weigh Bill: receipt received from recycling facility indicating weight and content of each load/bin of material.

1.4 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 The Contractor's Waste Management Co-Ordinator (WMC) is responsible for fulfillment of reporting requirements.
- .3 Prior to start of Work on site, submit detailed Waste Audit indicating descriptions of and anticipated quantities of materials to be reused, recycled and landfilled in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .4 Submit Waste Reduction Workplan indicating schedule of selective demolition, material descriptions and quantities to be salvaged, number and location of bins, anticipated frequency of tipping, and names and addresses of receiving organizations in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .5 Submit copies of certified weigh bills, bills of lading, used building material receipts, from authorized disposal sites and reuse and recycling facilities for material removed from site to Consultant/Departmental Representative at specified project milestones or upon request.
- .1 Written authorization from Consultant/Departmental is required to deviate from receiving organizations listed in Waste Reduction Workplan.
- .6 Workers, haulers and subcontractors must possess current, applicable permits to remove, handle and dispose of wastes categorized municipally as hazardous.
- .1 Provide proof of compliance within 24 hours upon receipt of written request of Consultant/Departmental Representative.

1.5 DECONSTRUCTION_ DRAWINGS

- .1 Submit for approval drawings, diagrams and details showing sequence of deconstruction work and materials designated for salvage to the Consultant/Departmental Representative.
- .2 Submit drawings stamped and signed by qualified professional Engineer registered or licensed in Province of Ontario, Canada.

1.6 QUALITY_ ASSURANCE

- .1 Qualifications: provide adequate workforce training through meetings and demonstrations. Have someone on site with deconstruction experience throughout project for consultation and supervision purposes.

- .2 Regulatory Requirements: ensure Work is performed in compliance with CEPA, CEAA, TDGA, MVSA, and applicable Provincial/Territorial regulations.

1.7 SITE CONDITIONS

- .1 Existing Conditions:
 - .1 Should materials resembling spray or trowel applied asbestos or other designated substance listed as hazardous be encountered in course of deconstruction, stop work, take preventative measures, and notify Consultant/Departmental Representative immediately. Do not proceed until written instructions have been received.
 - .2 Base structures to be deconstructed on their condition on date of contract award. Be responsible for provision of services required for deconstruction.
- .2 Storage:
 - .1 Store materials salvaged for reuse and recycling or designated for alternate disposal in locations as outlined in Waste Reduction Workplan.
 - .2 Maximum permitted duration of material storage on site determined in consultation with Consultant/Departmental Representative after project completion.

1.8 ENVIRONMENTAL PROTECTION

- .1 Ensure Work is done in accordance with Section 01 35 43 - Environmental Procedures.
- .2 Ensure deconstruction work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air noise pollution.
- .3 Fires and burning of waste or materials is not permitted on site.
- .4 Do not bury waste or materials on site.
- .5 Do not dispose of waste or volatile materials into watercourses, storm or sanitary sewers.
 - .1 Ensure proper disposal procedures in accordance with applicable Provincial/Territorial regulations.

- .6 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers, or onto adjacent properties in accordance with authorities having jurisdiction.
- .7 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with as directed by Consultant/Departmental Representative.
- .8 Protect trees, plants and foliage on site and adjacent properties where indicated.
- .9 Prevent extraneous materials from contaminating air beyond deconstruction area, by providing temporary enclosures during Work.
- .10 Cover or wet down dry materials and waste to prevent blowing dust and debris. Control dust on temporary roads.
- .11 Erect temporary fencing to protect salvaged materials from vandalism, theft, adverse weather, or inadvertent damage by heavy machinery.
- .12 Use natural lighting to do Work where possible.
 - .1 Shut off lighting except those required for security purposes at end of each day.
- .13 Organize site and workers in manner which promotes efficient flow of materials through disassembly, processing, stockpiling, and removal.

1.9 SCHEDULING

- .1 Employ necessary means to meet project time lines without compromising specified minimum rates of material diversion. In event of unforeseen delay notify Consultant/Departmental Representative in writing.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

- 3.1 SELECTIVE DEMOLITION
- .1 Reuse of Building Elements: this project has been designed to result in end of project rates for reuse of building elements as follows: Do not demolish building elements beyond what is indicated on drawings without approval by Consultant/Departmental Representative.
- .1 Building Structure and Shell: 100 percent.
- .2 Interior Non-Shell Elements: 100 percent, subject to electrical.
- 3.2 SITE VERIFICATION OF CONDITIONS
- .1 Employ necessary means to assess site conditions and structure to determine quantity and locations of hazardous materials.
- .2 Investigate site and structure to determine dismantling, processing and storage logistics required prior to beginning of Work.
- .3 Develop strategy for deconstruction to facilitate optimum salvage of reusable and recyclable materials.
- 3.3 PREPARATION
- .1 Obtain necessary permits and approvals.
- .1 Provide copies to Consultant/Departmental Representative within 24 hours of written request.
- .2 Post signs in visible locations and appropriate languages which indicate to workers, subcontractors, haulers, and public, location of processing, bin location and use e.g. "CLEAN WOOD ONLY".
- 3.4 STOCKPILING AND SELLING OF MATERIALS
- .1 Not Used.
- 3.5 REMOVAL FROM SITE
- .1 Transport material designated for alternate disposal using approved receiving organizations listed in Waste Reduction Workplan and in accordance with applicable regulations.
- .1 Written authorization from Consultant/Departmental Representative is required to deviate from receiving organizations listed in Waste Reduction Workplan.
- .2 Dispose of materials not designated for alternate disposal in accordance with applicable regulations.
- .1 Disposal facilities must be those approved of and listed in Waste Reduction Workplan.
- .2 Written authorization from Consultant/Departmental Representative is required to deviate from disposal facilities listed in Waste Reduction Workplan.

PART 1 - GENERAL

| | | | |
|---|----|---|---|
| <u>1.1 RELATED SECTIONS</u> | .1 | 01 29 00 01 29 83 01 35 29.06 01 35 35 01 35 43 01 52 00 01 56 00 01 74 21 | Payment Procedures Payment Procedures: Test Laboratory Services Health and Safety Requirements Fire Safety Requirements Environmental Procedures Construction Facilities Temporary Barriers and Enclosures Construction/Demolition Waste Management and Disposal |
| <u>1.2 REFERENCES AND CODES</u> | .1 | | Perform Work in accordance with National Building Code of Canada (NBC) including 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. |
| <u>1.3 HAZARDOUS MATERIAL DISCOVERY</u> | .1 | | Asbestos: demolition of spray or trowel-applied asbestos is hazardous to health. Stop work immediately when material resembling spray or trowel-applied asbestos is encountered during demolition work. Notify Consultant/Department Representative. |
| | .2 | | PCB: Polychlorinated Biphenyl: stop work immediately when material resembling Polychlorinated Biphenyl is encountered during demolition work. Notify Consultant/Department Representative. |
| | .3 | | Mould: stop work immediately when material resembling mould is encountered during demolition work. Notify Consultant/Department Representative. |
| <u>1.4 BUILDING SMOKING ENVIRONMENT</u> | .1 | | Comply with smoking restrictions and municipal by-laws. |
| <u>1.5 NATIONAL PARKS ACT</u> | .1 | | Perform Work in accordance with National Parks Act when projects are located within boundaries of National Park. |

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

PART 1 - GENERAL1.1 RELATED
SECTIONS

- | | | |
|----|-------------|---|
| .1 | 01 35 29.06 | Health and Safety Requirements |
| | 01 35 43 | Environmental Procedures |
| | 02 43 13.05 | Historic – Structure Relocation |
| | 03 30 00.01 | Cast-in-Place Concrete |
| | 05 50 00 | Metal Fabrications |
| | 06 05 73 | Wood Treatment |
| | 09 03 61 | Historic – Repainting Exterior Surfaces |
| | 31 00 99 | Earthwork for Minor Works. |

1.2 NOT USED

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|----|-----------|
| .1 | Not Used. |
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1.3 INSPECTION

- | | |
|----|---|
| .1 | Allow Consultant/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 and Consultant/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 | Consultant/Departmental Representative will order 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, Consultant/Departmental Representative shall pay cost of examination and replacement. |

1.4 INDEPENDENT
INSPECTION AGENCIES

- | | |
|----|---|
| .1 | Independent Inspection/Testing Agencies will be engaged by Department Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Consultant/ Department Representative. |
|----|---|

- .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 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 Consultant/Departmental Representative at no cost to Consultant/Departmental Representative. Pay costs for retesting and reinspection.

1.5 ACCESS TO WORK

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

1.6 PROCEDURES

- .1 Notify appropriate agency, Consultant/Departmental Representative advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.7 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 Consultant/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 Consultant/Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Parks Canada will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Consultant/Departmental Representative.

| | | |
|------------------------------------|----|--|
| <u>1.8 REPORTS</u> | .1 | Submit 4 copies of inspection and test reports to Consultant/Departmental Representative. |
| | .2 | Provide copies to subcontractor of work being inspected or tested. |
| <u>1.9 TESTS AND MIX_ DESIGNS</u> | .1 | Furnish test results and mix designs as requested. |
| | .2 | Cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work will be appraised by Consultant/Departmental Representative and may be authorized as recoverable. |
| <u>1.10 MOCK-UPS</u> | .1 | Prepare mock-ups for Work specifically requested in specifications. Include for Work of Sections required to provide mock-ups. |
| | .2 | Construct in locations acceptable to Consultant/Departmental Representative. |
| | .3 | Prepare mock-ups for Consultant/Departmental Representative review with reasonable promptness and in orderly sequence, to not cause delays in Work. |
| | .4 | Failure to prepare mock-ups in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed. |
| | .5 | If requested, Consultant/Departmental Representative will assist in preparing schedule fixing dates for preparation. |
| | .6 | Mock-ups may remain as part of Work. |
| <u>1.11 MILL TESTS</u> | .1 | Submit mill test certificates as requested. |
| <u>1.12 EQUIPMENT AND_ SYSTEMS</u> | .1 | Submit adjustment and balancing reports for mechanical, electrical and building equipment systems. |
| <u>PART 2 - PRODUCTS</u> | | |
| <u>2.1 NOT USED</u> | 1 | Not Used. |

PART 3 - EXECUTION

3.1 NOT USED _____ .1 Not Used.

PART 1 - GENERAL1.1 RELATED SECTIONS

- | | | |
|----|-------------|---|
| .1 | 01 35 29.06 | Health and Safety Requirements |
| | 01 35 43 | Environmental Procedures |
| | 01 52 00 | Construction Facilities |
| | 01 74 11 | Cleaning |
| | 01 74 21 | Construction/Demolition Waste Management and Disposal |

1.2 REFERENCES

- | | |
|----|-----------|
| .1 | Not Used. |
|----|-----------|

1.3 SUBMITTALS

- | | |
|----|--|
| .1 | Provide submittals in accordance with Section 01 33 00 - Submittal Procedures. |
|----|--|

1.4 INSTALLATION AND REMOVAL

- | | |
|----|--|
| .1 | Provide temporary utilities controls in order to execute work expeditiously. |
| .2 | Remove from site all such work after use. |

1.5 DEWATERING

- | | |
|----|--|
| .1 | Provide temporary drainage and pumping facilities to keep excavations and site free from standing water. |
|----|--|

1.6 WATER SUPPLY

- | | |
|----|--|
| .1 | Provide continuous supply of potable water for construction use. |
| .2 | Pay for utility charges at prevailing rates. |

1.7 TEMPORARY HEATING AND VENTILATION

- | | | | | | | | | | | | |
|----|--|----|------------------------------|----|--|----|--|----|---|----|---|
| .1 | Provide temporary heating required during construction period, including attendance, maintenance and fuel. | | | | | | | | | | |
| .2 | Construction heaters used inside building must be vented to outside or be non-flameless type. Solid fuel salamanders are not permitted. | | | | | | | | | | |
| .3 | Provide temporary heat and ventilation in enclosed areas as required to: <table border="0" style="margin-left: 20px;"> <tr> <td style="vertical-align: top;">.1</td> <td style="vertical-align: top;">Facilitate progress of Work.</td> </tr> <tr> <td style="vertical-align: top;">.2</td> <td style="vertical-align: top;">Protect Work and products against dampness and cold.</td> </tr> <tr> <td style="vertical-align: top;">.3</td> <td style="vertical-align: top;">Prevent moisture condensation on surfaces.</td> </tr> <tr> <td style="vertical-align: top;">.4</td> <td style="vertical-align: top;">Provide ambient temperatures and humidity levels for storage, installation and curing of materials.</td> </tr> <tr> <td style="vertical-align: top;">.5</td> <td style="vertical-align: top;">Provide adequate ventilation to meet health regulations for</td> </tr> </table> | .1 | Facilitate progress of Work. | .2 | Protect Work and products against dampness and cold. | .3 | Prevent moisture condensation on surfaces. | .4 | Provide ambient temperatures and humidity levels for storage, installation and curing of materials. | .5 | Provide adequate ventilation to meet health regulations for |
| .1 | Facilitate progress of Work. | | | | | | | | | | |
| .2 | Protect Work and products against dampness and cold. | | | | | | | | | | |
| .3 | Prevent moisture condensation on surfaces. | | | | | | | | | | |
| .4 | Provide ambient temperatures and humidity levels for storage, installation and curing of materials. | | | | | | | | | | |
| .5 | Provide adequate ventilation to meet health regulations for | | | | | | | | | | |

safe working environment.

