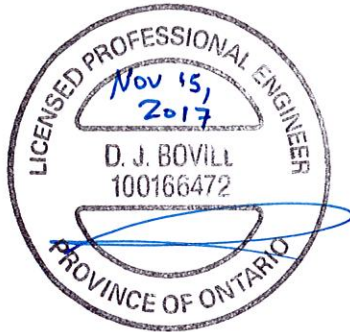


PROJECT TITLE      **Demolition of the Port Burwell Automation Building,**  
Port Burwell Small Craft Harbour, Port Burwell, Ontario,  
Public Works and General Services Canada (PWGSC).

PROJECT NUMBER    R.089637.001

PROJECT DATE        2018-01-03

PROFESSIONAL SEALS



David Bovill, P. Eng.  
Project Engineer

End of Section

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End of Section

PART 1 GENERAL

Dwg. No.	Title	Issue No.	Rev. No.	Issue Date
<b>DEMOLITION</b>				
A100	Site Demolition Plan, Building Demolition Plan, Notes & Legend	0	-	2017/11/15

End of Section

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## PART 1 GENERAL

### 1.1 Section Includes

- .1 Work covered by contract documents.
- .2 Location of site.
- .3 Metric project.
- .4 Site access.
- .5 Contractor traffic route.
- .6 Work sequence.
- .7 Contractor use of premises.
- .8 References and codes.
- .9 Engineer design.
- .10 Hazardous material discovery.
- .11 Verification.
- .12 Building smoking environment.
- .13 Special conditions.
- .14 Site security.
- .15 Protection of drawings.

### 1.2 Work Covered by Contract Documents

- .1 Work of this Contract comprises project **R.089637.001** the **Demolition of the Port Burwell Automation Building** at the Port Burwell Small Craft Harbour, Port Burwell, Ontario for Public Services and Procurement Canada (PSPC) as indicated on the drawings and specifications.
- .2 The building measures approximately 30 m2. It is fenced inside a rectangular shaped parcel of land having an area of approximately 74 m2. The Automation Building is under the jurisdiction of Fisheries and Oceans Canada (DFO) and Canadian Coast Guard (CCG).
- .3 The building was constructed in the mid-1970s. The building is currently vacant but was recently used as a warehouse, workshop, and for storage.
- .4 The scope includes the complete demolition and disposal of the existing building and associated structures and utilities including all concrete foundations and vegetation within the defined site area. The scope further includes the complete removal and clean-up of existing scrub bush, trees, vegetation, and debris and the general cleanup of the property within the defined site area.
- .5 The existing chain link fence surrounding the property is to remain. The Contractor shall remove parts of the existing fence and gate as necessary to permit access to the site for demolition equipment, and shall reinstate the fence complete on completion of the work.
- .6 Work includes but is not limited to, the following:
  - .1 Locate, disconnect and remove general utilities and services.
  - .2 Clearing and grubbing of all vegetation on the property.
  - .3 Demolition, removal and disposal of all designated substances and hazardous materials in accordance with the requirements of regulatory authorities. Hazardous materials abatement and disposal shall be in accordance with the Hazardous Materials Abatement Specifications – Port Burwell Automation Building dated October 23, 2017, and prepared by Cambium Inc., and attached as Appendix A to this specification.
  - .4 Demolition, removal and disposal of one (1) building on site including complete removal of the foundations to a depth of 1.3 metres below grade.
  - .5 Demolition, removal and disposal of one concrete tank support pad including complete removal

- of foundations.
  - .6 Excavating, backfilling, rough grading and site restoration including sedimentation control prior to commencement of the Work.
  - .7 General cleanup for the whole property.
  - .8 The work shall include the provision of all labour, material, equipment, machinery and tools required to perform the work.
- 1.3 Location of Site
- .1 The Work of this Contract is located at the Port Burwell Small Craft Harbour, Port Burwell, Ontario.
  - .2 Address: Front Lot 11, Con. I, Township of Houghton.
- 1.1 Metric Project
- .1 This project is to be based on The International System of Units (SI). Measurements are expressed in metric (SI) units.
- 1.2 Site Access
- .1 Access to the site to be arranged by the Departmental Representative.
- 1.3 Contractor Traffic Route
- .1 Maintain fire department access to the site.
- 1.4 Work Sequence
- .1 Work continuously.
- 1.5 Contractors Use of Premises
- .1 Contractor has unrestricted use of site until Substantial Performance.
- 1.6 References and Codes
- .1 Perform Work in accordance with the National Building Code, 2015 (NBC), Ontario Building Code, 2012 (OBC), National Fire Code of Canada, 2015 (NFC), the Canadian Electrical Code CSA C22.1-18, the Ontario Ministry of Labour Occupational Health and Safety Act for Construction Projects, and other codes of federal, provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
  - .2 Meet or exceed requirements of:
    - .1 Contract documents.
    - .2 Specified standards, codes and referenced documents.
- 1.7 Engineer Design
- .1 Where specifications require work to be designed by an engineer, engage an engineer licensed in the Province of Ontario to design such work.
- 1.8 Hazardous Material Discovery

- .1 Refer to Environmental Property Assessment, Port Burwell Automation Building at the Port Burwell Small Craft Harbour, Port Burwell, Ontario prepared by SNC- Lavalin and dated March, 2015 and the Hazardous Materials Abatement Specifications – Port Burwell Automation Building prepared by Cambium Inc., (Appendix A) for known hazardous materials and designated substances within the Port Burwell Automation Building.
- .2 Should any other material not identified in the above referenced report material and resembling asbestos or other hazardous substances be encountered in course of demolition work, immediately stop work and notify the Departmental Representative. Refer to Section 01 41 00.

1.9 Verification

- .1 All dimensions shall be verified on site, and all necessary modifications and adjustments shall be made as necessary to suit.

1.10 Building Smoking Environment

- .1 Smoking is prohibited on the property.

1.11 Special Conditions

- .1 Species at Risk (SAR): Conform to the requirements of the Federal Species at Risk Act (SARA) and the Province of Ontario Endangered Species Act (ESA). The Departmental Representative will engage a qualified biologist to inspect the site prior to commencement of the Work and shall ensure that there are no SAR within the work area. Should the Contractor encounter any SAR during the course of the Work, he shall stop work and contact the Departmental Representative immediately.

1.12 Site Security

- .1 Take whatever measures are necessary to secure the building and site from unauthorized access, theft and vandalism.

1.13 Protection of Drawings

- .1 Electronic documents may not be forwarded to others, transmitted, downloaded or reproduced in any format, whether print or electronic, without the express, written permission of the Departmental Representative.
- .2 Drawings, specifications and other contract related documents which are posted on Contractor controlled websites for access by sub-trades and suppliers, shall be posted only on password protected and secure websites approved by the Departmental Representative to limit access to those with an expressed interest in the Project.
- .3 Provide Departmental Representative with access to such websites as noted above.

PART 2 PRODUCTS

3.1 Not Used

- .1 Not used

PART 3 EXECUTION

3.2 Not Used

.1 Not used

End of Section



## PART 1 GENERAL

### 1.1 Definitions

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

### 1.2 Requirements

- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Limit activity durations to maximum of approximately [10] working days, to allow for progress reporting.
- .4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Certificate of Substantial Performance and Certificate of Completion as defined times of completion are of essence of this contract.

### 1.3 Submittals

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

- .2 Submit to Departmental Representative within 10 working days of Award of Contract Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.
- .3 Submit Project Schedule to Departmental Representative within 5 working days of receipt of acceptance of Master Plan.

1.4 Project Milestones

- .1 Project milestones form interim targets for Project Schedule.
  - .1 Site Clearing and excavation completed within 20 working days of Award of Contract date.
  - .2 Structure Demolition completed within 35 working days of Award of Contract date.
  - .3 Certificate of Substantial Performance within 45 working days of Award of Contract date.

1.5 Master Plan

- .1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).
- .2 Departmental Representative will review and return revised schedules within 5 working days.
- .3 Revise impractical schedule and resubmit within 5 working days.
- .4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

1.6 Project Schedule

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:
  - .1 Award.
  - .2 Permits.
  - .3 Mobilization.
  - .4 Access road
  - .5 Site clearing.
  - .6 Excavation.
  - .7 Demolition.
  - .8 Backfill.

1.7 Project Schedule Reporting

- .1 Update Project Schedule on bi-weekly basis reflecting activity changes and completions, as well as activities in progress.
- .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

1.8 Project Meetings

- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with

projected start or completion dates later than current approved dates shown on baseline schedule.

PART 2 PRODUCTS

2.1 Not Used

.1 Not used

PART 3 EXECUTION

3.1 Not Used

.1 Not used

End of Section

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## PART 1 GENERAL

### 1.1 Section Includes

- .1 Administrative.
- .2 Shop Drawings and Product Data.
- .3 Progress Photographs.
- .4 Certificates and Transcripts.

### 1.2 Administrative

- .1 Submit to 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 Work affected by submittal shall not proceed until review is complete.
- .3 Present submittals in metric units.
- .4 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated 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.
- .5 Notify Departmental Representative in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .6 Verify field measurements and affected adjacent work are coordinated.
- .7 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review.
- .8 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative's review.
- .9 Keep one reviewed copy of each submission on site.

### 1.3 Shop Drawings and Product Data

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided to illustrate details of a portion of Work.
- .2 Coordinate each submission with requirements of work and Contract Documents. Individual submissions will not be reviewed until all related information is available.
- .3 Submit shop drawings bearing stamp and signature of qualified professional Engineer registered or licensed in the Province of Ontario where required by the individual specification sections. Each submittal and each resubmittal must bear the stamp of the Engineer
- .4 Indicate materials, methods of construction, explanatory notes and other information necessary for completion of Work.

- 
- .5 Allow ten (10) days for Departmental Representative's review of each submission.
  - .6 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
  - .7 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
  - .8 Accompany submissions with transmittal letter containing:
    - .1 Date.
    - .2 Project title and number.
    - .3 Contractor's name and address.
    - .4 Other pertinent data.
  - .9 Submissions shall include:
    - .1 Date and revision dates.
    - .2 Project title and number.
    - .3 Name and address of:
      - .1 Subcontractor.
      - .2 Supplier.
      - .3 Manufacturer.
    - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
    - .5 Details of appropriate portions of Work as applicable:
      - .1 Layout, showing dimensions, including identified field dimensions, and clearances.
      - .2 Standards.
  - .10 After Departmental Representative's review, distribute copies.
  - .11 Submit one electronic copy in PDF format of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
  - .12 Submit electronic copy in PDF format of product data sheets or brochures for requirements requested in Specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
  - .13 Delete information not applicable to project.
  - .14 Supplement standard information to provide details applicable to project.
  - .15 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
  - .16 The review of shop drawings by the Departmental Representative is for sole purpose of ascertaining conformance with general concept.
    - .1 This review shall not mean that the Departmental Representative approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting

same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.

- .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

#### 1.4 Progress Photographs

- .1 Progress photographs to be electronically formatted and labelled as to location and view.
- .2 Submit electronic copy colour digital photography in jpg format, standard resolution monthly with progress statement and as directed by Departmental Representative.
- .3 Project identification: name and number of project and date of exposure indicated.
- .4 Number of viewpoints: 2 locations.
  - .1 Viewpoints and their location as determined by Departmental Representative.
- .5 Frequency of photographic documentation: monthly.

#### 1.5 Certificates and Transcripts

- .1 Immediately after award of Contract, Submit Workplace Safety and Insurance Board Experience Report.

### PART 2 PRODUCTS

#### 2.1 Not Used

- .1 Not used

### PART 3 EXECUTION

#### 3.1 Not Used

- .1 Not used

End of Section

## PART 1 GENERAL

### 1.1 References

- .1 Canadian Standards Association (CSA)
  - .1 CSA S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures.
- .2 National Building Code 2015 (NBC):
  - .1 NBC 2015, Division B, Part 8 Safety Measures at Construction and Demolition Sites.
- .3 Province of Ontario:
  - .1 Occupational Health and Safety Act Revised Statutes of Ontario 1990, Chapter O.1 as amended, and Regulations for Construction Projects, O. Reg. 213/91 as amended.
  - .2 O. Reg. 490/09, Designated Substances.
  - .3 Workplace Safety and Insurance Act, 1997.
  - .4 Municipal statutes and authorities.

### 1.2 Action and Informational Submittals

- .1 Make submittals in accordance with Section 01 33 00.
- .2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
  - .1 Results of site specific safety hazard assessment.
  - .2 Results of safety and health risk or hazard analysis for site tasks and operation.
  - .3 Measures and controls to be implemented to address identified safety hazards and risks.
- .3 Provide a Fire Safety Plan, specific to the work location.
- .4 Contractor's and Sub-contractors' Safety Communication Plan.
- .5 Contingency and Emergency Response Plan addressing standard operating procedures specific to the project site to be implemented during emergency situations.
- .6 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 10 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 5 days after receipt of comments from Departmental Representative.
- .7 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.
- .8 Submit names of personnel and alternates responsible for site safety and health.
- .9 Submit records of Contractor's Health and Safety meetings when requested.
- .10 Submit 2 copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative weekly.
- .11 Submit copies of orders, directions or reports issued by health and safety inspectors of the authorities having jurisdiction.
- .12 Submit copies of incident and accident reports.

.13 Submit Material Safety Data Sheets (MSDS).

.14 Submit Workplace Safety and Insurance Board (WSIB) - Experience Rating Report.

1.3 Filing of Notice

.1 File Notice of Project with Provincial authorities prior to commencement of Work.

1.4 Work Permit

.1 Obtain building permits related to project prior to commencement of Work.

1.5 Safety Assessment

.1 Perform site specific safety hazard assessment related to project.

1.6 Meetings

.1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.

1.7 Regulatory Requirements

.1 Comply with the Acts and regulations of the Province of Ontario.

.2 Comply with specified standards and regulations to ensure safe operations at site.

1.8 Project Site Conditions

.1 Work at site will involve contact with:

- .1 Silica in concrete and concrete block.
- .2 Mercury in fluorescent light tubes.
- .3 Asbestos in transite wall and ceiling panels, door insulation
- .4 Lead in paint.
- .5 PCBs in light ballasts.

1.9 General Requirements

.1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.

.2 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns either accepting or requesting improvements.

.3 Relief from or substitution for any portion or provision of minimum Health and Safety standards specified herein or reviewed site-specific Health and Safety Plan shall be submitted to Departmental Representative in writing.



1.10 Compliance Requirements

- .1 Comply with Ontario Occupational Health and Safety Act, R.S.O. 1990 Chapter O.1, as amended.

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.
- .3 Where applicable the Contractor shall be designated "Constructor", as defined by Occupational Health and Safety Act and Regulations for Construction Projects for the Province of Ontario.

1.12 Unforeseen Hazards

- .1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, immediately stop work and advise Departmental Representative verbally and in writing.
- .2 Follow procedures in place for Employees Right to Refuse Work as specified in the Occupational Health and Safety Act for the Province of Ontario.

1.13 Health and Safety Coordinator

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Coordinator. Health and Safety Coordinator must:
  - .1 Have site-related working experience specific to activities associated abatement of lead and asbestos containing materials.
  - .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.

1.14 Posting of Documents

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province of Ontario, and in consultation with Departmental Representative.
  - .1 Contractor's Safety Policy.
  - .2 Constructor's Name.
  - .3 Notice of Project.
  - .4 Name, trade, and employer of Health and Safety Representative or Joint Health and Safety Committee members (if applicable).

- .5 Ministry of Labour Orders and reports.
- .6 Occupational Health and Safety Act and Regulations for Construction Projects for Province of Ontario.
- .7 Address and phone number of nearest Ministry of Labour office.
- .8 Material Safety Data Sheets.
- .9 Written Emergency Response Plan.
- .10 Site Specific Safety Plan.
- .11 Valid certificate of first aider on duty.
- .12 WSIB "In Case of Injury at Work" poster.
- .13 Location of toilet and cleanup facilities.

1.15 Correction of Non-Compliance

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

1.16 Blasting

- .1 Blasting or other use of explosives is not permitted.

1.17 Work Stoppage

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.
- .2 Assign responsibility and obligation to Health and Safety Coordinator to stop or start Work when, at Health and Safety Coordinator's discretion, it is necessary or advisable for reasons of health or safety. Departmental Representative may also stop Work for health and safety considerations.

PART 2 PRODUCTS

3.1 Not Used

- .1 Not used

PART 3 EXECUTION

3.2 Not Used

- .1 Not used

End of Section

## PART 1 GENERAL

### 1.1 Section Includes

- .1 Administrative.
- .2 Fires.
- .3 Disposal of Wastes.
- .4 Drainage.
- .5 Protection of Water Quality
- .6 Site Clearing and Plant Protection.
- .7 Pollution Control.
- .8 Unanticipated Soil Contamination.
- .9 Species at Risk.

### 1.2 Related Sections

- .1 Section 02 41 13            Structure Demolition
- .2 Section 31 10 00           Site Clearing
- .3 Section 31 23 10           Excavating, Trenching and Backfilling

### 1.3 References

- .1 Statutes of Canada 1999 Chapter 33. Canadian Environmental Protection Act 1999.
  - .1 SOR/2003-289. Federal Halocarbon Regulations, 2003.
  - .2 Transportation of Dangerous Goods Act, 1992 (1992, c. 34)
- .2 OPSS 805 Construction Specification for Temporary Erosion and Sediment Control Measures, November, 2015.
- .3 U.S. Environmental Protection Agency (EPA)/Office of Water
  - .1 EPA 832/R-92-005-92, Storm Water Management for Construction Activities, Chapter 3.
- .4 Canadian Council of Ministers of the Environment (CCME), Environment Quality Guidelines.
- .5 Environment Canada,
  - .1 Section 36(3) of the Fisheries Act
  - .2 Migratory Birds Convention Act
- .6 The Federal Policy on Wetland Conservation.
- .7 Any Provincial Standards and Federal requirements.

### 1.4 Submittals

- .1 Provide submittals in accordance with Section 01 33 00.
- .2 Prior to commencing construction activities or delivery of materials to site, provide Environmental Protection Plan for review by Departmental Representative.
  - .1 Ensure Environmental Protection Plan includes comprehensive overview of known or potential environmental issues to be addressed during construction.
  - .2 Address topics at level of detail commensurate with environmental issue and required construction tasks.
  - .3 Include in Environmental Protection Plan:
    - .1 Names of persons responsible for ensuring adherence to Environmental Protection Plan.
    - .2 Names and qualification of persons responsible for manifesting hazardous waste to be removed from site, and the name and location of the wastes destination (disposal facility).
    - .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 identifying 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, EPA 832/R-92-005, Chapter 3 requirements.
- .6 Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on site.
- .7 Traffic Control Plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Ensure plans include measures to minimize amount of mud transported onto paved public roads by vehicles or runoff.
- .8 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use. Ensure plan includes measures for marking limits of use areas and methods for protection of features to be preserved within authorized work areas.
- .9 Spill Control Plan including procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.
- .10 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
- .11 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, are contained on project site.
- .12 Contaminant Prevention Plan identifying potentially hazardous substances to be used on job site; intended actions to prevent introduction of such materials into air, water, or ground; and detailing provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.
- .13 Historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands.

#### 1.5 Administrative

- .1 Comply with all federal, provincial, and municipal regulatory requirements and guidelines for environmental protection and natural resource conservation, including those referenced above.
- .2 The Work Site is subject to inspection by the Departmental Representative, without prior notice.
- .3 Failure to comply with environmental requirements may result in a stop work order or assessment of damages commensurate with repair of damage.
- .4 It is the Contractor's responsibility to be aware of environmental requirements and the best management practices and pollution control measures necessary to meet them.
- .5 It is the Contractor's responsibility to obtain and abide by permits, licenses and compliance certificates at appropriate times and frequencies as required by the authorities having jurisdiction.
- .6 All hazardous materials are to be stored with secondary containment

#### 1.6 Fires

- .1 Fires and burning of rubbish on site not permitted.

1.7 Disposal of Wastes

- .1 Refer to Section 01 74 20.

1.8 Drainage

- .1 Provide Erosion and Sediment Control Plan identifying type and location of erosion and sediment controls provided. Ensure plan includes 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, EPA 832/R-92-005, Chapter 3 requirements.
- .2 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
- .3 Do not pump water containing deleterious substances into waterways, sewer or drainage systems.
- .4 Protect storm drains against entry by sediment, debris, oil, or chemicals.
- .5 Control disposal or runoff of water containing deleterious substances or other harmful substances in accordance with local authority requirements.