- .4 Maintain temperatures of minimum 10 degrees C in areas where construction is in progress.
- .5 Ventilating:
 - .1 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.
 - .2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
 - .3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
 - .4 Ventilate storage spaces containing hazardous or volatile materials.
 - .5 Ventilate temporary sanitary facilities.
 - .6 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.
- .6 Maintain strict supervision of operation of temporary heating and ventilating equipment to:
 - .1 Conform with applicable codes and standards.
 - .2 Enforce safe practices.
 - .3 Prevent abuse of services.
 - .4 Prevent damage to finishes.
 - .5 Vent direct-fired combustion units to outside.
- .7 Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

1.8 TEMPORARY POWER_
AND LIGHT

- .1 Parks Canada will pay for temporary power during construction for temporary lighting and operating of power tools, to a maximum supply of 230 volts 30 amps.
- .2 Arrange for connection with appropriate utility company. Paycosts for installation, maintenance and removal.
- .3 Temporary power for electric cranes and other equipment requiring in excess of above is responsibility of Contractor.
- .4 Provide and maintain temporary lighting throughout project. Ensure level of illumination on all floors and stairs is not less than 162 lx.

1.9 TEMPORARY COMMUNICATION_ FACILITIES .1 Provide 24 hour telephone contact information necessary for own use and use of Consultant/Departmental Representative in case of emergency.

1.10 FIRE PROTECTION .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.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 TEMPORARY EROSION AND SEDIMENTATION_ CONTROL .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.

.2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.

.3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

PART 1 - GENERAL1.1 RELATED SECTIONS

- | | | |
|----|-------------|---|
| .1 | 01 35 29.06 | Health and Safety Requirements |
| | 01 35 43 | Environmental Procedures |
| | 01 35 73 | Procedures for Deconstruction of Structures |
| | 01 51 00 | Temporary Facilities |
| | 01 74 11 | Cleaning |
| | 01 74 21 | Construction/Demolition Waste Management and Disposal |
| | 02 41 99 | Demolition of Minor Works |
| | 06 15 00 | Wood Decking |
| | 09 03 61 | Historic – Repainting Exterior Surfaces |
| | 31 00 99 | Earthwork for Minor Works |

1.2 REFERENCES

- | | | |
|----|--|---|
| .1 | Canadian General Standards Board (CGSB) | |
| | .1 | CAN/CGSB 1.189-[00], Exterior Alkyd Primer for Wood. |
| | .2 | CGSB 1.59-[97], Alkyd Exterior Gloss Enamel. |
| .2 | Canadian Standards Association (CSA International) | |
| | .1 | CSA-A23.1/A23.2-[04], Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete. |
| | .2 | CSA-0121-[M1978(R2003)], Douglas Fir Plywood. |
| | .3 | CAN/CSA-S269.2-[M1987(R2003)], Access Scaffolding for Construction Purposes. |
| | .4 | CAN/CSA-Z321-[96(R2001)], Signs and Symbols for the Occupational Environment. |
| .3 | Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions 'C', In Effect as of: May 14, 2004. | |
| .4 | U.S. Environmental Protection Agency (EPA) / Office of Water | |
| | .1 | EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices. |

1.3 SUBMITTALS

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|----|--|
| .1 | Provide submittals in accordance with Section 01 33 00 - Submittal Procedures. |
|----|--|

1.4 INSTALLATION AND REMOVAL

- | | |
|----|---|
| .1 | Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation. |
|----|---|

| | | |
|---------------------------------|----|--|
| | .2 | Identify areas which have to be gravelled to prevent tracking of mud. |
| | .3 | Indicate use of supplemental or other staging area. |
| | .4 | Provide construction facilities in order to execute work expeditiously. |
| | .5 | Remove from site all such work after use. |
| <u>1.5 SCAFFOLDING</u> | .1 | Scaffolding in accordance with CAN/CSA-S269.2. |
| | .2 | Provide and maintain scaffolding, ramps, ladders, swing staging, platforms, temporary stairs, and all other access equipment |
| <u>1.6 HOISTING</u> | .1 | Provide, operate and maintain hoists required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for their use of hoists. |
| | .2 | Hoists to be operated by qualified operator. |
| <u>1.7 ELEVATORS</u> | .1 | Not Used. |
| <u>1.8 SITE STORAGE/LOADING</u> | .1 | Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products. |
| | .2 | Do not load or permit to load any part of Work with weight or force that will endanger Work. |
| <u>1.9 CONSTRUCTION PARKING</u> | .1 | Parking will be permitted on site provided it does not disrupt tourist/visitor access to the remaining grounds. |
| | .2 | Provide and maintain adequate access to project site. |
| <u>1.10 SECURITY</u> | .1 | Provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays. |
| <u>1.11 OFFICES</u> | .1 | Provide office trailer heated/cooled to 22 degrees C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table. |

1.12 EQUIPMENT,
TOOL AND MATERIALS
STORAGE

- .1 Provide and maintain, in 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 manner to cause least interference with work activities.

1.13 SANITARY_
FACILITIES

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.14 CONSTRUCTION_
SIGNAGE

- .1 No other signs or advertisements, other than warning signs, are permitted on site.
- .2 Provide project identification site sign comprising foundation, framing, and one 1200 x 2400 mm signboard as detailed and as described below.
 - .1 Foundations: As Reg. 12.
 - .2 Framework and battens: SPF, pressure treated minimum 89 x 89 mm.
 - .3 Signboard: 19 mm Medium Density Overlaid Douglas Fir Plywood to CSA O121.
 - .4 Paint: alkyd enamel to CAN/CGSB-1.59 over exterior alkyd primer to CAN/CGSB 1.189.
 - .5 Fasteners: hot-dip galvanized steel nails and carriage bolts.
 - .6 Vinyl sign face: printed project identification, self adhesive, vinyl film overlay, supplied by Consultant/Departmental Representative.
- .3 Locate project identification sign as directed by Consultant/Departmental Representative and construct as follows:
 - .1 Build concrete foundation, erect framework, and attach signboard to framing.
 - .2 Paint surfaces of signboard and framing with one coat primer and two coats enamel. Colour white on signboard face, black on other surfaces.
 - .3 Apply vinyl sign face overlay to painted signboard face in accordance with installation instruction supplied.
- .4 Direct requests for approval to erect Contractor signboard to Consultant/Departmental Representative. For consideration general appearance of Contractor signboard must conform to project identification site sign. Wording in both official languages.
- .5 Signs and notices for safety and instruction in both official languages Graphic symbols to CAN/CSA-Z321.

1.15 PROTECTION AND
MAINTENANCE OF
TRAFFIC

- .6 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Consultant/Departmental Representative.
- .1 Provide access and temporary relocated roads as necessary to maintain traffic.
- .2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Consultant/Departmental Representative.
- .3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs
- .4 Protect traveling public from damage to person and property.
- .5 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.
- .6 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.
- .7 Construct access and haul roads necessary.
- .8 Haul roads: constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided.
- .9 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .10 Dust control: adequate to ensure safe operation at all times.
- .11 Location, grade, width, and alignment of construction and hauling roads: subject to approval by Consultant/Departmental Representative.
- .12 Lighting: to assure full and clear visibility for full width of haul road and work areas during night work operations.
- .13 Provide snow removal during period of Work.
- .14 Remove, upon completion of work, haul roads designated by Consultant/Departmental Representative.

- 1.16 CLEAN-UP
- .1 Remove construction debris, waste materials, packaging material from work site daily.
 - .2 Clean dirt or mud tracked onto paved or surfaced roadways.
 - .3 Store materials resulting from demolition activities that are salvageable.
 - .4 Stack stored new or salvaged material not in construction facilities.

PART 2 - PRODUCTS

- 2.1 NOT USED
- .1 Not Used.

PART 3 - EXECUTION

- 3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL
- .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
 - .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
 - .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

PART 1 - GENERAL

| | | |
|---------------------------------------|----|--|
| <u>1.1 RELATED SECTIONS</u> | .1 | 01 35 29.06 Health and Safety Requirements 01 35 43 Environmental Procedures 01 35 73 Procedures for Deconstruction of Structures 02 41 99 Demolition for Minor Works 02 43 13.05 Historic – Structure Relocation 06 15 00 Wood Decking 09 03 61 Historic – Repainting for Minor Works 31 00 99 Earthwork for Minor Works |
| <u>1.2 REFERENCES</u> | .1 | Canadian General Standards Board (CGSB) .1 CGSB 1.59-97, Alkyd Exterior Gloss Enamel. .2 CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood. |
| | .2 | Canadian Standards Association (CSA International) .1 CSA-O121-M1978(R2003), Douglas Fir Plywood. |
| | .3 | Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions 'C', In Effect as Of: May 14, 2004. |
| <u>1.3 INSTALLATION AND REMOVAL</u> | .1 | Provide temporary controls in order to execute Work expeditiously. |
| | .2 | Remove from site all such work after use. |
| <u>1.4 HOARDING</u> | .1 | Not Used. |
| <u>1.5 GUARD RAILS AND BARRICADES</u> | .1 | Provide secure, rigid guard rails and barricades around project limits, all excavations, open shafts, open stair wells, open edges of floors and all other areas per OHSA. |
| | .2 | Provide as required by governing authorities. |
| <u>1.6 WEATHER ENCLOSURES</u> | .1 | Not Used. |

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| <u>1.7 DUST TIGHT SCREENS</u> | .1 | Not Used. |
| <u>1.8 ACCESS TO SITE</u> | .1 | Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work. |
| <u>1.9 PUBLIC TRAFFIC_ FLOW</u> | .1 | Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect public. |
| <u>1.10 FIRE ROUTES</u> | .1 | Maintain access to property including overhead clearances for use by emergency response vehicles. |
| <u>1.11 PROTECTION FOR OFF-SITE AND PUBLIC_ PROPERTY</u> | .1 | Protect surrounding private and public property from damage during performance of Work. |
| | .2 | Be responsible for damage incurred. |
| <u>1.12 PROTECTION OF_ BUILDING FINISHES</u> | .1 | Provide protection for finished and partially finished building finishes and equipment during performance of Work. |
| | .2 | Provide necessary screens, covers, and hoardings. |
| | .3 | Confirm with Department Representative locations and installations Schedule 3 days prior to installation. |
| | .4 | Be responsible for damage incurred due to lack of or improper protection. |
| <u>1.13 WASTE MANAGEMENT AND_ DISPOSAL</u> | .1 | Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal. |

PART 2 - PRODUCTS

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

3.1 NOT USED .1 Not Used.

PART 1 - GENERAL1.1 RELATED SECTIONS

- | | | |
|----|-------------|---|
| .1 | 03 10 00 | Concrete Forming and Accessories |
| | 03 30 00.01 | Cast-in-Place Concrete |
| | 05 50 00 | Metal Fabrications |
| | 06 05 73 | Wood Treatment |
| | 06 15 00 | Wood Decking |
| | 09 03 61 | Historic – Repainting Exterior Surfaces |

1.2 REFERENCES

- | | |
|----|--|
| .1 | Conform to these reference standards, in whole or in part as specifically requested in specifications. |
| .2 | If there is question as to whether products or systems are in conformance with applicable standards, Consultant/Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance. |
| .3 | Cost for such testing will be born by Consultant/Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance. |

1.3 QUALITY

- | | |
|----|---|
| .1 | Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided. |
| .2 | Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work. |
| .3 | 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. |
| .4 | Should disputes arise as to quality or fitness of products, decision rests strictly with Consultant/Departmental Representative based upon requirements of Contract Documents. |

.5 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.