1.9 Protection of Water Quality

- .1 No waste or surplus organic material including topsoil is to be stored or disposed of within 30 metres of any watercourses. Run-off from excavation piles will not be permitted to drain directly into watercourses. Where this measure is not sufficient or feasible to control sediment entering the watercourses, sedimentation traps or geo-textile coverage will be required.
- .2 If de-watering is required, the water shall be pumped into a sedimentation pond or diffused onto vegetated areas a minimum of 30 metres from any watercourses and not pumped directly into the watercourses.
- .3 Provide all de-watering and sedimentation control required to properly complete the work of this contract.
- .4 Supply, install and maintain silt/sediment control fencing along the edge of the site to intercept construction runoff silt, to the satisfaction of the Departmental Representative.

1.10 Site Clearing and Plant Protection

- .1 Protect trees and plants on adjacent properties.
- .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 m.
- .3 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage.
- .4 Restrict tree removal to areas indicated.
- .5 Prevent unnecessary disturbance of top soil and underlying soil from vehicles and heavy equipment.

1.11 Pollution Control

- .1 Maintain, inspect, and repair temporary erosion and pollution control features installed under this contract on a weekly basis. Submit inspection logs to the Departmental Representative when requested.
- .2 Control emissions from equipment and plant to conform to federal, provincial, and municipal requirements.
- .3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.
- .4 Have appropriate emergency spill response equipment and rapid clean-up kit on site located adjacent to hazardous materials storage area. Provide personal protective equipment required for clean-up.
- .5 Take all measures necessary to prevent material and mud tracking on adjacent roads and streets.
- .6 Use mechanical sweepers as often as necessary to keep adjacent roads and streets clean of material and mud that is deposited from this project.
- .7 Spills or discharges of pollutants or contaminants under the control of the Contractor, and spills or discharges of pollutants or contaminants that are a result of the Contractor's operations that cause or are likely to cause adverse effects shall forthwith be reported to the Departmental Representative. Such spills or discharges and their adverse effects shall be as defined in the Environmental Protection Act R.S.O. 1999.
- .8 All spills or discharges of liquid, other than accumulated rain water, from luminaries, internally illuminated signs, lamps, and liquid type transformers under the control of the Contractor, and all spills or discharges from this equipment that are a result of the Contractor's operations shall, unless otherwise indicated in the Contract, be assumed to contain PCB's and shall forthwith be reported to the Departmental Representative.
- .9 This reporting will not relieve the Contractor of his legislated responsibilities regarding such spills or discharges.

1.12 Unanticipated Soil Contamination

- .1 Should unanticipated soil contamination be discovered:
  - .1 Stop work, and assess the situation for safety.
  - .2 If situation does not appear to be safe, evacuate workers from area.
  - .3 If safe to do so, take immediate steps to control any spread of contamination, in accordance with Contractor's spill prevention and response plan.
  - .4 Immediately contact the Departmental Representative.

1.13 Species at Risk

- .1 Species at Risk (SAR) have been identified as being potentially on site. Conform to the requirements of the Federal Species at Risk Act (SARA) and the Province of Ontario Endangered Species Act (ESA). The Departmental Representative will engage a qualified biologist to inspect the site prior to commencement of the Work and shall ensure that there are no SAR within the work area. Should the Contractor encounter any SAR during the course of the Work, he shall stop work and contact the Departmental Representative immediately.

## PART 2 PRODUCTS

### 2.1 Not Used

- .1 Not used

## PART 3 EXECUTION

### 3.1 Cleaning

- .1 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.
- .2 Perform final decontamination of construction facilities, equipment and materials which may have come in contact with potentially contaminated materials prior to removal from site.
  - .1 Perform decontamination as specified and to satisfaction of Departmental Representative and in accordance with regulatory requirements.

### 3.2 Mitigation of Impacts

- .1 Potential environmental impacts shall be mitigated as follows: Potential impacts of this project are associated with constructed disturbances. It is reasonable to conclude that with appropriate mitigation in place and good work practices, impact will be of short duration and the potential zone of influence will be confined to the immediate vicinity of the work area.
- .2 Ensure that a copy of the environmental requirements will be readily available on site for inspection and reference purposes during the construction phase of the project, and that all contractors and their agents will be made aware of and respect the following requirements where applicable to their direct involvement in the work.
- .3 Machinery must be checked for leakage of lubricants or fuel and must be in good working order. Refueling must be done at least 30 m from any water body and on an impermeable surface. Basic petroleum spill clean-up equipment should be on-site. All spills or leaks should be promptly contained, cleaned up and reported to the 24-hour environmental emergencies reporting system.
- .4 Fuel level must be inspected on a daily basis to ensure there is no leakage to the surrounding environment.
- .5 Schedule Work to avoid periods of heavy precipitation. Erosion control structures are to be used, as appropriate, to prevent erosion and release of sediment and/or sediment laden water during the construction phase. These structures are to be left in place until all exposed soils are stabilized.
- .6 Materials used must be clean and non-toxic (i.e., free of fuel, oil, grease and /or any other contaminants).
- .7 All construction waste material will be disposed of in a provincially approved manner.
- .8 Maintain equipment in proper running order to prevent leaking or spilling of potentially hazardous or toxic products. This includes hydraulic fluid, diesel, gasoline and other petroleum products.
- .9 The exposed soil area must be minimized by limiting the area that is exposed at one time and by limiting the time that any one area is exposed. All stockpiled soil must be covered and/or dyked to prevent erosion and release of sediment laden water.

- .10 All waste materials will be disposed of according to Provincial Waste Management Regulations so as to mitigate potential effects generated by leachate entering soils.
- .11 Existing potentially hazardous materials are listed in abatement specifications by Cambium Inc.
- .12 All other material except those identified as existing potentially hazardous materials can be disposed of at local Construction & Demolition Waste facilities.
- .13 Construction equipment must be fitted with standard and well- maintained noise suppression devices. Construction activities must respect appropriate time restriction and use smaller, less disturbing equipment where possible.
- .14 Appropriate dust suppression methods are to be employed when required. Determine locations where water is to be applied, the amount of water to be applied, and the times at which it shall be applied. Waste oil is not to be used for dust control under any circumstances.
- .15 Engines must not be allowed to idle between work periods.
- .16 All machinery must be well muffled. If necessary, trucks may be required to avoid the use of "hammer" braking along specific sections of the route.
- .17 Adherence is required to the regulations set out by the Migratory Birds Convention Act.
- .18 Contractors must ensure that food scraps and garbage are not left at the work site.
- .19 Construction activities will be carried out during times acceptable to local authorities. Construction will be carried out during daylight hours to avoid disturbance in the area.
- .20 All vehicles must be free of external contamination prior to leaving the site.
- .21 Care shall be taken to ensure the vehicles are clean of debris and soil. Tracking of debris and mud along the travel ways is not acceptable.

End of Section



## PART 1 GENERAL

### 1.1 Section Includes

- .1 References.
- .2 Departmental Representative's Regulations.
- .3 Designated Substances.
- .4 Hazardous Materials.
- .5 Access for Inspection and Testing.
- .6 Other Regulatory Requirements.

### 1.2 References

- .1 Perform Work in accordance with the National Building Code of Canada 2015, the Ontario Building Code Act, O. Reg. 332/12, the Ontario Building Code (OBC), 2012 including all Supplements and other codes of provincial or local regulation provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2 Complete demolition work in accordance with CSA S350-M1980 (R2003) - Code of Practice for Safety in Demolition of Structures.
- .3 Where a material is designated in the Contract Documents for a certain application, unless otherwise specified, that material shall conform to standards designated in the Code. Similarly, unless otherwise specified, installation methods and standards of workmanship shall also conform to standards invoked by the aforementioned Code.
- .4 Meet or exceed requirements of:
  - .1 Contract documents.
  - .2 Specified standards, codes and referenced documents.
  - .3 Manufacturer's instructions.
- .5 Where requirements of Contract Documents exceed Code requirements provide such additional requirements.

### 1.3 Hazardous Material Discovery

- .1 Known designated substances are identified in the Environmental Property Assessment, Port Burwell Automation Building at the Port Burwell Small Craft Harbour, Port Burwell, Ontario prepared by SNC- Lavalin and dated March, 2015.
- .2 Stop work immediately when material resembling asbestos, lead paint, PCB's mould or any other designated substance which is not identified in the Designated Substance Report is encountered during the course of the work. Notify Departmental Representative and Departmental Representative immediately.
- .3 The Departmental Representative will arrange for independent testing of suspected designated substances and removal of such substances encountered on the site during the course of the work which are not identified in the Designated Substance Report.

### 1.4 Access for Inspection and Testing

- .1 Cooperate fully with and provide assistance to, all outside authorities including Building Inspectors, utilities, testing agencies and Departmental Representatives, with the inspection of the Work.

1.5 Other Regulatory Requirements

- .1 Conform to the requirements of the Ontario Ministry of Transportation, Regional and Local authorities regarding transportation of materials.
- .2 Obtain required road occupancy permits.
- .3 Pay any required roadway damage deposits required by the local municipality.
- .4 Conform to the requirements of the Ontario Ministry of the Environment.
- .5 Conform to the requirements of Fisheries and Oceans Canada.
- .6 Conform to the requirements of the Ontario Ministry of Labour.
- .7 Conform to the requirements of the local Conservation Authority.
- .8 Conform to all applicable local by-laws, regulations and ordinances.

PART 2 PRODUCTS

2.1 Not Used

- .1 Not used

PART 3 EXECUTION

3.1 Not Used

- .1 Not used

End of Section

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## PART 1 GENERAL

### 1.1 Section Includes

- .1 Inspection.
- .2 Independent Inspection Agencies.
- .3 Access to Work.
- .4 Procedures.
- .5 Rejected Work.
- .6 Reports.

### 1.2 Inspection

- .1 Allow Departmental Representative access to Work.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

### 1.3 Independent Inspection Agencies

- .1 Independent Inspection/Testing Agencies will be engaged by Departmental 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 Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and re-inspection.

### 1.4 Procedures

- .1 Notify Departmental Representative 48 hours in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site.

### 1.5 Reports

- .1 Submit electronic pdf format inspection and test reports to Departmental Representative.

## PART 2 PRODUCTS

### 2.1 Not Used

.1 Not used

PART 3 EXECUTION

3.1 Not Used

.1 Not used

End of Section

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PART 1 GENERAL

1.1 Section Includes

- .1 Installation and Removal.
- .2 Dewatering.
- .3 Water Supply.
- .4 Temporary Heating and Ventilation.
- .5 Temporary Power and Light.
- .6 Temporary Communication Facilities.

1.2 Installation and Removal

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

1.3 Dewatering

- .1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water. Refer to Section 01 41 00.

1.4 Water Supply

- .1 Provide continuous supply of potable water for construction use.
- .2 Water shall be potable and shall meet the requirements of the technical sections of the specifications.

1.5 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 flameless type. Solid fuel salamanders are not permitted, unless prior approval is given by the Departmental Representative.
- .3 Provide temporary heat and ventilation in enclosed areas as required to:
  - .1 Facilitate progress of Work.
  - .2 Protect Work against dampness and cold.
  - .3 Prevent moisture condensation on surfaces.
  - .4 Provide adequate ventilation to meet health regulations for safe working environment.
- .4 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 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.

- .5 Maintain strict supervision of operation of temporary heating and ventilating equipment to:
  - .1 Conform to applicable codes and standards.
  - .2 Enforce safe practices.
  - .3 Prevent abuse of services.
  - .4 Vent direct fired combustion units to outside.
- .6 Be responsible for damage due to failure in providing adequate heat and protection during construction.

1.6 Temporary Power and Light

- .1 Provide and pay for all temporary power during construction.
- .2 Arrange for connection with utility company. Pay all costs for installation, maintenance and removal.
- .3 Provide and maintain temporary lighting throughout project. Lighting levels shall be sufficient to complete work including inspections. Provide minimum lighting levels of 400 lux at work areas. Lighting levels at floors and stairs not within work areas shall be not less than 160 lux at all times during construction activity.
- .4 All equipment used shall be CSA approved.
- .5 Wiring and method of installation shall conform to local power requirements and shall be reviewed by a licensed inspector prior to use.

1.7 Temporary Communication Facilities

- .1 Provide and pay for temporary telephone, fax, data and equipment necessary for own use.

PART 2 PRODUCTS

2.1 Not Used

- .1 Not used

PART 3 EXECUTION

3.1 Not Used

- .1 Not used

End of Section

## PART 1 GENERAL

### 1.1 Section Includes

- .1 Construction aids.
- .2 Site storage.
- .3 Parking.
- .4 Construction access.
- .5 Offices.
- .6 Equipment and material storage.
- .7 Sanitary facilities.
- .8 Signage.
- .9 Shoring.

### 1.2 References

- .1 Canadian Standards Association (CSA International)
  - .1 CAN/CSA-Z321-96 (R2006), Signs and Symbols for the Workplace

### 1.3 Installation and Removal

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

### 1.4 Hoisting

- .1 Provide, operate and maintain hoists and cranes required for moving of workers, materials and equipment.
- .2 Hoists and cranes shall be operated by qualified operator.

### 1.5 Site Storage/Loading

- .1 Do not unreasonably encumber premises with products.
- .2 Do not load or permit to load any part of Work with a weight or force that will endanger the Work.

### 1.6 Construction Parking

- .1 Parking will be permitted adjacent to the site at areas designated by the Departmental Representative provided it does not disrupt performance of Work or ongoing Departmental Representatives operations.
- .2 Provide and maintain adequate access to project site.

### 1.7 Construction Access

- .1 Clear site access and construct access and haul roads necessary and where directed by the Departmental Representative. Level access road and provide and maintain suitable access mats using Duradeck HDPE heavy duty plastic matting, plywood matting or geofibre.
- .2 Maintain access road for duration of Contract.

- .3 Upon completion of the work, remove temporary access roads and reinstate site.

#### 1.8 Offices

- .1 Contractor may provide their own office as necessary and subject to site constraints.

#### 1.9 Equipment, Tool and Material Storage

- .1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

#### 1.10 Designated Substances

- .1 Provide all construction facilities required for abatement of designated substances as described in the Hazardous Materials Abatement Specifications – Port Burwell Automation Building prepared by Cambium Inc., and attached as Appendix A to this specification.

#### 1.11 Sanitary Facilities

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.
- .3 Provide a worker washing facility at the entrance to the work area as required and as described in the Hazardous Materials Abatement Specifications – Port Burwell Automation Building prepared by Cambium Inc., and attached as Appendix A to this specification.

#### 1.12 Construction Signage

- .1 Signs and notices for safety and instruction shall be in English. Graphic symbols shall conform to CAN/CSA-Z321-96 (R2006).
- .2 Post "Construction Zone" signage outside barrier and entrance to all work areas.
- .3 Maintain approved signs and notices in good condition for duration of project, and dispose of off-site on completion of project.
- .4 Install signage to direct site traffic and deliveries to the Construction work areas.
- .5 Provide warning signage as described in the Hazardous Materials Abatement Specifications – Port Burwell Automation Building prepared by Cambium Inc., and attached as Appendix A to this specification.

### PART 2 PRODUCTS

#### 2.1 Not Used

Not used



PART 3 EXECUTION

3.1 Not Used

.1 Not used

End of Section

## PART 1 GENERAL

### 1.1 Section Includes

- .1 Barriers and enclosures.

### 1.2 Installation and Removal

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove from site all such work after use unless indicated to remain.

### 1.3 Site Fencing

- .1 The existing chain link fence surrounding the property is to remain.
- .2 Remove parts of existing fence and gate as necessary for demolition equipment access. Secure opening with a suitable temporary fencing and gate to prevent unauthorized access to the Work area.
- .3 Upon completion of demolition, reinstate existing fence and gate to match the existing fence construction.
- .4 Maintain access to property for use by emergency response vehicles.
- .5 Maintain fence in good repair

### 1.4 Guard Rails and Barricades

- .1 Provide as required by governing authorities.

### 1.5 Protection for Off Site and Public Property

- .1 Protect surrounding private and public property from damage during performance of Work.
- .2 Be responsible for damage incurred

## PART 2 PRODUCTS

### 2.1 Not Used

- .1 Not used

## PART 3 EXECUTION

### 3.1 Not Used

- .1 Not used

End of Section

## PART 1 GENERAL

### 1.1 Section Includes

- .1 Field engineering and survey services.

### 1.2 Survey Reference Points

- .1 Locate, confirm and protect control points prior to starting site work. Preserve permanent reference points during construction.
- .2 Make no changes or relocations without prior written notice to Departmental Representative.

### 1.3 Survey Requirements

- .1 Establish two permanent bench marks on site, referenced to established bench marks by survey control points. Record locations, with horizontal and vertical data in Project Record Documents.
- .2 Establish lines and levels, locate and lay out, by instrumentation.
- .3 Stake for grading and fill placement.

### 1.4 Existing Services

- .1 Before commencing work, establish location and extent of service lines in area of Work and notify Departmental Representative of findings. The Contractor is responsible for coordination of all utility locates.
- .2 Remove abandoned service lines at the fence line. Cap or otherwise seal lines at cut off points as directed by Departmental Representative.
- .3 Where Work involves breaking into or connecting to existing services, carry out work at times directed by authorities having jurisdiction, with minimum of disturbance to building occupants, pedestrian and vehicular traffic.
- .4 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.

### 1.5 Records

- .1 Record locations of maintained and abandoned service lines.

### 1.6 Submittals

- .1 Make submittals in accordance with Section 01 33 00.
- .2 On request of Departmental Representative, submit documentation to verify accuracy of field engineering work.

### 1.7 Subsurface Conditions

- .1 Promptly notify Departmental Representative in writing if subsurface conditions at Place of Work differ materially from those indicated in Contract Documents, or a reasonable assumption of

probable conditions based thereon.

- .2 After prompt investigation, should Departmental Representative determine that conditions do differ materially, instructions will be issued for changes in the Work.

## PART 2 PRODUCTS

### 2.1 Not Used

- .1 Not used

## PART 3 EXECUTION

### 3.1 Not Used

- .1 Not used

End of Section

## PART 1 GENERAL

### 1.1 Construction/Demolition Waste

- .1 Carefully deconstruct and source separate materials/equipment and divert, from Construction and Demolition waste destined for landfill to maximum extent possible. Target for this project is 60% diversion from landfill. Reuse, recycle, compost, anaerobic digest or sell material for reuse except where indicated otherwise. On site sales are not permitted.
- .2 Source separate waste and maintain waste audits in accordance with the Environmental Protection Act, Ontario Regulation 102/94 and Ontario Regulation 103/94.
  - .1 Provide facilities for collection, handling and storage of source separated wastes.
  - .2 Source separate the following waste:
    - .1 Concrete block and Portland cement concrete.
    - .2 Corrugated cardboard.
    - .3 Wood, not including painted or treated wood or laminated wood.
    - .4 Steel.
- .3 Submit a waste reduction workplan indicating the materials and quantities of material that will be recycled and diverted from landfill
  - .1 Indicate how material being removed from the site will be reused, recycled, composted or anaerobically digested
- .4 Submit proof that all waste is being disposed of at a licensed land fill site or waste transfer site. A copy of the disposal/waste transfer site's license and a letter verifying that said landfill site will accept the waste must be supplied to Departmental Representative prior to removal of waste from the demolition site.

### 1.2 Waste Processing Sites

- .1 Province of Ontario.
  - .1 Ministry of Environment and Energy, 135 St. Clair Avenue West, Toronto, ON, M4V 1P5.
  - .2 Telephone: 800-565-4923 or 416-323-4321.
  - .3 Fax: 416-323-4682.
- .2 Recycling Council of Ontario: 215 Spadina Avenue, #225, Toronto, ON, M5T 2C7.
  - .1 Telephone: 416-657-2797
  - .2 Fax: 416-960-8053
  - .3 Email: rco@rco.on.ca.
  - .4 Internet: <http://www.rco.on.ca/>.

## PART 2 PRODUCTS

### 2.1 Not Used

- .1 Not used

### PART 3 EXECUTION

#### 3.1 Canadian Governmental Departments Chief Responsibility for the Environment

##### .1 Government Chief Responsibility for the Environment:

Province	Address	General Inquiries	Fax
Ontario	Ministry of Environment and Energy	(416) 323-4321	(416) 323-4682
	135 St. Clair Avenue West Toronto, ON M4V 1P5	9800) 565-4923	
	Environment Canada	(416) 734-4494	
	Toronto, ON		

End of Section

## PART 1 GENERAL

### 1.1 Section Includes

- .1 Administrative procedures preceding preliminary and final inspections of Work.