.6 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.

1.4 AVAILABILITY

.1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for 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, the Consultant/Departmental Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.5 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.

.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 all other construction material 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 Consultant/Departmental Representative.

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- .9 Touch-up damaged factory finished surfaces to Consultant/Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.
- 1.6 TRANSPORTATION .1 Pay costs of transportation of products required in performance of Work.
- 1.7 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 will establish course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Consultant/Departmental Representative to require removal and re-installation at no increase in Contract Price or Contract Time.
- 1.8 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 Consultant/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 Consultant/Departmental Representative, whose decision is final.
- 1.9 CO-ORDINATION .1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.
- 1.10 CONCEALMENT .1 In finished areas conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.

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- .2 Before installation inform Consultant/Departmental Representative if there is interference. Install as directed by Consultant/Departmental Representative.
- 1.11 REMEDIAL WORK
- .1 Refer to Section 01 73 00 - Execution Requirements.
- .2 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.
- .3 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.
- 1.12 LOCATION OF FIXTURES
- .1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.
- .2 Inform Consultant/Departmental Representative of conflicting installation. Install as directed.
- 1.13 FASTENINGS
- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- .2 Prevent electrolytic action between dissimilar metals and materials.
- .3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.
- .4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
- .5 Keep exposed fastenings to a minimum, space evenly and install neatly.
- .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.
- 1.14 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.
- .4 Use plain type washers on equipment, sheet metal and soft gasket

lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.15 PROTECTION OF
WORK IN PROGRESS

- .1 Prevent overloading of parts of building. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of Departmental Representative.

1.16 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 pedestrian and vehicular traffic.
- .2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

PART 1 - GENERAL1.1 RELATED SECTIONS

- .1 All Sections.

1.2 SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit written request in advance of cutting or alteration which affects:
- .1 Structural integrity of elements of project.
 - .2 Integrity of weather-exposed or moisture-resistant elements.
 - .3 Efficiency, maintenance, or safety of operational elements.
 - .4 Visual qualities of sight-exposed elements.
 - .5 Work of Parks Canada or separate contractor.
- .3 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 Parks Canada or separate contractor.
 - .7 Written permission of affected separate contractor.
 - .8 Date and time work will be executed.

1.3 MATERIALS

- .1 Required for original installation.
- .2 Change in Materials: Submit request for substitution in accordance with Section 01 33 00 - Submittal Procedures.

1.4 PREPARATION

- .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- .2 After uncovering, inspect conditions affecting performance of Work.
- .3 Beginning of cutting or patching means acceptance of existing conditions.
- .4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.

- .5 Provide protection from elements for areas which are to be exposed by uncovering work; maintain excavations free of water.

1.5 EXECUTION

- .1 Execute cutting, fitting, and patching including excavation and fill, to complete Work.
- .2 Fit several parts together, to integrate with other Work.
- .3 Uncover Work to install ill-timed Work.
- .4 Remove and replace defective and non-conforming Work.
- .5 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- .6 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.
- .7 Restore work with new products in accordance with requirements of Contract Documents.

1.6 WASTE
MANAGEMENT AND_
DISPOSAL

- .1 Separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

PART 1 - GENERAL1.1 RELATED
SECTIONS

- .1 01 35 29.06 Health and Safety Requirements
01 35 43 Environmental Procedures
01 74 21 Construction/Demolition Waste Management and Disposal

1.2 REFERENCES

- .1 Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions "C", In Effect as Of: May 14, 2004.

1.3 PROJECT_
CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by other Contractors.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Consultant/Departmental Representative. Do not burn waste materials on site, unless approved by Consultant/Departmental Representative.
- .3 Clear snow and ice from access to structure, bank/pile snow in designated areas only.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Provide on-site containers for collection of waste materials and debris.
- .6 Provide and use marked separate bins for recycling. Refer to Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .7 Dispose of waste materials and debris off site.
- .8 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
- .9 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .10 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .11 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

- .12 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.4 FINAL CLEANING

- .1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4 Remove waste products and debris including that caused by Parks Canada or other Contractors.
- .5 Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant/Departmental Representative. Do not burn waste materials on site.
- .6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .7 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- .8 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .9 Remove dirt and other disfiguration from exterior surfaces.

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

PART 2 – PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

PART 1 - GENERAL

1.1 WASTE_
MANAGEMENT GOALS

- .1 Prior to start of Work conduct meeting with Consultant/Departmental Representative to review and discuss PWGSC's/Parks Canada Waste Management Plan and Goals.
- .2 Provide Consultant/Departmental Representative documentation certifying that waste management, recycling, reuse of recyclable and reusable materials have been extensively practiced.
- .3 Accomplish maximum control of solid construction waste.
- .4 Preserve environment and prevent pollution and environment damage.

1.2 RELATED
SECTIONS

- .1 01 35 26.06 Health and Safety Requirements
- 01 35 43 Environmental Procedures
- 01 35 73 Procedures for Deconstruction of Structures
- 01 51 00 Temporary Utilities
- 01 52 00 Construction Facilities
- 01 56 00 Temporary Barriers and Enclosures
- 01 61 00 Common Produce Requirements
- 01 74 11 Cleaning
- 03 10 00 Concrete Forming and Accessories
- 06 15 00 Wood Decking
- 09 03 61 Historic – Repainting Exterior Surfaces

1.3 REFERENCES

- .1 Not Used

1.4 DEFINITIONS

- .1 Class III: non-hazardous waste - construction renovation and demolition waste.
- .2 Inert Fill: inert waste - exclusively asphalt and concrete.
- .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.
- .5 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.

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| | .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. |
| | .7 | Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling. |
| | .8 | Separate Condition: refers to waste sorted into individual types. |
| | .9 | Source Separation: acts of keeping different types of waste materials separate beginning from first time they became waste. |
| | .10 | Waste Management Co-ordinator (WMC) : contractor representative responsible for supervising waste management activities as well as coordinating related, required submittal and reporting requirements. |
| <u>1.5 DOCUMENTS</u> | .1 | Maintain at job site, one copy of following documents: .1 Material Source Separation Plan. .2 List of hazardous materials. |
| <u>1.6 SUBMITTALS</u> | .1 | Submittals in accordance with Section 01 33 00 - Submittal Procedures. |
| | .2 | Prepare and submit following prior to project start-up: .1 Submit 2 copies of Materials Source Separation Program (MSSP) description. |
| <u>1.7 WASTE AUDIT (WA)</u> | .1 | Conduct a Waste Audit prior to project start-up. |
| | .2 | After sandblasting operations are underway test a representative sample of the spent blast medium for hazardous waste designation and concentrations. |
| <u>1.8 WASTE REDUCTION WORKPLAN (WRW)</u> | .1 | Not Used. |
| <u>1.9 DEMOLITION WASTE AUDIT (DWA)</u> | .1 | Not Used. |
| <u>1.10 COST/REVENUE ANALYSIS WORKPLAN (CRAW)</u> | .1 | Not Used. |
| <u>1.11 MATERIALS SOURCE SEPARATION</u> | .1 | Prepare MSSP and have ready for use prior to project start-up. |

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|--|--------|--|
| <u>PROGRAM (MSSP)</u> | .2 | Implement MSSP for waste generated on project in compliance with approved methods and as reviewed by Consultant/Departmental Representative. |
| | .3 | Provide on-site facilities for collection, handling, and storage of anticipated quantities of reusable and recyclable materials. |
| | .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. |
| | .8 | Collect, handle, store on-site, and transport off-site, salvaged materials in combined condition. |
| | .1 | Ship materials to site operating under Certificate of Approval. |
| | .2 | Materials must be immediately separated into required categories for reuse or recycling. |
| <u>1.12 WASTE PROCESSING SITES</u> | .1 | Provide Details to Consultant/Departmental Representative |
| <u>1.13 STORAGE, HANDLING AND PROTECTION</u> | .1 | Store, materials to be reused, recycled and salvaged in locations as directed by Consultant/Departmental Representative. |
| | .2 | Unless specified otherwise, materials for removal becomes Contractor's property. |
| | .3 | Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility. |
| | .4 | Protect structural components not removed for demolition from movement or damage. |
| | .5 | Support affected structures. If safety of Emergency Swing Dam is endangered, cease operations and immediately notify Consultant/Departmental Representative. |
| | .6 | Protect surface drainage, mechanical and electrical from damage and blockage. |

- .7 Separate and store materials produced during dismantling of structures in designated areas.
- .8 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.

1.14 DISPOSAL OF WASTES

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of waste 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.
 - .3 Total tonnage generated.
 - .4 Tonnage reused or recycled.
 - .5 Reused or recycled waste destination.
- .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.

1.15 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to normal use of premises.
- .2 Provide temporary security measures approved by Consultant/Departmental Representative.

1.16 SCHEDULING

- .1 Co-ordinate Work with other activities at site to ensure timely and orderly progress of Work.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

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| <u>3.1 SELECTIVE_</u> <u>DEMOLITION</u> | .1 | Not Used. |
| <u>3.2 APPLICATION</u> | .1 | Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes. |
| <u>3.3 CLEANING</u> | .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. |
| <u>3.4 DIVERSION OF_</u> <u>MATERIALS</u> | .1 | Separate materials from general waste stream and stockpile in separate piles or containers, as reviewed by Consultant/Departmental Representative, and consistent with applicable fire regulations. |
| | .1 | Mark containers or stockpile areas. |
| | .2 | Provide instruction on disposal practices. |
| <u>3.5 WASTE AUDIT (WA)</u> | .1 | Not Used |
| <u>3.6 WASTE REDUCTION</u> <u>WORKPLAN (WRW)</u> | .1 | Not Used. |
| <u>3.7 DEMOLITION WASTE</u> <u>AUDIT (DWA)</u> | .1 | Not Used. |
| <u>3.8 COST/REVENUE</u> <u>ANALYSIS WORKPLAN</u> <u>(CRAW)</u> | .1 | Schedule D – Not Used: |
| <u>3.9 CANADIAN</u> <u>GOVERNMENTAL</u> <u>DEPARTMENTS CHIEF</u> <u>RESPONSIBILITY FOR_</u> <u>THE ENVIRONMENT</u> | .1 | Schedule E - Government Chief Responsibility for the Environment: Ontario - Ministry of Environment and Energy 416-323-4621 416-323-4682 800-565-49 135 St. Clair Avenue West Toronto ON M4V 1P5 Environment Canada, Toronto Ontario 416-734-4494 |

PART 1 - GENERAL

| | | | |
|--|----|---|---|
| <u>1.1 RELATED REQUIREMENTS</u> | .1 | 01 33 00 01 35 29.06 01 35 43 01 45 00 01 74 11 01 74 21 01 78 00 | Submittal Procedures Health and Safety Requirements Environmental Procedures Quality Control Cleaning Construction/Demolition Waste Management and Disposal Closeout Submittals |
| <u>1.2 REFERENCES</u> | .1 | Not Used. | |
| <u>1.3 ADMINISTRATIVE REQUIREMENTS</u> | .1 | Acceptance of Work Procedures: | |
| | .1 | Contractor's Inspection: Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents. | |
| | .1 | Notify Consultant/Departmental Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made. | |
| | .2 | Request Consultant/Departmental Representative's inspection. | |
| | .2 | Consultant/Departmental Representative's Inspection: | |
| | .1 | Consultant/Departmental Representative and/or Consultant Contractor to inspect Work and identify defects and deficiencies. | |
| | .2 | Contractor to correct Work as directed. | |
| | .3 | Completion Tasks: submit written certificates in English that tasks have been performed as follows: | |
| | .1 | Work: completed and inspected for compliance with Contract Documents. | |
| | .2 | Defects: corrected and deficiencies completed. | |
| | .3 | Equipment and systems: tested, adjusted and balanced. | |
| | .4 | Operation of systems: demonstrated to Parks Canada's personnel. | |
| | .6 | Work: complete and ready for final inspection. | |
| | .4 | Final Inspection: | |
| | .1 | When completion tasks are done, request final inspection of Work by Consultant/Departmental Representative and Contractor. | |

- .2 When Work incomplete according to Consultant/Departmental Representative complete outstanding items and request re-inspection.