### 1.2 Related Work

- .1 Section 01 78 00 Closeout Submittals

### 1.3 Inspection and Declaration

- .1 Contractor's Inspection: The Contractor shall conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents. Submit duplicate copies of the deficiency list to the Departmental Representative and Departmental Representative.
  - .1 Notify Departmental Representative in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
  - .2 Request Departmental Representative's review.
- .2 Departmental Representative's Review: Departmental Representative and Contractor will perform review of Work to identify obvious defects or deficiencies. Contractor shall correct Work accordingly.
- .3 Completion: submit written certificate that following have been performed:
  - .1 Work has been completed and inspected for compliance with Contract Documents.
  - .2 Defects have been corrected and deficiencies have been completed.
  - .3 Work is complete and ready for Final Review by the Departmental Representative.
- .4 Final Inspection: when items noted above are completed, request final review of Work by Departmental Representative, and Contractor. If Work is deemed incomplete by the Departmental Representative, complete outstanding items and request re-review.
- .5 Declaration of Substantial Performance: when Departmental Representative consider deficiencies and defects have been corrected and it appears requirements of Contract have been substantially performed, make application for certificate of Substantial Performance.

## PART 2 PRODUCTS

### 2.1 Not Used

- .1 Not used

## PART 3 EXECUTION

### 3.1 Not Used

- .1 Not used

End of Section

## PART 1 GENERAL

### 1.1 Section Includes

- .1 Final site survey.

### 1.2 Submission

- .1 Work will not be deemed complete unless draft copies of the "As-built" Record Documents have been submitted and reviewed by the Departmental Representative.
- .2 Pay costs of transportation.

### 1.3 Format

- .1 Organize data in the form 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. 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 Section numbers and sequence of Table of Contents.
- .6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .7 Text: manufacturer's printed data, or typewritten data.
- .8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- .9 Provide 1:1 scaled CAD files in .dwg format on CD.

### 1.4 As Builts

- .1 Maintain at the site for Departmental Representative one record copy of:
  - .1 Contract Drawings.
  - .2 Specifications.
  - .3 Addenda.
  - .4 Change Orders and other modifications to Contract.
  - .5 Field test records.
  - .6 Inspection certificates.
- .2 Store record documents in field office apart from documents used for construction.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.



- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .5 Keep record documents available for inspection by Departmental Representative.

1.5 Recording Actual Site Conditions

- .1 Record information on set of drawings, provided by Departmental Representative.
- .2 Record information concurrently with progress of the Work.
- .3 Contract Drawings and shop drawings: mark each item to record actual construction, including:
  - .1 Field changes of dimension and detail.
  - .2 Changes made by change orders.
  - .3 Details not on original Contract Drawings.
- .4 Submit following drawings:
  - .1 Record changes in red. Mark on one set of prints and at completion of project prior to final inspection, produce electronic "as-built" records on disk using latest version of AutoCad. Annotate "AS-BUILT RECORD" in each drawing title block.
  - .2 All changes shall be shown on a separate drawing layer named "as-built".
  - .3 At least 2 weeks prior to commencement of scheduled commissioning activities, submit one copy of the DRAFT "As-built" Project Record Documents for Departmental Representatives review and use during the commissioning activities. After the completion of the commissioning activities, the Departmental Representative will return to the Contractor the DRAFT copy, with review comments, for revision. Prior to the Issuance of the Final Certificate of Completion, and within 10 working days after Substantial Performance, submit 2 copies of the FINAL "As-built" Project Record Documents and disk of "as-built" record drawings.
- .5 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections

PART 2 PRODUCTS

2.1 Not Used

- .1 Not used

PART 3 EXECUTION

3.1 Not Used

- .1 Not used

End of Section

## PART 1 GENERAL

### 1.1 General

- .1 Conform to the requirements of Division 1.

### 1.2 Related Sections

- .1 Section 01 33 00 Submittal Procedures
- .2 Section 01 35 29 Health and Safety Requirements
- .3 Section 01 35 43 Environmental Procedures
- .4 Section 31 10 00 Site Clearing
- .5 Section 31 23 10 Excavating, Trenching and Backfilling

### 1.3 References

- .1 Canadian Council of Ministers of the Environment (CCME).
  - .1 CCME Canada-Wide Standards for Mercury Emissions, dated June 6, 2000.
  - .2 CCME Canada-Wide Standards for Mercury Containing Lamps, dated May 1, 2001.
- .2 Canadian Federal Legislation:
  - .1 Canadian Environmental Assessment Act (CEAA), 2012.
  - .2 Canadian Environmental Protection Act, (CEPA), 1999.
  - .3 Canadian Federal Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems.
  - .4 Canadian Federal Storage of PCB Regulation.
  - .5 Canadian Federal Guidelines for Handling Hazardous and Toxic Wastes at Federal Facilities.
  - .6 Canadian Federal Hazardous Products (Crocidolite Asbestos) Regulations, H-3, SOR-89-440.
  - .7 Canadian Federal Hazardous Products Act (HPA), H-3 64202.
  - .8 Health Canada Lead in Paint and Dust Guidelines, Revision 4, March 2001.
  - .9 Canadian Federal Transportation of Dangerous Goods Act (TDGA), 1992.
- .3 Canadian Standards Association (CSA):
  - .1 CSA S350-M1980 (R2003) - Code of Practice for Safety in Demolition of Structures.
- .4 Environmental Abatement Council of Ontario (EACO)
  - .1 EACO Lead Guideline For Construction, Renovation, Maintenance or Repair October 2014
  - .2 EACO Mould Abatement Guidelines Edition 3 (2015)
- .5 Environmental Property Assessment, Port Burwell Automation Building at the Port Burwell Small Craft Harbour, Port Burwell, Ontario prepared by SNC-Lavalin Inc., dated March 2015.
- .6 Appendix A: Hazardous Materials Abatement Specifications – Port Burwell Automation Building dated October 23, 2017, and prepared by Cambium Inc.

### 1.4 Submittals

- .1 Make submittals in accordance with Section 01 33 00.
- .2 Hazardous Materials: provide description of Hazardous Materials and Notification of Filing with proper authorities prior to beginning of Work as required.
- .3 Prior to beginning of Work on site submit a Demolition Waste Management and Disposal Plan indicating the following:
  - .1 Descriptions of and anticipated quantities of materials to be separated and sent for disposal to locations approved by Provincial authorities.

- .2 Drawings showing the demolition of the Port Burwell Automation Building.
  - .1 Where required by authorities having jurisdiction, submit for approval demolition drawings, diagrams or details showing sequence of demolition.
- .3 The report shall include the name and qualifications of the abatement contractor certified to remove hazardous materials with information.
- .4 Name and address of haulers and waste facilities.
- .4 Certificates: submit copies of certified weigh bills and/or receipts from authorized disposal sites and reuse and recycling facilities for material removed from site to Departmental Representative.
  - .1 Written authorization from Departmental Representative is required to deviate from approved haulers, facilities and/or receiving organizations.

#### 1.5 Definitions

- .1 Demolition: destruction of building following removal of hazardous materials.
- .2 Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities and hazardous products, may include but not limited to: asbestos PCB's, CFC's, HCFC's 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.

#### 1.6 Quality Assurance

- .1 Regulatory Requirements: ensure Work is performed in compliance with CEPA, CEAA, TDGA, and applicable Federal and Provincial regulations.
- .2 Inspection and testing of removal and disposal of hazardous materials and products:
  - .1 Inspection and testing of removal and disposal of hazardous materials and products for compliance with the specification requirements in accordance with Section 01 45 00.
  - .2 Frequency of inspection and testing of removal and disposal of hazardous materials and products:
    - .1 To be determined by Departmental Representative.
  - .3 Inspection and testing of removal and disposal of hazardous materials and products will include but not limited to:
    - .1 Verify that hazardous materials and products removed from the site and disposed of are complying with the specification requirements.
    - .2 Verify use of removal and disposal procedures agreed upon at the project meeting prior to removal and disposal of the hazardous materials and product types.
    - .3 Overall inspection of the completed hazardous materials and products removal and disposal work.
    - .4 Air Quality monitoring.
- .3 Health and Safety.
  - .1 Do construction occupational health and safety in accordance with Section 01 70 03.

#### 1.7 Shipping, Handling and Storage

- .1 Refer to Section 01 61 00.
- .2 Perform Work in accordance with Section 01 35 43.
- .3 Store and manage hazardous materials in accordance with the abatement specifications.

1.8 Project Conditions

- .1 Site Environmental Requirements.
  - .1 Perform work in accordance with Section 01 35 43.
  - .2 Ensure that demolition work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.
  - .3 Do not dispose of waste of volatile materials including but not limited to, mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers.
    - .1 Ensure proper disposal procedures are maintained throughout the project.
  - .4 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers or onto adjacent properties.
  - .5 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authorities as directed by Departmental Representative.
  - .6 Any water generated from demolition or removal operations must be appropriately contained, treated or disposed of in accordance with applicable legislation.
  - .7 Protect trees, plants and foliage on site and adjacent properties where indicated.
  - .8 Do not bury rubbish waste materials.
- .2 Existing Conditions.
  - .1 Remove contaminated or hazardous materials listed as hazardous as defined by authorities having jurisdiction and as directed by Departmental Representative from site, prior to start of demolition Work, and dispose of at designated disposal facilities in safe manner in accordance with TDGA and other applicable regulatory requirements.

1.9 Waste Management and Disposal

- .1 Refer to Section 01 74 20.
- .2 Dispose of Designated Substances as described the Hazardous Materials Abatement Specifications – Port Burwell Automation Building dated October 23, 2017, and prepared by Cambium Inc., and attached as Appendix A to this specification.

1.10 Scheduling

- .1 Notify Departmental Representative 48 hours before hazardous materials are to be removed.

1.11 Protection

- .1 Ensure that demolition work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution. Prevent debris from blocking surface drainage pathways.
- .2 Prevent extraneous materials from contaminating air beyond application area, by providing temporary enclosures during demolition work.
- .3 Cover or wet down dry materials and waste to prevent blowing dust and debris. Control dust on all temporary roads.

## PART 2 PRODUCTS

### 2.1 Equipment

2.2 Leave machinery running only while in use, except where extreme temperatures prohibit shutting machinery down.

2.3 Ensure all petroleum storage devices brought on and/or used on site are in accordance with and comply with all applicable Storage Tank Regulations and Codes.