1.4 FINAL CLEANING

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Remove surplus materials, excess materials, rubbish, tools and equipment.
 - .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

PART 1 - GENERAL

- | | | | |
|--|----|-------------|---|
| <u>1.1 RELATED REQUIREMENTS</u> | .1 | 01 33 00 | Submittal Procedures. |
| | | 01 35 29.06 | Health and Safety Requirements |
| | | 01 35 43 | Environmental Procedures |
| | | 01 45 00 | Quality Control |
| | | 01 74 11 | Cleaning |
| | | 01 74 21 | Construction/Demolition Waste Management and Disposal |
| | | 01 77 00 | Closeout Procedures |
| <u>1.2 REFERENCES</u> | .1 | | Canadian Environmental Protection Act (CEPA) |
| <u>1.3 ADMINISTRATIVE REQUIREMENTS</u> | .1 | | Pre-warranty Meeting: |
| | .1 | | Convene meeting one (1) week prior to contract completion with contractor's representative and Consultant/Departmental Representative. |
| | .1 | | Verify Project requirements. |
| | .2 | | Review manufacturer's installation instructions and warranty requirements. |
| | .2 | | Consultant/Departmental Representative to establish communication procedures for: |
| | .1 | | Notifying construction warranty defects. |
| | .2 | | Determine priorities for type of defects. |
| | .3 | | Determine reasonable response time. |
| | .3 | | Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for construction warranty work action. |
| | .4 | | Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action. |
| <u>1.4 ACTION AND INFORMATIONAL SUBMITTALS</u> | .1 | | Provide submittals in accordance with Section 01 33 00 - Submittal Procedures. |
| | .2 | | Two weeks prior to Substantial Performance of the Work, submit to the Consultant/Departmental Representative, four (4) final copies of operating and maintenance manuals in English. |
| | .3 | | Provide spare parts, maintenance materials and special tools of same quality and manufacture as products provided in Work. |
| | .4 | | Provide evidence, if requested, for type, source and quality of products supplied. |

1.5 FORMAT

- .1 Organize data as instructional manual.
- .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
- .3 When multiple binders are used correlate data into related consistent groupings.
 - .1 Identify contents of each binder on spine.
- .4 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .5 Arrange content by systems, under Section numbers and sequence of Table of Contents.
- .6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .7 Text: manufacturer's printed data, or typewritten data.
- .8 Drawings: provide with reinforced punched binder tab.
 - .1 Bind in with text; fold larger drawings to size of text pages.
- .9 Provide 1:1 scaled CAD files in dwg format on CD.

1.6 CONTENTS -
PROJECT RECORD
DOCUMENTS

- .1 Table of Contents for Each Volume: provide title of project;
 - .1 Date of submission; names.
 - .2 Addresses, and telephone numbers of Consultant/Departmental Representative 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.
- .3 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.

-
- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- 1.7 AS -BUILT
DOCUMENTS AND_
SAMPLES
-
- .1 Maintain, in addition to requirements in General Conditions, at site for Consultant/Departmental Representative and Parks Canada one (1) record copy of:
- .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to Contract.
 - .5 Reviewed shop drawings, product data, and samples.
 - .6 Field test records.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction.
- .1 Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.
- .1 Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition.
- .1 Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by Consultant/Departmental Representative.
- 1.8 RECORDING
INFORMATION ON
PROJECT RECORD_
DOCUMENTS
-
- .1 Record information on set of [blue line opaque drawings, and in copy of Project Manual, provided by Consultant/Departmental Representative.
- .2 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress.
- .1 Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: mark each item to record actual construction, including:
- .1 Measured depths of elements of foundation in relation to finish first floor datum.
 - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

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- .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .4 Field changes of dimension and detail.
 - .5 Changes made by change orders.
 - .6 Details not on original Contract Drawings.
 - .7 References to related shop drawings and modifications.
- .5 Specifications: mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Addenda and change orders.
 - .6 Other Documents: maintain manufacturer's certifications, inspection certifications, and field test records, required by individual specifications sections.
 - .7 Provide digital photos, if requested, for site records.
- 1.9 FINAL SURVEY
- .1 Submit final certificate, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.
- 1.10 EQUIPMENT AND SYSTEMS
- .1 For each item of equipment and each system include description of unit or system, and component parts.
 - .1 Give function, normal operation characteristics and limiting conditions.
 - .2 Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
 - .2 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
 - .3 Provide servicing and lubrication schedule, and list of lubricants required.
 - .4 Include manufacturer's printed operation and maintenance instructions.
 - .5 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
 - .6 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

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| | .7 | Include test and balancing reports as specified in Section 01 45 00 - Quality Control |
| | .8 | Additional requirements: as specified in individual specification sections. |
| <u>1.11 MATERIALS AND FINISHES</u> | .1 | Building products, applied materials, and finishes: include product data, with catalogue number, size, composition, and colour and texture designations. |
| | .1 | Provide information for re-ordering custom manufactured products. |
| | .2 | Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance. |
| | .3 | Moisture-protection and weather-exposed products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance. |
| | .4 | Additional requirements: as specified in individual specifications sections. |
| <u>1.12 MAINTENANCE MATERIALS</u> | .1 | Not Used: |
| <u>1.13 DELIVERY, STORAGE AND HANDLING</u> | .1 | Not Used. |
| <u>1.14 WARRANTIES AND BONDS</u> | .1 | Develop warranty management plan to contain information relevant to Warranties. |
| | .2 | Submit warranty management plan, 30 days before planned pre-warranty conference, to Consultant/Departmental Representative approval. |
| | .3 | Warranty management plan to include required actions and documents to assure that Departmental Representative receives warranties to which it is entitled. |
| | .4 | Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel. |
| | .5 | Submit, warranty information made available during construction |

phase, to Departmental Representative for approval prior to each monthly pay estimate.

- .6 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:
 - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
 - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
 - .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.
 - .4 Verify that documents are in proper form, contain full information, and are notarized.
 - .5 Co-execute submittals when required.
 - .6 Retain warranties and bonds until time specified for submittal.
- .7 Except for items put into use with Parks Canada's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
- .8 Conduct joint 12 month warranty inspection, measured from time of acceptance, by Consultant/Departmental Representative.
- .9 Include information contained in warranty management plan as follows:
 - .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.
 - .2 Provide list for each warranted equipment, item, feature of construction or system indicating:
 - .1 Name of item.
 - .3 Model and serial numbers.
 - .4 Location where installed.
 - .5 Name and phone numbers of manufacturers or suppliers.
 - .6 Names, addresses and telephone numbers of sources of spare parts.
 - .7 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.
 - .8 Cross-reference to warranty certificates as applicable.
 - .9 Starting point and duration of warranty period.
 - .10 Summary of maintenance procedures required to continue warranty in force.

- .11 Cross-Reference to specific pertinent Operation and Maintenance manuals.
- .12 Organization, names and phone numbers of persons to call for warranty service.
- .13 Typical response time and repair time expected for various warranted equipment.
- .3 Contractor's plans for attendance at 12 month post-construction warranty inspections.
- .4 Procedure and status of tagging of equipment covered by extended warranties.
- .5 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.
- .10 Respond in timely manner to oral or written notification of required construction warranty repair work.
- .11 Written verification to follow oral instructions.
 - .1 Failure to respond will be cause for the Consultant/Departmental Representative to proceed with action against Contractor.
- 1.15 WARRANTY TAGS
 - .1 Tag, at time of installation, each warranted item. Provide durable, oil and water resistant tag approved by Consultant/Departmental Representative.
 - .2 Attach tags with copper wire and spray with waterproof silicone coating.
 - .3 Leave date of acceptance until project is accepted for occupancy.
 - .4 Indicate following information on tag:
 - .1 Type of product/material.
 - .2 Model number.
 - .3 Serial number.
 - .4 Contract number.
 - .5 Warranty period.
 - .6 Inspector's signature.
 - .7 Construction Contractor.

PART 2 - PRODUCTS

- 2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

PART 1 - GENERAL1.1 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CSA S350-M1980(R1998), Code of Practice for Safety in Demolition of Structures.
 - .2 National Building Code of Canada (NBC), Part 8 – Safety Measures at Construction and Demolition Sites.

1.2 SUBMITTALS

- .1 Submit shop drawings in accordance with Sections 01 33 00 - Submittal Procedures.
- .2 Before proceeding with demolition of decking and where required by authority having jurisdiction submit for review by Consultant/Departmental Representative shoring drawings prepared by qualified professional engineer registered or licensed in the Province of Ontario, showing proposed method.
- .3 Prior to beginning of Work on site submit detailed Waste Reduction Workplan in accordance with Sections 01 74 21 - Construction/Demolition Waste Management and Disposal and 01 00 50 - General Instructions and indicate:
 - .1 Descriptions of and anticipated quantities of materials to be salvaged reused, recycled and landfilled.
 - .2 Schedule of selective demolition.
 - .3 Number and location of dumpsters.
 - .4 Anticipated frequency of tipping.
 - .5 Name and address of haulers, waste facilities and waste receiving organizations.

1.3 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and 01 00 50 - General Instructions.

1.4 SITE CONDITIONS

- .1 Review "Designated Substance Report" and take precautions to protect environment.
- .2 Should material resembling spray or trowel-applied asbestos or other designated substance be encountered, stop work, take preventative measures, and notify Consultant/Departmental Representative immediately.
 - .1 Do not proceed until written instructions have been received from Consultant/Departmental Representative.
- .3 Notify Consultant/Departmental Representative before disrupting access or services.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not used.

PART 3 - EXECUTION

- 3.1 PREPARATION
- .1 Inspect site with Consultant/Departmental Representative and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.
- .2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.
- .3 Notify and obtain approval of utility companies before starting demolition.
- .4 Disconnect, cap, plug or divert, as required, existing public utilities within the property where they interfere with the execution of the work, in conformity with the requirements of the authorities having jurisdiction. Mark the location of these and previously capped or plugged services on the site and indicate location (horizontal and vertical) on the record drawings. Support, shore up and maintain pipes and conduits encountered.
- .1 Immediately notify Consultant/Departmental Representative, and utility company concerned in case of damage to any utility or service, designated to remain in place.
- .2 Immediately notify the Consultant/Departmental Representative should uncharted utility or service be encountered, and await instruction in writing regarding remedial action.
- 3.2 PROTECTION
- .1 Prevent movement, settlement, or damage to adjacent structures, utilities, and landscaping features to remain in place. Provide bracing and shoring required.
- .2 Keep noise, dust, and inconvenience to occupants to minimum.
- .3 Protect building systems, services and equipment.
- .4 Provide temporary dust screens, covers, railings, supports and other protection as required.
- .5 Do Work in accordance with Section 01 35 29.06 - Health and Safety

Requirements.