## PART 3 EXECUTION

### 3.1 General

.1 Dispose of hazardous materials in accordance with Federal and Provincial legislation and as described the Hazardous Materials Abatement Specifications – Port Burwell Automation Building dated October 23, 2017, and prepared by Cambium Inc., and attached as Appendix A to this specification.

.2 Remove bird droppings and rodent nests and other pests as required. Provide additional pest control measures as required and directed by Departmental Representative.

### 3.2 Preparation

.1 Locate and protect utilities. Preserve active utilities traversing site in operating condition.

.2 Notify and obtain approval of utility companies before starting demolition.

.3 Disconnect and cap mechanical and electrical services.

### 3.3 Removal of Hazardous Wastes

.1 Remove contaminated or hazardous materials from site and dispose of in safe manner according to applicable provincial and federal regulations and requirements.

.2 Refer to the Hazardous Materials Abatement Specifications – Port Burwell Automation Building dated October 23, 2017, and prepared by Cambium Inc., and attached as Appendix A to this specification.

### 3.4 Removal Operations

.1 Remove items as indicated.

.2 Dispose of materials at authorized facilities.

### 3.5 Safety Code

.1 Perform demolition work in accordance with CSA S350.

.2 Blasting operations are NOT permitted during demolition

### 3.6 Demolition

- .1 Demolish the complete building structure, including but not limited to the following:
  - .1 Demolish complete existing Port Burwell Automation Building.
  - .2 Demolish concrete pads, to minimum depth of 1300 mm below finished grade unless indicated otherwise. Remove concrete and sub-grade to facility accepting contaminated soil.
- .2 Demolish foundation walls and footings, to a depth of 1300 mm below finished floor level.
- .3 Demolish to minimize dusting. Keep materials wetted as directed by Departmental Representative to minimize spread of dust and mold spores.
- .4 At end of each day's work, leave Work in safe and stable condition.
- .5 Hazardous waste materials shall be demolished in accordance with the Hazardous Materials Abatement Specifications – Port Burwell Automation Building dated October 23, 2017, and prepared by Cambium Inc., and attached as Appendix A to this specification.
- .6 Environmental:
  - .1 Ensure that contaminated or dangerous materials are removed and disposed of as defined by authorities having jurisdiction, relating to environmental protection, from site and dispose of in safe manner to minimize danger at site or during disposal.
- .7 All hazardous materials must be removed by the Contractor. Refer to the Hazardous Materials Abatement Specifications – Port Burwell Automation Building dated October 23, 2017, and prepared by Cambium Inc., and attached as Appendix A to this specification.
  - .1 The waste measurements noted in the reports are approximate quantities of waste to be removed. The Contractor shall verify the exact amounts on site. No claim for additional money shall be made based on quantities of waste noted in the reports.
  - .2 Prior to start of any demolition work; ensure that contaminated or hazardous materials or substances as listed in the Hazardous Materials Abatement Specifications are removed and any additional contaminated or hazardous materials or substances as defined by authorities having jurisdiction are removed from site and disposed of at designated disposal facilities in safe manner and in accordance with the Transportation of Dangerous Goods Act (TDGA)

### 3.7 Removal From Site

- .1 Remove stockpiled material as directed by Departmental Representative, when it interferes with operations of project.
- .2 Contain all fibrous materials (e.g. Insulation) to minimize release of airborne fiber while being transported.
- .3 Dispose of materials in accordance with applicable regulations.
  - .1 Disposal Facilities: approved by federal and provincial authority having jurisdiction. Refer to Section 01 74 20.

### 3.8 Restoration

- .1 Restore areas and existing works outside areas of demolition to conditions that existed prior to beginning of Work and to match condition of adjacent, undisturbed areas.
- .2 Use soil treatments and procedures which are not harmful to health, are not injurious to plants,

and do not endanger wildlife, adjacent water courses or ground water

3.9 Field Quality Control

- .1 Inspection and testing of hazardous materials and products for removal and disposal shall be carried out by an accredited environmental testing agency hired and paid for by the Contractor.
- .1 No compensation will be made to the Contractor for delays resulting from waiting for test results from Environmental Testing Agency.

3.10 Cleaning

- .1 Remove debris and leave work site clean, upon completion of Work

End of Section

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## PART 1 GENERAL

### 1.1 General

- .1 Conform to the requirements of Division 1.

### 1.2 Related Sections

- .1 Section 02 41 13            Structure Demolition
- .2 Section 31 23 10           Excavating, Trenching and Backfilling

### 1.3 References

- .1 Ontario Provincial Standards (OPS)
  - .1 OPSD 219.130 Heavy Duty Silt Fence Barrier (November 2006)
  - .2 OPSS 805 Temporary Erosion and Sediment Control Measures (November 2015)
  - .3 OPSD 805 Temporary Erosion and Sediment Control Measures (November 2015)

### 1.4 Definitions

- .1 Clearing consists of cutting off trees and brush vegetative growth to not more than a specified height above ground and disposing of felled trees, previously uprooted trees and stumps, and surface debris.
- .2 Close-cut clearing consists of cutting off standing trees, brush, scrub, roots, stumps and embedded logs, removing at, or close to, existing grade and disposing of fallen timber and surface debris.
- .3 Clearing isolated trees consists of cutting off to not more than specified height above ground of designated trees, and disposing of felled trees and debris.
- .4 Underbrush clearing consists of removal from treed areas of undergrowth, deadwood, and trees smaller than 50 mm trunk diameter and disposing of all fallen timber and surface debris.
- .5 Grubbing consists of excavation and disposal of stumps and roots to not less than a specified depth below existing ground surface.

### 1.5 Quality Assurance

- .1 Clean up spills of preservative materials immediately with absorbent material and safely discard to landfill.

## PART 2 PRODUCTS

### 2.1 Materials

- .1 Soil Material for Fill:
  - .1 Excavated soil material: free of debris, roots, wood, scrap material, vegetable matter, refuse, soft unsound particles, deleterious, or objectionable materials.
  - .2 Remove and store excavated soil material for reuse.



- .2 Silt fence shall be prefabricated heavy duty geotextile with the following physical properties:

Property	Test Method	Units	Minimum Average Roll Values
Grab Tensile Strength (machine direction)*	ASTM D 4632	N (lbs)	550
Grab Tensile Strength (cross-machine direction)*	ASTM D 4632	N (lbs)	550
Grab Tensile Elongation	ASTM D 4632	%	15/15
Mullen Burst Strength	ASTM D 3786	kPa	2060
Trapezoid Tear Strength	ASTM D 4533	N	290
Permittivity	ASTM D 4491	sec	0.10
Water Flow Rate	ASTM D 4491	l/min/m2	405
Ultraviolet Stability	ASTM D 4355	%	70

- .3 Fence shall be prefabricated with 3.2 cm nominal square hardwood posts, minimum 1200 mm long at 2.5 metre spacing.

### PART 3 EXECUTION

#### 3.1 Examination

- .1 Prior to commencement of Work, meet with Departmental Representative on site for review of layout and items to be retained and protected on site.
- .2 Examine drawings and investigate fully site conditions. Report any adverse conditions to the Departmental Representative.

#### 3.2 Preparation and Protection

- .1 Maintain control and protection devices throughout the duration of construction in good repair and to the satisfaction of the Departmental Representative and the Ministry of the Environment.
- .2 Environmental protection measures are to be installed in advance of any work performed and shall be constructed and maintained to the satisfaction of the Departmental Representative.
- .3 Install and maintain new construction fencing. Refer to Section 01 56 00.
- .4 Prepare all required temporary access routes and driveways. Ensure entrances are designed to safely support all imposed loads. Refer to Section 31 23 10.
- .5 Protect trees and vegetation to remain against flooding and sediment deposit.
- .6 Obtain locates of all underground services and stake prior to commencement of any work on site.
- .7 Maintain and protect existing fire access routes.

#### 3.3 Sedimentation Control

- .1 Ensure that sedimentation control as specified and as indicated on the drawings and required by authorities are in place and are in proper repair prior to commencement of the Work.
- .2 Sedimentation control shall be in accordance with OPSS 805.

- .3 Maintain and/or repair sedimentation control to prevent contamination by excavated fill.
- .4 Install additional sedimentation control as required and obtain Departmental Representative's approval prior to commencement of site works.

### 3.4 Clearing and Grubbing

- .1 Remove and dispose of trees, snags, stumps, shrubs, brush, limbs, and other vegetative growth. Remove all evidence of their presence from the surface including sticks and branches greater than 25 mm in diameter or thickness. Remove and dispose of trash piles and rubbish.
- .2 Clearing includes felling, trimming, and cutting of trees into sections and satisfactory disposal of trees and other vegetation designated for removal, including downed timber, snags, brush, and rubbish occurring within cleared areas.
- .3 Clear as indicated by Departmental Representative, by cutting at a height of not more than 300 mm above ground. In areas to be subsequently grubbed, height of stumps left from clearing operations to be not more than 1000 mm above ground surface.
- .4 After clearing, remove and dispose of wood or root matter including stumps, trunks, roots, or root systems greater than 25 mm in diameter.
- .5 Clear underbrush from areas as indicated at ground level.
- .6 Remove and dispose of roots larger than 7.5 cm in diameter, matted roots, and designated stumps from indicated grubbing areas.
- .7 Grub out stumps and roots to not less than 600 mm below ground surface.
- .8 Clear and grub entire site area.

### 3.5 Removal

- .1 Remove all items as indicated on site plans and dispose of in a legal manner.
- .2 Partially remove existing chain link fence and gate as necessary to provide access for demolition equipment. Reinstall fence and gate upon completion of work.

### 3.6 Finished Surface

- .1 Leave ground surface in condition suitable for grading operations to approval of Departmental Representative.

### 3.7 Cleaning

- .1 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

End of Section

## PART 1 GENERAL

### 1.1 General

- .1 Conform to the requirements of Division 1.

### 1.2 Related Sections

- .1 Section 31 10 00 Site Clearing

### 1.3 References

- .1 ASTM International (ASTM)
  - .1 ASTM D698-12e2 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>))
  - .2 ASTM D1557-12e1 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN-m/m<sup>3</sup>))
- .2 The Occupational Health and Safety Act.

### 1.4 Submittals

- .1 Make submittals in accordance with Section 01 33 00.
- .2 Submit shop drawings of shoring and bracing required in connection with excavation. Drawings to show clearly procedural sequence to be followed.