- | | | |
|-------------------------------|----|---|
| <u>3.3 SALVAGE</u> | .1 | Refer to demolition drawings and specifications for items to be salvaged for reuse. |
| | .2 | Remove items to be reused, store as directed by Consultant/Departmental Representative, and re-install under appropriate section of specification. |
| | .3 | Salvage and re-erect Building as per related Sections. |
| <u>3.4 SITE REMOVALS</u> | .1 | Remove items as indicated. |
| <u>3.5 DEMOLITION</u> | .1 | Remove parts of existing building to permit re-installation. Sort materials into appropriate piles for reuse. |
| <u>3.6 DISPOSAL</u> | .1 | Dispose of removed materials, to appropriate recycling facilities or reuse facilities except where specified otherwise, in accordance with authority having jurisdiction. |
| <u>3.7 PARTIAL DEMOLITION</u> | .1 | Not Used. |

PART 1 - GENERAL1.1 RELATED
SECTIONS

- .1 01 35 29.06 Health and Safety Requirements
- 01 35 43 Environmental Procedures
- 01 35 73 Procedures for Deconstruction of Structures
- 02 41 99 Demolition for Minor Works
- 09 06 61 Historic – Repainting Exterior Surfaces

1.2 PERFORMANCE_
REQUIREMENTS

- .1 Safe re-erection of existing structure and construction live loads to allow work to be accomplished.
- .2 Compliance with requirements of municipal, provincial, and federal Authorities regulating construction, shipping and transportation.
- .3 Deviation of levels: maximum movement of structure not more than 10 mm from one corner to the opposite corner.

1.3 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
 - .1 Shop drawings: submit drawings stamped and signed by professional engineer registered or licensed in Province of Ontario, Canada.
- .3 Provide schematic drawings showing suggested alternative specific procedure for re-erection of structure.
- .4 Provide drawings of shoring, bracing and temporary framing plans including lifting points, new garage doors, connectors and anchorages to Consultant/Departmental Representative for review.
- .5 Provide identification of numbering system and recording of photographs and dimensions for components to be temporarily removed.
- .6 Provide to Consultant/Departmental Representative copies of permits, certificates, and other documents verifying approval of Authorities with Jurisdiction.
- .7 Submit record drawings in accordance with Section 01 33 00 - Submittal Procedures and Section 01 78 00 - Closeout Submittals.

| | | |
|--|----|--|
| <u>1.4 REGULATORY_</u> <u>REQUIREMENTS</u> | .1 | Obtain necessary permits and regulatory approvals prior to commencing work. |
| <u>1.5 EXISTING_</u> <u>CONDITIONS</u> | .1 | Refer to Contract Drawings showing existing conditions. |
| | .2 | Thoroughly examine and record conditions prior to commencing work. |
| <u>1.6 SCHEDULING</u> | .1 | Submit schedule of activities, showing dates and duration to Consultant/Departmental Representative no later than 10 days before moving work. |
| | .2 | Co-ordinate moving procedure with scheduled work by archaeology, providing access and assistance as required. |
| | .3 | Notify Consultant/Departmental Representative in writing 2 working days before starting work, before lowering structure, and on completion of work. |
| <u>1.7 WASTE</u> <u>MANAGEMENT AND_</u> <u>DISPOSAL:</u> | .1 | Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal. |
| <u>PART 2 - PRODUCTS</u> | | |
| <u>2.1 MATERIALS</u> | .1 | Temporary braces, tie-rods, clamps, supports and cratings: constructed in accordance with plans prepared by contractor. These items of equipment to be property of the contractor. |
| <u>2.2 ACCESSORIES</u> | .1 | Provide equipment for safe moving, and careful transport, storage and re-erection of building and its related parts. |
| | .2 | Maximum permanent deformation tolerance is 5 mm. |
| <u>PART 3 - EXECUTION</u> | | |
| 3.1 VERIFICATION OF | .1 | Before starting work verify existing conditions and variations from |

CONDITIONS

original contract documents and notify Consultant/Departmental Representative.

- .2 Request direction from Consultant/Departmental Representative regarding protection and security of artifacts and objects.

3.2 PREPARATION

- .1 Support separate components securely to prevent damage. Place lighter components on edge. Lay movable items, including complete wall systems, flat during the move. Protect with soft material separators.
- .2 Provide and install temporary braces, struts, tie rods, partitions, supports and other installations necessary for safe moving of structure to ensure integral preservation of existing materials and structure.
- .3 Temporarily block exterior openings during moving and storage. Provide one opening with lock and key.
- .4 Verify that water, gas, electricity, oil, telephone and other connected services are disconnected.
- .5 Ensure that temporary measures taken are reversible and no permanent deformation or scaring of historic fabric result from this work.
- .6 Verify dimensions of new , foundations, connections matching dimensions of moved structure with 2 tolerances.
- .7 Verify co-ordination of construction joints, openings for beams in new foundations, key elevation points.

3.3 PROTECTION

- .1 Protect existing structure elements and building fabric from damage.
.1 Submit method of protection with shop drawings.
- .2 Videotape and label items related to structure, and its site, which may be affected during course of work. Transport and store these items with structure.
- .3 Verify suitability of conditions for moving structures. Maintain continued structural stability during and after transport.
- .4 Verify suitability of conditions at destination site before moving.
- .5 Obtain approval by Consultant/Departmental Representative prior to commencing work.

3.4 SPECIAL
TECHNIQUES

- .1 Identification:
 - .1 Establish numbering system for components and mark numbered components on copy of 8 drawings. Submit to Consultant/Departmental Representative for review.
 - .2 Identify and mark detached pieces and structural components as they are found.
 - .3 Identify wooden items with lettering tape at two locations.
 - .4 Identify metal items with tags.
 - .5 Identify stones and masonry units with paint applied to surface not exposed to view when back in position.
 - .6 Attach visible and non-perishable labels and tags. Locate for easy access during storage and reconstruction.
 - .7 Prepare and produce photographic record of structure, before dismantling, to facilitate reassembly.
- .2 Dismantling:
 - .1 Remove components and structural parts in sequence.
 - .2 Place components in storage in clear relation one to another.
 - .3 Place visible labels on components during storage.
- .3 Transportation:
 - .1 Follow procedure approved by Consultant/Departmental Representative for structure moving and storage. Proceed according to approved schedule to completion.

3.5 RE-INSTALLATION

- .1 Ensure new site has been prepared to accept structure and its interior components. Verify the site will accept the moved structure.
- .2 Assume responsibility for structure and related components until re-installation is completed on destination site.
- .3 Plan and co-ordinate activities of related trades before work of final installation starts.
- .4 Provide temporary protection, unless otherwise instructed.
- .5 Install structure at destination location and align within the following tolerances: 2 mm.
- .6 Leave temporary bracing, closures and other installations for moving in place until removal is authorized, in writing, by Consultant/Departmental Representative.
- .7 Repair and make good damage as directed by Consultant/Departmental Representative.

3.6 CLEANING

- .1 Structure:
 - .1 Remove temporary marking from completed work.

- .2 Original site:
 - .1 Clear debris and ensure site is in neat and safe condition.
 - .2 Ensure site is clean and restored to its original state, duplicating any pre-existing conditions by this work and as noted on drawings.

- .3 Destination site:
 - .1 Remove unattached materials and equipment; leave site in clean and safe condition.

PART 1 - GENERAL1.1 RELATED
SECTIONS

- .1 01 35 29.06 Health and Safety Requirements
- 01 35 43 Environmental Procedures
- 03 30 00.01 Cast In Place Concrete

1.2 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CSA-A23.1-04/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
 - .2 CSA-O86S1-05, Supplement No. 1 to CAN/CSA-O86-01, Engineering Design in Wood.
 - .3 CSA O121-M1978(R2003), Douglas Fir Plywood.
 - .4 CSA O151-04, Canadian Softwood Plywood.
 - .5 CSA O153-M1980(R2003), Poplar Plywood.
 - .6 CAN/CSA-O325.0-92(R2003), Construction Sheathing.
 - .7 CSA O437 Series-93(R2006), Standards for OSB and Waferboard.
 - .8 CSA S269.1-1975(R2003), Falsework for Construction Purposes.
 - .9 CAN/CSA-S269.3-M92(R2003), Concrete Formwork, National Standard of Canada
- .2 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S701-05, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.

1.3 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit shop drawings for formwork and falsework.
- .3 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 35 29.06 Health and Safety Requirements.
- .4 Indicate method and schedule of construction, shoring, stripping and re-shoring procedures, materials, arrangement of joints, special architectural exposed finishes, ties, liners, and locations of temporary embedded parts. Comply with CSA S269.1, for falsework drawings and comply with CAN/CSA-S269.3 for formwork drawings.
- .5 Indicate formwork design data: permissible rate of concrete placement, and temperature of concrete, in forms.

1.4 DELIVERY,
STORAGE AND
HANDLING

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Place materials defined as hazardous or toxic in designated containers.
- .3 Divert wood materials from landfill to a recycling or reuse facility as approved by Consultant/Departmental Representative.
- .4 Divert plastic materials from landfill to a recycling facility as approved by Consultant/Departmental Representative
- .5 Divert unused form release material from landfill to an official hazardous material collections site as approved by the Consultant/Departmental Representative.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Formwork materials:
 - .1 For concrete without special architectural features, use wood and wood product formwork materials to CSA-O121, CAN/CSA-O86, CSA O437 Series, CSA-O153.
 - .2 For concrete with special architectural features, use formwork materials to CSA-A23.1/A23.2.
 - .3 Rigid insulation board: to CAN/ULC-S701.
- .2 Form ties:
 - .1 For concrete not designated 'Architectural', use removable or snap-off metal ties, fixed or adjustable length, free of devices leaving holes larger than 25 mm diameter in concrete surface.
 - .2 For Architectural concrete, use snap ties complete with plastic cones and light grey concrete plugs.
- .3 Form release agent: non-toxic, biodegradable, low VOC.
- .4 Form stripping agent: colourless mineral oil, non-toxic, biodegradable, low VOC, free of kerosene, with viscosity between 15 to 24 mm²/s at 40 degrees C, flashpoint minimum 150 degrees C, open cup.
- .10 Falsework materials: to CSA-S269.1.

PART 3 – EXECUTION

3.1 FABRICATION AND
ERECTION

- .1 Verify lines, levels and centres before proceeding with formwork/falsework and ensure dimensions agree with drawings.
- .2 Fabricate and erect falsework in accordance with CSA S269.1.

- .3 Fabricate and erect formwork in accordance with CAN/CSA-S269.3 to produce finished concrete conforming to shape, dimensions, locations and levels indicated within tolerances required by CSA-A23.1/A23.2.
- .4 Align form joints and make watertight.
 - .1 Keep form joints to minimum.
- .5 Use 25 mm chamfer strips on external corners unless specified otherwise.
- .6 Form chases, slots, openings, drips, recesses, expansion and control joints as indicated.
- .7 Build in anchors, sleeves, and other inserts required to accommodate Work specified in other sections.
 - .1 Ensure that anchors and inserts will not protrude beyond surfaces designated to receive applied finishes, including painting.
- .8 Clean formwork in accordance with CSA-A23.1/A23.2, before placing concrete.

3.2 REMOVAL AND
RESHORING

- .1 Leave formwork in place for following minimum periods of time after placing concrete.
 - .1 Two (2) days for footings and abutments.
- .2 Remove formwork when concrete has reached 50 % of its design strength or minimum period noted above, whichever comes later, and replace immediately with adequate reshoring.
- .3 Provide necessary reshoring of members where early removal of forms may be required or where members may be subjected to additional loads during construction as required.
- .4 Re-use formwork and falsework subject to requirements of CSA-A23.1/A23.2.

PART 1 - GENERAL

| | | |
|--|----|---|
| <u>1.1 RELATED REQUIREMENTS</u> | .1 | 01 35 29.06 Health and Safety Requirement 01 35 43 Environmental Procedures 03 10 00 Concrete Forming and Accessories |
| <u>1.2 REFERENCES</u> | .1 | ASTM International .1 ASTM A 185/A 185M-07, Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete. .2 ASTM D 260-86(2001), Standard Specification for Boiled Linseed Oil. .3 ASTM D 1751-04, Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non extruding and Resilient Bituminous Types). |
| | .2 | Canadian General Standards Board (CGSB) .1 CAN/CGSB-19.24-M90, Multicomponent, Chemical-Curing Sealing Compound. |
| | .3 | CSA International .1 CSA-A23.1/A23.2-2004, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete. .2 CSA A3000-08, Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005). .3 CAN/CSA-G30.18-M92(R2002), Billet-Steel Bars for Concrete Reinforcement. |
| <u>1.3 ADMINISTRATIVE REQUIREMENTS</u> | .1 | Pre-installation Meetings: Convene pre-installation meeting one week prior to beginning concrete works. .1 Ensure key personnel attend. .2 Verify project requirements. |
| <u>1.4 ACTION AND INFORMATIONAL SUBMITTALS</u> | .1 | Provide submittals in accordance with Section 01 33 00 - Submittal Procedures. |
| | .2 | Shop Drawings: .1 Submit placing drawings prepared in accordance with plans to clearly show size, shape, location and necessary details of reinforcing. |

- .2 Submit drawings showing formwork and falsework design to:
CSA A23.1/A23.2.
- .3 At least 4 weeks prior to beginning Work, submit to
Consultant/Departmental Representative concrete mix design.
- .4 Provide testing results and reports for review by
Consultant/Departmental Representative and do not proceed without
written approval when deviations from mix design or parameters are
found.
- .5 Concrete hauling time: provide for review by
Consultant/Departmental Representative deviations exceeding
maximum allowable time of 120 for concrete to be delivered to site of
Work and discharged after batching.

1.5 QUALITY ASSURANCE

- .1 Provide to Consultant/Departmental Representative, 1 week minimum
prior to starting concrete work, valid and recognized certificate from
plant delivering concrete.
 - .1 Quality Control Plan: provide written report to
Consultant/Departmental Representative verifying
compliance that concrete in place meets performance
requirements.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Delivery and Acceptance Requirements:
 - .1 Concrete hauling time: deliver to site of Work and discharged
within 120 minutes maximum after batching.
 - .1 Do not modify maximum time limit without receipt
of prior written agreement from
Consultant/Departmental Representative and
concrete producer as described in CSA A23.1/A23.2.
 - .2 Deviations to be submitted for review by the
Consultant/Departmental Representative.
 - .2 Concrete delivery: ensure continuous concrete delivery from plant
meets CSA A23.1/A23.2.

PART 2 - PRODUCTS

2.1 DESIGN CRITERIA

- .1 Alternative 1 - Performance: to CSA A23.1/A23.2, and as described
in MIXES of PART 2 - PRODUCTS.

-
- 2.2 PERFORMANCE_
CRITERIA
- .1 Quality Control Plan: ensure concrete supplier meets performance criteria of concrete as established by Consultant/Departmental Representative and provide verification of compliance as described in PART 1 - QUALITY ASSURANCE.
- 2.3 MATERIALS
- .1 Cement: to CSA A3001, Type GU.
- .2 Blended hydraulic cement: Type GUb to CSA A3001.
- .3 Supplementary cementing materials: with minimum 20% Type F fly ash replacement N by mass of total cementitious materials to CSA A3001.
- .4 Water: to CSA A23.1/A23.2.
- .5 Reinforcing bars: to CAN/CSA-G30.18, Grade 400.
- .6 Welded steel wire fabric: to ASTM A 185.
- .7 Other concrete materials: to CSA A23.1/A23.2.
- 2.4 MIXES
- .1 Alternative 1 - Performance Method for specifying concrete: to meet Consultant/Departmental Representative performance criteria to CSA A23.1/A23.2.
- .1 Ensure concrete supplier meets performance criteria as established below and provide verification of compliance as described in PART 3 - VERIFICATION.
- .2 Provide concrete mix to meet following plastic state requirements:
- .1 Workability: free of surface blemishes, segregation.
- .2 Finishability: minimal amount of bleeding.
- .3 Set time: 3.5 hours maximum.
- .3 Provide concrete mix to meet following hard state requirements:
- .1 Durability and class of exposure: F-1.
- .2 Compressive strength at 28 age: 25 MPa minimum.
- .3 Intended application: footings.
- .4 Aggregate size 19 mm maximum.
- .5 Volume stability: acceptable volume change range 5% due to shrinkage, creep and freeze thaw cycle.
- .6 Pre-qualification: no required.

PART 3 - EXECUTION

- 3.1 PREPARATION
- .1 Provide Consultant/Departmental Representative 24 hours notice before each concrete pour.
 - .2 Place concrete reinforcing in accordance with Section 03 20 00 - Concrete Reinforcing.
 - .3 During concreting operations:
 - .1 Development of cold joints not allowed.
 - .2 Ensure concrete delivery and handling facilitates placing with minimum of rehandling, and without damage to existing structure or Work.
 - .4 Protect previous Work from staining.
 - .5 Clean and remove stains prior to application of concrete finishes.
- 3.2 INSTALLATION_ APPLICATION
- .1 Do cast-in-place concrete work in accordance with CSA A23.1/A23.2.
 - .2 Sleeves and inserts:
 - .1 Cast in sleeves, ties, slots, anchors, reinforcement, frames, conduit, bolts, waterstops, joint fillers and other inserts required to be built-in.
 - .2 Sleeves and openings greater than 100 mm x 100 mm not indicated, must be reviewed by Consultant/Departmental Representative.
- 3.3 FINISHES
- .1 Formed surfaces exposed to view: sack rubbed finish in accordance with CSA A23.1/A23.2.
 - .2 Equipment pads: provide smooth trowelled surface.
 - .3 Pavements, walks, curbs and exposed site concrete:
 - .1 Screed to plane surfaces and use aluminum floats.
 - .2 Provide round edges and joint spacings using standard tools.
 - .3 Trowel smooth to provide lightly brushed non-slip finish.
- 3.4 CONTROL JOINTS
- .1 Cut control joints in slabs on grade at locations indicated, to CSA A23.1/A23.2 and install specified joint sealer/filler.

| | | |
|---|----|--|
| <u>3.5 EXPANSION AND ISOLATION JOINTS</u> | .1 | Install premoulded joint filler in expansion and isolation joints full depth of slab flush with finished surface to CSA A23.1/A23.2. |
| <u>3.6 CURING</u> | .1 | Use curing compounds compatible with applied finish on concrete surfaces free of bonding agents and to CSA A23.1/A23.2. |
| <u>3.7 SEALING APPLICATION</u> | .1 | After curing is complete, apply two even coats of linseed oil mixture to clean dry surfaces, each at 8 m ² /L. Allow first coat to dry before applying second coat. |
| <u>3.8 SITE TOLERANCES</u> | .1 | Finishing tolerance to CSA A23.1/A23.2. |
| <u>3.9 FIELD QUALITY CONTROL</u> | .1 | Concrete testing: to CSA A23.1/A23.2 by testing laboratory approved by Consultant/Departmental Representative. |
| <u>3.10 CLEANING</u> | .1 | Use trigger operated spray nozzles for water hoses. |
| | .2 | Designate cleaning area for tools to limit water use and runoff. Approval by Consultant/Departmental Representative. |
| | .3 | Cleaning of concrete equipment to be done in accordance with Section 01 35 43 Environmental Procedures. |

PART 1 - GENERAL1.1 RELATED SECTIONS

- | | | |
|----|-------------|--|
| .1 | 01 33 00 | Submittal Procedures. |
| | 01 35 29.06 | Health and Safety Requirements |
| | 01 35 43 | Environmental Procedures |
| | 01 74 21 | Construction/Demolition Waste Management And Disposal. |
| | 03 30 00 | Cast-in-Place Concrete. |
| | 06 15 00 | Wood Decking |
| | 09 03 61 | Historic – Repainting Exterior Surfaces |

1.2 REFERENCES

- | | | |
|----|--|--|
| .1 | American Society for Testing and Materials International, (ASTM) | |
| | .1 | ASTM A 53/A 53M-02, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless. |
| | .2 | ASTM A 269-02, Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service. |
| | .3 | ASTM A 307-02, Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength. |
| .2 | Canadian General Standards Board (CGSB) | |
| | .1 | CAN/CGSB-1.40-97, Anti-corrosive Structural Steel Alkyd Primer. |
| | .2 | CAN/CGSB-1.181-92, Ready-Mixed, Organic Zinc-Rich Coating. |
| .3 | Canadian Standards Association (CSA International) | |
| | .1 | CAN/CSA-G40.20/G40.21-98, General Requirements for Rolled or Welded Structural Quality Steel. |
| | .2 | CAN/CSA-G164-M92(R1998), Hot Dip Galvanizing of Irregularly Shaped Articles. |
| | .3 | CAN/CSA-S16.1-01, Limit States Design of Steel Structures. |
| | .4 | CSA W48-01, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau). |
| | .5 | CSA W59-1989(R2001), Welded Steel Construction (Metal Arc Welding) (Imperial Version). |

1.3 SUBMITTALS

- | | | |
|----|---------------|---|
| .1 | Product Data: | |
| | .1 | Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures. |
| | .2 | Submit three (3) copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOC's: |
| | .1 | For finishes, coatings, primers and paints. |

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- .2 Shop Drawings
- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.
 - .3 Mock-up – Submit Wicket Stop Block Casting Mould and 2 castings.
- 1.4 QUALITY ASSURANCE
- .1 Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
 - .2 Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
 - .3 Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.
- 1.5 DELIVERY, STORAGE, AND HANDLING
- .1 Packing, Shipping, Handling and Unloading:
 - .1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 - Common Product Requirements.
 - .2 Storage and Protection:
 - .1 Cover exposed steel surfaces with pressure sensitive heavy protection paper or apply strippable plastic coating, before shipping to job site.
 - .2 Leave protective covering in place until final cleaning of building. Provide instructions for removal of protective covering.
- 1.6 WASTE MANAGEMENT AND DISPOSAL
- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
 - .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
 - .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard packaging material for recycling in accordance with Waste Management Plan.

- .4 Divert unused metal materials from landfill to metal recycling facility approved by Consultant/Departmental Representative.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Steel sections and plates: to CAN/CSA-G40.20/G40.21, Grade 300W or 350W.
- .2 Welding materials: to CSA W59.
- .3 Welding electrodes: to CSA W48 Series.
- .4 Bolts and anchor bolts: to ASTM A 307.
- .5 High strength metal epoxy
- Devcon
 - Plastic Steel Putty (A)
 - Titanium Putty or approved equal

2.2 FABRICATION

- .1 Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.
- .2 Use self-tapping shake-proof flat headed screws on items requiring assembly by screws or as indicated.
- .3 Where possible, fit and shop assemble work, ready for erection.
- .4 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.

2.3 FINISHES

- .1 Shop coat primer: to CAN/CGSB-1.40.
- .2 Zinc primer: zinc rich, ready mix to CAN/CGSB-1.181.
- .3 Date stamp fabrication date 2mm high lettering in inconspicuous place.