### 1.5 Definitions

- .1 Earth: Site excavated material, including shale, rubble rock, building debris, shrub and tree roots and soil.
- .2 Soil: Site excavated material, free from shale, rubble rock, building debris, shrub and tree roots.
- .3 Fill: Approved materials, other than earth, clay and unapproved soil. Approved soil may be used only with approval of the Departmental Representative in writing.
- .4 Rock: All solid rock in ledges, stratified deposits, unstratified masses, and all conglomerate deposits or any other material so firmly cemented by process of nature as to present all the characteristics of solid rock, being so hard or firmly cemented that it cannot be excavated and removed with a power shovel except after thorough and continuous drilling and blasting.
- .5 Backfilling: The operation of supplying and installing fill and approved soil materials.

### 1.6 Examination

- .1 Examine the building site and determine the nature and extent of the materials to be removed or the additional fill required to provide depths and levels indicated on drawings. Field check the site to review existing conditions. Verify locations of all existing utilities and services that will affect the work.
- .2 Before tendering the work, examine the site and ascertain the extent and nature of the material it may be necessary to remove to provide for the depths, levels, and grades required.

1.7 Environmental Property Assessment

- .1 Refer to Environmental Property Assessment, Port Burwell Automation Building at the Port Burwell Small Craft Harbour, Port Burwell, Ontario prepared by SNC- Lavalin and dated March, 2015 for known hazardous materials and designated substances within the Port Burwell Automation Building.
- .2 Information provided in this report is based on field records and is therefore subject to the usual limitations and reservations associated with such work (stated in the conclusion of the report).
- .3 The use of this information is entirely at the risk of the Contractor.
- .4 During examination of the site, carry out such investigations as necessary to determine subsurface conditions to be encountered in constructing the Works.

1.8 Setting Out Work

- .1 The drawings indicate the building components location, and proposed and final grades. Be responsible to construct the work according to levels and locations shown on the drawings. Report any errors or discrepancies to the Departmental Representative before commencing work.
- .2 Commencement of any part of the work shall constitute acceptance of drawings as being correct.
- .3 Employ a competent instrument man and provide all lines and levels, limit lines and boundary stakes for the execution of the work as required. All bench marks shall be carefully protected.
- .4 Provide all Subcontractors with, and be responsible for, all lines, levels and dimensions which such trades require to relate their work to the work of the Contractor or other trades. All trades shall be notified that all such levels and dimensions must be obtained from the Contractor.

1.9 Quality Assurance

- .1 Conform to the applicable requirements of the Ontario Provincial Standard Specifications (OPSS).

1.10 Existing Services

- .1 Before starting the work, obtain locates to verify the location of all underground services and utilities occurring in the work site area.

1.11 Sedimentation Control

- .1 Refer to Section 31 10 00.

1.12 Dewatering

- .1 Keep excavations and backfill dry at all times.

## PART 2 PRODUCTS

### 2.1 Materials

- .1 Fill: Existing excavated material shall be reused to backfill excavations to the greatest extent possible.

## PART 3 EXECUTION

### 3.1 Preparation

- .1 Clearing: Refer to Section 31 10 00.
- .2 Stock Piles: Materials shall be stockpiled on the site. Stockpile materials in a manner to prevent segregation and contamination. Piles not to exceed 2000 mm in height. Stockpile materials in a location and manner not interfering with demolition activities.
- .3 Testing: the Departmental Representative will arrange for testing and sampling of excavated materials.

### 3.2 Temporary Gravel Access Road

- .1 Provide a temporary construction access road from the adjacent public roadway, to the site.
- .2 Minimum requirements for the temporary access road are as follows:
  - .1 Clear and grub as specified in Section 31 10 00.
  - .2 Provide access road of sufficient width to accommodate vehicles and equipment.
  - .3 Remove as necessary all existing guardrails and barriers at the existing parking area.
  - .4 Topsoil and soft material shall be excavated to a minimum depth of 150mm or down to a solid stratum and the excavated material shall be suitably disposed of. Where slopes are unavoidable they should be kept to a minimum and be as uniform as possible. Provisions shall be made for drainage of the site. In the case of roads, such culverts and drains as may be required for the stability of the roadway or the drainage of adjacent land shall be provided.
  - .5 Access road shall consist of HDPE or plywood matting or geofibre mats as specified on the drawings.
  - .6 Provide mud mats at public roadways and parking areas. Mud mats shall consist of min 150 mm depth of 50 mm diameter clear crushed stone and shall be not less than 15.0 metres long. Geofibre mats approved by the Departmental representative may be accepted.
  - .7 Construction access road will remain in place following completion of demolition activities for future soils remediation projects.

### 3.3 Excavation Work

- .1 Excavate to bottom of existing footings and buried structures.
- .2 Excavation shall be made to clean lines to minimize quantity of fill material required.
- .3 Remove large rocks, stumps and other obstructions of whatever nature encountered in the course of excavation and haul away off the site.
- .4 Unauthorized Excavation - Excavation to greater than required depth shall be corrected by the Contractor at his own expense in a manner as directed by the Departmental Representative.

- .5 Remove all concrete, masonry, rubble or other construction debris encountered during the work.
- .6 Keep excavation free of water by bailing, pumping or a system of drainage as required and provide pumps, suction and discharge lines or well points of sufficient capacity. Take all necessary measures to prevent flow of water into excavations.
- .7 Protect the bottom and sides of excavated pits and trenches from freezing. Protect also from exposure to the sun and wet weather to prevent cave-ins and softening of the bed upon which concrete or drains rest.
- .8 Keep bottoms of excavations clean and clear of loose materials levelled and stepped at changes of levels with exception of excavations made for drainage purposes and those to slope as required.
- .9 If removal of earth causes displacement of adjacent earth, the earth so disturbed shall be removed at no additional cost to the Departmental Representative.

### 3.4 Backfilling

- .1 Proceed promptly with backfilling, and as work to be backfilled has been inspected and approved by the Departmental Representative. Backfill should be placed in lifts not greater than 200 mm thick in the loose state, each lift being compacted with a suitable compactor to the specified density.
- .2 Backfill with excavated soil material as described in Section 31 10 00.
- .3 Backfill shall be free of snow and ice, topsoil, construction debris and oversized boulders greater than 150 mm.

### 3.5 Rough Grading

- .1 Preparation and Layout
  - .1 Establish extent of grading by area and elevation.
  - .2 Rough grade all areas to tolerance of plus or minus 50 mm.

### 3.6 Compaction Density

- .1 Use approved equipment for compaction. Maintain materials at optimum moisture content to obtain required compaction. Special care shall be taken to prevent disturbance of the existing subgrade and adjacent structures and equipment.
- .2 Be responsible for damage to the subgrade and installed materials due to improper compaction methods. Make good to approval of the Departmental Representative.
- .3 The minimum density of fill in place shall be the values of Standard proctor densities for corresponding locations in accordance with ASTM D698.
- .4 If during progress of work, tests indicate that compacted materials do not meet specified requirements, remove defective work, replace and retest at own expense.
- .5 Ensure compacted fills are tested and approved before proceeding with placement of surface materials.

3.7 Grading and Fill

- .1 Site excavated soil material: clean material as described in Section 31 10 00 shall be used as backfill to excavations when approved by the Departmental representative.
- .2 Finished grading and soil shall blend with surrounding areas and allow to the site to rejuvenate and overgrow with natural vegetation to match surrounding areas.

3.8 Water on Prepared Surfaces

- .1 Promptly remove, by approved methods, water rising from seeping of the soil or resulting from rainfall wherever such water is on the surface of sub-grade soil and compacted fill.

3.9 Surplus Soil Disposal

- .1 Surplus soil and excavated material shall be used to regrade the site.
- .2 Contaminated material, if encountered shall be removed and disposed of at legal landfill sites approved by the Departmental Representative.

3.10 Cleaning

- .1 As excavation proceeds, keep roads clean of dirt and excavated material.
- .2 Clean up and wash down to remove all dirt and excavated materials caused by the work of this section daily.

End of Section

## PART 1 GENERAL

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### 1.2 General

- .1 Cambium Inc. (Cambium) was retained by Barry Bryan Associates to prepare the following specifications document for the removal and/or management of identified Hazardous Materials throughout the Port Burwell Automation building located in Port Burwell, Ontario, prior to the planned demolition of the building.
- .2 All abatement work must be completed in accordance with all applicable regulations, guidelines, and this abatement specifications document.

### 1.3 Scope of Work

- .1 The scope of work has been established based on the requirements of the project and the findings of the following report:
  - .1 “Environmental Property Assessment – Port Burwell Automation Building”, prepared by SNC-Lavalin Inc., and dated March, 2015.

### 1.4 Work Area – Port Burwell Automation Building

- .1 Definition
  - .1 The work area is defined as the Port Burwell Automation Building.

### 1.5 Removal Procedures

- .1 The removal of all specified asbestos-containing materials in the work area must be completed in accordance with Type 1 procedures as detailed in Ontario Regulation (O. Reg.) 278/05 and this document;



- .2 All paint is to be removed following Class 1 lead procedures as detailed in the Environmental Abatement Council of Ontario (EACO) guideline “Lead Guideline for Construction, Renovation, Maintenance or Repair”, dated October 2014, and this document;
- .3 Cutting, grinding or demolition of materials containing free crystalline silica are to be completed only with appropriate dust suppression methods, proper respiratory protection and general worker safety precautions;
- .4 Fluorescent light tubes containing mercury vapour are to be removed intact; and
- .5 Light ballasts containing PCBs are to be removed intact.

#### 1.6 Work Schedule

- .1 The hours the contractor will have access to the building will be specified by Departmental Representative or appropriate party prior to the commencement of work.