2.4 ISOLATION COATING

- .1 Isolate aluminum from following components, by means of bituminous paint:
- .1 Dissimilar metals except stainless steel, zinc, or white bronze of small area.
 - .2 Concrete, mortar and masonry.
 - .3 Wood.

2.5 SHOP PAINTING

- .1 Apply one shop coat of primer to metal items, with exception of galvanized or concrete encased items.
- .2 Use primer unadulterated, as prepared by manufacturer. Paint on dry

surfaces, free from rust, scale, grease. Do not paint when temperature is lower than 7 degrees C.

.3 Clean surfaces to be field welded; do not paint.

2.6 ANGLE STOPS

.1 Steel angles: prime painted, sizes indicated for openings.

.2 Weld or bolt back-to-back angles to profiles as indicated.

.3 Finish: shop painted.

2.7 WICKET CHAIN STOPS

.1 Cast replica wicket chain stops.

.1 Make mold from existing

.2 Cast replica (s)

.3 Date stamp with 2 mm high lettering in inconspicuous location.

.4 Prime and paint to match.

PART 3 - EXECUTION

3.1 ERECTION

.1 Do welding work in accordance with CSA W59 unless specified otherwise.

.2 Erect metalwork square, plumb, straight, and true, accurately fitted, with tight joints and intersections.

.3 Provide suitable means of anchorage acceptable to Consultant/Departmental Representative such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles.

.4 Exposed fastening devices to match finish and be compatible with material through which they pass.

.5 Provide components for building by other sections in accordance with shop drawings and schedule.

.6 Make field connections with bolts to CAN/CSA-S16.1, or weld.

.7 Hand items over for casting into concrete or building into masonry to appropriate trades together with setting templates.

.8 Touch-up rivets, field welds, bolts and burnt or scratched surfaces after completion of erection with primer.

.9 Touch-up galvanized surfaces with zinc rich primer where burned by field welding.

3.2 CLEANING

- .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

PART 1 - GENERAL

| | | |
|------------------------------|----|---|
| <u>1.1 RELATED SECTIONS</u> | .1 | 01 35 29.06 Health and Safety Requirements 01 35 43 Environmental Procedures 06 15 00 Wood Decking |
| <u>1.2 REFERENCES</u> | .1 | American Wood-Preservers' Association (AWPA) .1 AWPA M2-01, Standard for Inspection of Treated Wood Products. .2 AWPA M4-06, Standard for the Care of Preservative-Treated Wood Products. |
| | .2 | Canadian Standards Association (CSA International) .1 CSA O80 Series-97(R2002) - O80S2-05, Wood Preservation. .2 CSA O322-02, Procedure for Certification of Pressure-Treated Wood Materials for Use in Preserved Wood Foundations. .3 Guidelines for Use, Handling and Disposal of Treated Wood. Parks Canada Agency, March 2008. |
| <u>1.3 SUBMITTALS</u> | .1 | Submit Submittal submissions: in accordance with Section 01 33 00 - Submittal Procedures. |
| | .2 | Quality assurance submittals: .1 Submit certificates in accordance with Section 01 33 00 - Submittal Procedures. .2 For products treated with preservative by pressure impregnation submit following information certified by authorized signing officer of treatment plant: .1 Information listed in AWPA M2 and revisions specified in CSA O80 Series, Supplementary Requirement to AWPA M2 applicable to specified treatment. .2 Moisture content after drying following treatment with water-borne preservative. .3 Acceptable types of paint, stain, and clear finishes that may be used over treated materials to be finished after treatment. |
| <u>1.4 QUALITY ASSURANCE</u> | .1 | Not Used. |

| | | |
|--|----|---|
| <u>1.5 DELIVERY, STORAGE, AND HANDLING</u> | .1 | Waste Management and Disposal: |
| | .1 | Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal. |

PART 2 - PRODUCTS

| | | |
|--|----|---|
| <u>2.1 SUSTAINABLE_ REQUIREMENTS</u> | .1 | Not Used. |
| <u>2.2 MATERIALS</u> | .1 | Preservative: to CSA-O80 Series, odourless water-borne, for clear finish. |
| | .2 | Preservatives: maximum VOC limit 350 g/L. |
| | .3 | Fire-Retardant: to CSA O80.20. |

PART 3 – EXECUTION

| | | |
|---|----|---|
| <u>3.1 APPLICATION: PRESERVATIVE</u> | .1 | Treat cut areas to CSA O80 Series using preservative. |
| | .2 | Following water-borne preservative treatment, dry material to maximum moisture content of 20%. |
| <u>3.2 APPLICATION: FIRE-RETARDANT</u> | .1 | Not Used. |
| <u>3.3 APPLICATION: FIELD TREATMENT</u> | .1 | Comply with AWPA M4 and revisions specified in CSA O80 Series, Supplementary Requirements to AWPA M2. |
| | .2 | Remove chemical deposits on treated wood to receive applied finish. |

PART 1 – GENERAL1.1 RELATED
SECTIONS

- | | | |
|----|-------------|--------------------------------|
| .1 | 01 35 29.06 | Health and Safety Requirements |
| | 01 35 43 | Environmental Procedures |
| | 05 05 00 | Metal Fabrications |
| | 06 05 73 | Wood Treatment |

1.2 REFERENCES

- | | | |
|----|---|---|
| .1 | American Society for Testing and Materials International (ASTM) | |
| | .1 | ASTM A 653/A 653M-06, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process. |
| | .2 | American Wood Preservers' Association (AWPA) |
| | .1 | AWPA A2-06, Standard Methods for Analysis of Water-bourne Preservatives and Fire Retardant Formulations. |
| | .2 | AWPA A3-05, Standard Methods for Determining Penetration of Preservatives and Fire Retardants. |
| | .3 | 2006 Ontario Building Code |
| | .4 | Canadian Standards Association (CSA International) |
| | .1 | CSA B111-1974(R2003), Wire Nails, Spikes and Staples. |
| | .2 | CSA O80 Series-05/O80 S2-05, Wood Preservation. |
| | .3 | CSA O80.20-97(R2002), Fire-Retardant Treatment of Lumber by Pressure Processes. |
| | .4 | CAN/CSA O86-01(R2006), Consolidation Engineering Design in Wood. |
| | .5 | CAN/CSA-G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles. |
| | .6 | CSA O121-M1978(R2003), Douglas Fir Plywood. |
| | .7 | CSA O141-05, Softwood Lumber. |
| | .8 | CSA O151-04, Canadian Softwood Plywood. |
| | .9 | CSA O153-M1980 (R2003), Poplar Plywood. |
| | .10 | CAN/CSA-O325.0-92(R2003), Construction Sheathing |
| | .5 | Forest Stewardship Council (FSC) |
| | .1 | FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship. |
| | .2 | FSC-STD-20-002-2004, Structure and Content of Forest Stewardship Standards V2-1. |
| | .3 | FSC Accredited Certified Bodies. |
| | .6 | National Lumber Grades Authority |
| | .1 | NLGA Standard Grading Rules for Canadian Lumber 2005. |

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- .7 South Coast Air Quality Management District (SCAQMD), California State (SCAQMD)
 - .1 SCAQMD Rule 1113-04, Architectural Coatings.
 - .2 SCAQMD Rule 1168-05, Adhesives and Sealants Applications.
 - .8 Canada Green Building Council (CaGBC)
 - .1 LEED Canada-NC Version 1.0-[2004], LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.
 - .9 Forest Stewardship Council (FSC)
 - .1 FSC-STD-01-001-[2004], FSC Principle and Criteria for Forest Stewardship.
 - .2 FSC-STD-20-002-[2004], Structure and Content of Forest Stewardship Standards V2-1.
 - .3 FSC Accredited Certified Bodies.
 - .10 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
 - .11 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber [2005].
 - .12 South Coast Air Quality Management District (SCAQMD), California State (SCAQMD)
 - .1 SCAQMD Rule 1113-[04], Architectural Coatings.
 - .2 SCAQMD Rule 1168-[05], Adhesives and Sealants Applications.
 - .13 Guidelines for Use, Handling and Disposal of Treated Wood. Parks Canada Agency, March 2008
-
- 1.3 SUBMITTALS
- .1 Submit Submittal submissions: in accordance with Section 01 33 00 - Submittal Procedures.
-
- 1.4 QUALITY ASSURANCE
- .1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
-
- 1.5 DELIVERY, STORAGE, AND HANDLING
- .1 Waste Management and Disposal:
 - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 - PRODUCTS2.1 SUSTAINABLE_
REQUIREMENTS

Not Used.

2.2 MATERIALS

- .1 Forest Stewardship Council (FSC) certified.
- .2 Wood decking and railings: to NLGA standard Grading Rules for Canadian Lumber Select or Commercial grade, SPF (Spruce, Pine, Fir) and Cedar.
- .4 Decking lengths: 1.8 to 6 m or longer with a minimum of 90% planks exceeding 3 m. Square end trimmed. For single spans shorter than 3 m use decking of same length as span.
- .5 Nails: to CSA B111, galvanized finish; sizes as recommended in CAN/CSA O86.
- .6 Splines: galvanized metal, as recommended by decking manufacturer.
- .7 Bolts: minimum 12 mm Ø, sizes as recommended in CAN/CSA O86 comes with nuts and washers.

PART 3 - EXECUTION3.1 INSTALLATION

- .1 Do wood deck work in accordance with CAN/CSA O86 except where specified otherwise.
- .2 Install decking in accordance with CAN/CSA O86.
- .3 Provide minimum of one bearing support for each plank except extend cantilevers over two supports. Splines are not permitted.
- .4 Avoid joints in spans.
- .5 Apply preservative to end cuts where pressure treated lumber is specified.

3.2 FIELD QUALITY_
CONTROL

- .1 Not Used.

3.3 CLEANING

- .1 Remove tool marks, bruises, and scratches.

DESCRIPTION: This section specifies requirements for structural steel coating (sandblasting and painting) and conforming to areas identified on plans or established by the Consultant/Departmental Representative.

Specification Special Provisions:

- .1 The Contractor shall supply and install the works herein in accordance with the more stringent requirements of those listed herein or with the following:
 - .1 Ontario Provincial Standards Specification for Construction - OPSS 911 Coating Structural Steel Systems
 - .2 Ontario Provincial Standards Specification for Materials - OPSS 1704 Painting Coating Systems for Structural Steel

PART 1 – GENERAL

1.1 RELATED WORK

- .1

| | |
|-------------|---|
| 01 39 29.06 | Health and Safety Requirements |
| 01 35 43 | Environmental Procedures |
| 01 35 73 | Procedures for Deconstruction of Structures |
| 02 43 13.05 | Historic – Structure Relocation |
| 05 50 00 | Metal Fabrications |

1.2 REFERENCES

- .1 CGSB 1-GP-69M-79 Paint, Aluminum.
- .2 CGSB 1-GP-140M-78 Primer, Red Lead, Iron Oxide, Oil Alkyd Type.
- .3 CGSB 1-GP-166M-79 Primer, Basic Lead Silico - Chromate, Oil, Alkyd Type.
- .4 CGSB 1-GP-167M-80 Enamel, Exterior, Basic head Silico-Chromate, Alkyd Type.
- .5 CSA G189-1966 (R2003) Sprayed Metal Coating for Atmospheric Corrosion Protection
- .6 ASTM D 4417-03 Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel
- .7 SSPC AB 1, September 2000 - Mineral and Slag Abrasives
- .8 SSPC PA 1, April 2000 - Shop, Field, and Maintenance Painting of Steel
- .9 SSPC PA 2, May 2004 - Measurement of Dry Coating Thickness with Magnetic Gauges
- .10 SP 11, November 2004 - Power Tool Cleaning to Bare Metal

-
- .11 SP 10/NACE No. 2, September 2000 - Near-White Blast Cleaning
- .12 CGSB 1-GP-71 No. 5-96 Methods of Testing Paints and Pigments - Drying Times of Paints and Related Coatings
- .13 Environmental Protection Act, Ontario Regulation 347, General - Waste Management - R.R.O. 1990
- .14 The designation OPSS refers to Ontario Provincial Standard Specifications
- 1.3 SOURCE QUALITY CONTROL
- .1 Retain purchase orders, invoices and other documents to prove that material used in contract meets requirements of specification and produce when requested by Consultant/Departmental Representative.
- 1.4 SAMPLES
- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures and this section.
- .2 Provide Consultant/Departmental Representative with two (2) litre samples of each paint delivered to site, one sample from Manufacturer's containers and one sample from "painters pot".
- 1.5 DELIVERY AND STORAGE
- .1 Deliver, store, handle and protect materials with care.
- .2 Deliver and store materials in manufacturers original container with labels intact.
- .3 Ensure dry delivery and storage of materials and equipment at site.
- .4 Store materials and equipment in a well ventilated place with temperature range 20 to 30° C.
- 1.6 EXISTING CONDITIONS
- .1 Investigate structural problems related to safe execution of preparation of structure to be painted and report unsatisfactory conditions to Consultant/Departmental Representative before beginning work.
- .2 Report to Consultant/Departmental Representative conditions of deteriorated materials found during preparation, not previously disclosed.
- 1.7 ENVIRONMENTAL REQUIREMENTS
- .1 Substrate and ambient temperature must be within limits prescribed in paint standard by manufacturer.
- .2 Enclosures must be supplied and installed by the Contractor in accordance with this specification to contain and collect the spent blast medium for testing and subsequent disposal. Enclosures must

also protect adjacent areas from overspray.