#### 1.7 Hazardous Materials Scheduled for Removal

<b>Table 1 Work Area – Port Burwell Automation Building</b>			
<b><u>Component</u></b>	<b><u>Material</u></b>	<b><u>Hazardous Material</u></b>	<b><u>Approx. Quantity (m., ft.)</u></b>
Interior Wall and Ceiling	Transite Board	15% Chrysotile Asbestos	102 m2 (1,100 ft2)
Door	Fire Door Insulation	Assumed Asbestos	1 door
Exterior Wall	White Paint	0.023% Lead	83.6 m2 (900 ft2)
Exterior Door and Frame	Green Over Red Paint	4.0% Lead	3.7 m2 (40 ft2)
Floor	Grey Paint	0.22% Lead	18.50 m2 (200 ft2)
Exterior Wall	Concrete Block	Silica	83.6 m2 (900 ft2)
Floor	Concrete	Silica	18.50 m2 (200 ft2)
Floor Slab	Concrete	Silica	13 m3 (460 ft3)
Foundations	Concrete	Silica	78 m3 (2,755 ft3)
AST Tank Foundation	Concrete	Silica	3 m3 (106 ft3)
Light	Fluorescent Light Bulb	Mercury	4 Bulbs
Light	Light Ballast	Polychlorinated Biphenyls	2 Ballasts

#### 1.8 Submittals

- .1 Make submittals in accordance with Section 01 33 00.
- .2 Submittals required for the effective and timely execution of the work program, include, but are not limited to the following:
  - .1 To Be Submitted Prior To Commencement Of Removal Activities:
    - .1 Documentation for confirmation of an Asbestos Training Course for all workers.
    - .2 Documentation for confirmation of a Lead Training Course for all workers.
    - .3 Fit test records for all abatement workers (half face respirators);
    - .4 Confirmation that all workers involved in the project have fall-arrest training, or

- equivalent, if working above 3m (10 ft.);
  - .5 Necessary permits for the transportation (Certificate of Approval) and disposal of asbestos waste;
  - .6 Notification of all sub-contractors proposed to be involved with the abatement program, to be approved by Departmental Representative prior to their involvement; and,
  - .7 Material Safety Data Sheets (MSDS) for any sealant, surfactant, or other materials proposed for use in hazardous materials remediation. All MSDS sheets must be supplied at least 48 hours prior to the materials being brought on-site.
- .3 To Be Submitted Following Completion Of Abatement Activities:
- .1 Disposal weigh bills.

#### 1.9 Regulations

- .1 All work must comply with the following regulations and guidelines:
  - .1 Ontario Regulation 278/05 – Asbestos on Construction Projects and in Buildings and Repair Operations – made under the Occupational Health and Safety Act.
  - .2 Ontario Regulation 490/09 – Designated Substances – made under the Occupational Health and Safety Act.
  - .3 Ontario Regulation 347/90 – General – Waste Management.
  - .4 Environmental Abatement Council of Ontario (EACO) Lead Guideline for Construction, Renovation, Maintenance or Repair.
  - .5 Ontario Ministry of Labour Guideline- Lead on Construction Projects.
  - .6 Ontario Ministry of Labour Guideline- Silica on Construction Projects.
  - .7

#### 1.10 Waste Transport and Disposal

- .1 The Contractor is responsible for the disposal of all hazardous materials waste generated. The Contractor shall:
  - .1 Ensure asbestos-containing or asbestos-contaminated materials, removed during abatement are treated, packaged, transported and disposed of as asbestos waste.
  - .2 Drop garbage bins at designated locations and keep bins covered and enclosed while at the site. The bin loading area shall be kept clean at all times.
  - .3 Conform to requirements of Regulations under Environmental Protection Act for Waste Management, transporting and disposal of hazardous waste.
  - .4 Ensure shipment of containers to landfill is taken by waste hauler licensed to transport asbestos waste.
  - .5 Provide a bill of lading showing the type and weight of hazardous waste being transported for each load.
  - .6 Check with landfill operator to determine type of waste containers acceptable.
  - .7 Ensure the landfill operator is fully aware of hazardous material being dumped.
  - .8 Co-operate with Ministry of Environment inspectors and immediately carry out instructions for remedial work, where required, to maintain environment, at no additional cost to the Departmental Representative.

#### 1.11 Worker Protection

- .1 Provide for worker protection in accordance with the regulations of the Province of Ontario and guidelines referenced in this Section.

#### 1.12 Type 1 Asbestos Abatement Execution

- .1 Type 1 Preparation
  - .1 Asbestos warning signs must be posted at all possible entrances to the general work area.
  - .2 Warning signs shall state at a minimum:
    - .3 There is an asbestos hazard.
    - .4 Access to the work area is restricted to authorized abatement personnel.
    - .5 Assigned PPE must be worn in the work area.
    - .6 Eating, drinking, or smoking shall not be permitted in the work area.
    - .7 A worker washing facility shall be provided at the entrance to the work area.
    - .8 Polyethylene work sheets must be placed on the floor in the work area.
    - .9 Cleaning must be achieved with the use of HEPA vacuums and wet-wiping.
    - .10 All HEPA vacuums must be DOP tested on site prior to their use.
- .2 Type 1 Asbestos Abatement Procedures
  - .1 All work performed shall be done only by means of non-powered hand tools.
  - .2 Materials must be continuously wetted to control the spread of dust and/or fibres, unless wetting would create a hazard (i.e. electrical) or damage.
  - .3 A wetting agent must be added to water that is to be used to control the spread of dust and fibres.
  - .4 Dust and debris must be cleaned at regular intervals by HEPA vacuuming and wet-wiping techniques.
  - .5 Waste must be double-bagged at regular intervals.
- .3 Waste Removal Procedures
  - .1 Waste must be promptly double-bagged and removed from the work area at regular intervals.
  - .2 Asbestos waste must be placed in bags clearly labelled as asbestos waste within the containment.
  - .3 No sharp objects shall be placed within the asbestos waste bags.
  - .4 Asbestos waste bags must be cleaned using HEPA vacuuming and wet-wiping techniques.
  - .5 Cleaned asbestos waste bags must then be double bagged and re-cleaned before leaving the work area.
  - .6 Waste bags must be relocated to a sealed and locked waste bin, or removed from the site at the end of each shift.
- .4 Final Clean
  - .1 Following the removal of all specified materials, the abatement contractor shall perform a final clean of the work area.
  - .2 All surfaces within the work area shall be cleaned, at a minimum, using a HEPA vacuum, and wet-wiping.
  - .3 Final cleaning includes all abatement equipment including, but not limited to, hoses, ladders, and hand tools.
  - .4 Compressed air shall not be used.
  - .5 Power washing shall not be used.

#### 1.13 Lead Abatement Execution

- .1 Preparation
  - .1 Lead warning signs must be posted at all possible entrances to the general work area during lead abatement work.
  - .2 Warning signs shall state at a minimum:

- .1 There is a lead hazard.
- .2 Access to the work area is restricted to authorized personnel.
- .3 Assigned PPE must be worn in the work area.
- .4 Eating, drinking, or smoking shall not be permitted in the work area.
- .3 A worker washing facility shall be provided at the entrance to the work area.
- .4 All equipment and non-moveable items in the work area must be pre-cleaned and protected with polyethylene sheeting.
- .5 Cleaning must be achieved with the use of HEPA vacuums and wet-wiping.
- .6 If present, lock out and seal any air intakes or HVAC equipment which may be in the work area.
- .2 Lead Abatement Procedures
  - .1 The removal and/or disturbance of lead containing paint can be completed in accordance with the following options only:
    - .1 With the use of a chemical gel/stripper or paste;
    - .2 With the use of non-powered hand tools, where the material remains chiefly intact and is not crumbled, pulverized or powdered;
    - .3 Operating construction or demolition equipment (e.g. excavator, bulldozer) during building demolition; OR
    - .4 With the use of a power tool that has an effective\* dust collection system equipped with a HEPA filter.
  - .2 Materials must be continuously wetted to control the spread of dust, unless wetting would create a hazard (i.e. electrical) or damage.
- .3 Waste Removal Procedures
  - .1 The following applies to bulk paint removed from the subject substrate, paint debris, or debris contaminated with lead containing paint, where required prior to disturbance.
    - .1 Il waste must be cleaned up from general work area at regular intervals and/or at the end of each shift and placed into 6 mil polyethylene bags. The bags must be:
      - .2 Dust tight;
      - .3 Suitable for the type of waste; and,
      - .4 Identified as lead waste.
  - .2 Lead waste bags must then be placed into lead waste barrels.
    - .1 Lead barrels must be:
      - .2 Air tight, and,
      - .3 Identified as lead waste.
  - .3 Lead waste barrels must be cleaned of gross contamination using HEPA vacuuming and wet wiping techniques at regular intervals or at the end of each shift.
  - .4 Lead waste barrels will be stored at the designated waste storage location to be determined by KCCC until the completion of the abatement or at approved times during the abatement.
  - .5 Lead waste barrels must be stored on two layers of rip-proof polyethylene sheeting.
  - .6 All waste barrels must be inspected before leaving the site.
  - .7 A Toxicity Characteristic Leaching Procedure (TCLP) sample should be performed by the Contractor on lead-based paints and substrates to determine the appropriate waste stream and disposed of in accordance with O. Reg. 347.
- .4 Final Clean
  - .1 Following the removal or disturbance of lead-based paint, the contractor shall perform a cleaning of the work area.
    - .1 All surfaces within the work area shall be cleaned, at a minimum, using a HEPA vacuum, wet-wiping, and damping mopping.

- .2 Final cleaning includes all abatement equipment including, but not limited to, hoses, ladders, elevated platforms, and hand tools.
  - .3 Compressed air shall not be used
  - .4 Power washing shall not be used.
- .2 Upon completion of the final cleaning, a visual inspection should be performed to ensure the effectiveness of cleaning operations. No equipment should be removed from the work area prior to the successful outcome of the Final Visual Inspection.

1.14 Silica Abatement and Waste Procedures

- .1 Lead-based paint is present on materials containing free crystalline silica (concrete floor and concrete block). Lead abatement procedures are to be followed during the demolition of materials containing free crystalline silica as long the paint remains intact.
- .2 If the lead-based paint is removed separately, demolition of materials containing free crystalline silica shall be completed only with appropriate dust suppression methods, proper respiratory protection and general worker safety precautions.
- .3 The removal of concrete foundations for the automation building and the AST tank shall be completed with appropriate dust suppression methods, proper respiratory protection and general worker safety precautions.

1.15 Mercury Abatement and Waste Procedures

- .1 Items that contain mercury shall be removed in a manner to keep them sealed and intact at all times.
- .2 Direct skin contact with mercury and inhalation of mercury vapour must be avoided.
- .3 All mercury-containing items shall be submitted to a qualified recycling facility for mercury reclamation
- .4 All mercury-containing items shall be stored and transported in a manner to avoid incidental breakage

1.16 PCB Abatement and Waste Procedures

- .1 The entire ballast is to be removed intact and disposed of following the requirements of the Ontario Environmental Protection Act, Ontario Regulation 362: PCB Waste Management and Ontario Regulation 347: General-Waste Management.

End of Section