1.8 PROTECTION

- .1 Protect paint and painting equipment before use and during length of contract from climatic elements.
- .2 Protect exterior of structure from markings and other damage. Protect completed work from paint droppings. Use non-staining coverings.
- .3 Provide for protection of passing pedestrians and the general public.

1.9 SCHEDULING OF WORK

- .1 Submit work schedule starting and final completion dates for approval by Consultant/Departmental Representative.
- .2 Take measures necessary to complete work within approved scheduled time. Change in schedule must be approved by Consultant/Departmental Representative.
- .3 Co-ordinate execution with other work at site.

1.10 ALTERNATIVES

- .1 Products conforming with this specification must be identified in writing by contractor for approval by Consultant/Departmental Representative.
- .2 Changing manufacturers brands, sources of supply of painting materials from those previously approved must be approved by Consultant/Departmental Representative.
- .3 Request for alternative approval must be submitted in writing and be accompanied by full literature and recommendations from manufacturers concerned.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Paint materials for each coating formulae to be products of a single manufacturer.
- .2 Painting system to be a three (3) coat epoxy and polyurethane system.
 - .1 First Coat (Primer): Zinc-Epoxy
 - .2 Second Coat (Mid-Coat): Polyurethane
 - .3 Third Coat (Top-Coat): Polyurethane

- .3 Reproduce paint colour to a historically accurate paint colour. Must match in all aesthetic respects of original samples removed from structure. Colour match must be approved by Consultant/Departmental Representative.
- .4 Pigment to CGSB or proprietary pigment of known performance. Vehicle to CGSB or proprietary vehicle of known performance. Coloring matter to CBSB .
- .5 Liquid paint remover to CGSB or proprietary liquid paint remover of known performance.

2.2 TOOLS AND EQUIPMENT

- .1 Consultant/Departmental Representative will determine areas where power tools or equipment may be used for both preparing and painting of substrate.

2.3 MIXING PAINT

- .1 Paint to be ready for application when received.
- .2 Add thinners only with prior approval of Consultant/Departmental Representative.
- .3 Mix paint in full containers up to 25 litres capacity by vibrator shaker method or as per manufacturer approved methods.
- .4 Mix paint in full containers up to 5 litres by propeller mixer method or as per manufacturer approved methods.
- .5 Reproduce historic paint by:
 - .1 Adding small amount of vehicle to pigment.
 - .2 Mixing well by propeller method.
 - .3 Adding slowly remainder of vehicle while mixing until coating is homoneneous.
 - .4 Adding small amounts of colouring matter (if necessary) until colour achieved.
 - .5 Mixing until homogeneous.
 - .6 Checking all labels for special manufacturer's instructions.
- .6 Do not mix or keep paint in suspension by means of an air stream under paint surface.

2.4 PROPORTIONS

- .1 Paint chip removed from structure may be used to define composition and properties to which new paint should conform to ensure duplication of historic paint and finish and compatibility.
- .2 Obtain approval, of Consultant/Departmental Representative to substitute paint on Qualified Product List.

PART 3 – EXECUTION3.1 PREPARATION FOR
TASKS

- .1 Ensure that workers are informed of safety rules.
- .2 Ensure that safety measures have been taken each day before any job is started.
- .3 Verify that equipment meets safety standards.
- .4 Encourage workers to report hazards in their work.
- .5 Place safety devices and signs near work area as indicated or directed.

3.2 SURFACE
PREPARATION

- .1 Prepare steel surfaces exposed normally to dry weather to CGSB 85-GP-15M.
- .2 Prepare steel surfaces exposed to salt or fresh water to CGSB 85-GP-18M.
- .3 Prepare steel surface to the most stringent of the above or SSPC-SP10/NACE No. 2.

3.3 PAINT
APPLICATION

- .1 Method of application and uniform coats of specified dry film thickness be in agreement with paint supplier and Consultant/Departmental Representative.

3.4 FINISHES

- .1 Recoat surfaces with same kind of paint previously used, unless tests or experience shows that new paint is compatible with old. Incompatibility may result in many defects all of which affect adhesion and ultimate service life of paint system. If generic type of old system cannot be established, consultation with all contracting parties should take place.
- .2 Apply pretreatment or primers and topcoating to previously painted galvanized steel surfaces to CGSB 85-GP-16M.

3.5 WORKMENSHP

- .1 All painting work to be carried out by qualified personnel and to job specifications.

3.6 FIELD QUALITY
CONTROL

- .1 Examine surface for adequate preparation.
- .2 Check all materials for correctness.
- .3 Inspect during application for correct procedures.

3.7 CLEANING

- .1 Avoid paint splashing on exposed surfaces not to be painted. Smears and spatter be removed immediately, using compatible solvent.
- .2 Avoid scuffing newly applied paint.

3.8 PROTECTION OF COMPLETED WORK

- .1 Protect area where paint has been applied.
- .2 On completion of specified work remove surplus materials, tools and equipment and debris on work area; leave clean and tidy to complete satisfaction of Consultant/Departmental Representative.

PART 1 - GENERAL1.1 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
 - .1 ASTM D 698, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (600kN-m/m³).
 - .2 Canadian Standards Association (CSA International)
 - .1 CSA-A23.1/A23.2-[04], Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
 - .3 The designation OPSS refers to Ontario Provincial Standard Specifications.

1.2 SOIL REPORT

- .1 Not Available.
- .2 Archeologist to be present for all excavation activities. Notify Consultant/Departmental Representative 14 days prior to commencement to allow for scheduling of archeologist.

1.3 REGULATIONS

- .1 Shore and brace excavations, protect slopes and banks and perform all work in accordance with Provincial and Municipal regulations whichever is more stringent.

1.4 TESTS AND INSPECTIONS

- .1 Testing of materials and compaction of backfill will be carried out by testing laboratory designated by Consultant/Departmental Representative.
- .2 Not later than one week before backfilling or filling, provide to designated testing agency, 23 kg sample of backfill material[s] proposed for use.
- .3 Do not begin backfilling or filling operations until material has been approved for use by Consultant/Departmental Representative.
- .4 Not later than 48 hours before backfilling or filling with approved material, notify Consultant/Departmental Representative so that compaction tests can be carried out by designated testing agency.
- .5 Before commencing work, conduct, with Consultant/Departmental Representative, condition survey of existing structures, trees and other plants, lawns, fencing, service poles, wires, rail tracks and paving, survey bench marks and monuments which may be affected by work.

- .6 Testing and inspection to be completed by Contractor as approved by the Consultant/Departmental Representative.

1.5 BURIED SERVICES

- .1 Before commencing work verify the location of all buried services on and adjacent to the site.
- .2 Arrange with appropriate authority for relocation of buried services that interfere with execution of work. Pay costs of relocating services.
- .3 Remove obsolete buried services within 2 m of foundations. Cap cut-offs.

1.6 PROTECTION

- .1 Protect excavations from freezing.
- .2 Keep excavations clean, free of standing water, and loose soil.
- .3 Where soil is subject to significant volume change due to change in moisture content, cover and protect to Consultant/Departmental Representative's approval.
- .4 Protect natural and man-made features required to remain undisturbed. Unless otherwise indicated or located in an area to be occupied by new construction, protect existing trees from damage.
- .5 Protect buried services that are required to remain undisturbed.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Granulars to OPSS1010. Sand to OPSS1004.
- .2 Not Used.
- .3 Unshrinkable fill: concrete to CSA-A23.1/A23.2.

PART 3 - EXECUTION

3.1 SITE PREPARATION

- .1 Remove obstructions, ice and snow, from surfaces to be excavated within limits indicated.
- .2 Cut pavement or sidewalk neatly along limits of proposed excavation in order that surface may break evenly and cleanly.

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- 3.2 CLEARING AND GRUBBING .1 Not Used.
- 3.3 EXCAVATION .1 Topsoil stripping:
- .1 Do not handle topsoil while in wet or frozen condition or in any manner in which soil structure is adversely affected.
 - .2 Strip topsoil to depths as directed by Consultant/Departmental Representative. Avoid mixing topsoil with subsoil.
 - .3 Strip topsoil over areas to be covered by new construction, over areas where grade changes are required, and so that excavated material may be stockpiled without covering topsoil.
 - .4 Stockpile in locations as directed by Consultant/Departmental Representative.
- .2 Excavate as required to carry out work, in all materials met. Do not disturb soil or rock below bearing surfaces. Notify Consultant/Departmental Representative when excavations are complete. If bearings are unsatisfactory, additional excavation will be authorized in writing and paid for as additional work. Excavation taken below depths shown without Consultant/Departmental Representative's written authorization to be filled with concrete of same strength as for footings at Contractor's expense.
- .3 Excavate trenches to provide uniform continuous bearing and support for 150 mm thickness of Granular 'A' bedding material on solid and undisturbed ground.
- 3.4 BACKFILLING .1 Inspection: do not commence backfilling until fill material and spaces to be filled have been inspected and approved by Consultant/Departmental Representative.
- .2 Remove snow, ice, construction debris, organic soil and standing water from spaces to be filled.
- .3 Lateral support: maintain even levels of backfill around structures as work progresses, to equalize earth pressures.
- .4 Compaction of subgrade: compact existing subgrade under walks and roads, to same compaction as specified for fill. Fill excavated areas with selected subgrade material compacted as specified for fill.
- .5 Placing:
- .1 Place backfill, fill and base course material in 150 mm lifts. Add water as required to achieve specified density.

- .6 Compaction: compact each layer of material to following densities for material to ASTM D 698:
 - .1 To underside of basecourses: 95%.
 - .2 Basecourses: 100%.
 - .3 Elsewhere: 90%.

- .7 Under seeded and sodded areas: use site excavated material to bottom of topsoil.

- .8 Blown rock material, not capable of fine grading, is not acceptable, imported material must be placed on this type of material.

- .9 Against piers (except as applicable to trenches and under slabs and paving): excavated material or imported material with no stones larger than 200 mm diameter within 600 mm of piers.

3.5 GRADING

- .1 Grade surface so that water will drain away from the piers, to disposal areas approved by Consultant/Departmental Representative. Grade to be gradual as shown on drawings.

3.6 SHORTAGE AND SURPLUS

- .1 Supply all necessary fill to meet backfilling and grading requirements and with minimum and maximum rough grade variance.

- .2 Dispose of surplus material off site.