

PART 1 GENERAL

1.1 RELATED SECTIONS

See other sections for additional detail for requirements listed below.

1.2 ACCESS AND EGRESS

- .1 Design, construct and maintain temporary "access to" and "egress from" work areas, including stairs, runways, ramps or ladders and scaffolding, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations.

1.3 USE OF SITE AND FACILITIES AND PARKING SPACES

- .1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated.
- .2 Maintain existing services to site and provide for personnel and vehicle access.
- .3 Where security is reduced by work, provide temporary means to maintain security.
- .4 Closures: protect work temporarily until permanent enclosures are completed.
- .5 Occupant parking spaces to remain accessible at all times except as approved by Departmental Representative.
- .6 Where occupant parking spaces will be relocated and reconfigured, schedule this work for "After Hours".
- .7 Where parking spaces will be made temporarily inaccessible:
 - .1 Plan into the project schedule.
 - .2 Work will need to be carried out "After Hours".
 - .3 Submit to Departmental Representative location, time, duration and description of parking reduction for approval.
 - .4 Assist Departmental Representative in preparation of communiqué by providing a description of the work and schedule.
- .8 There is no parking on Parliament Hill except within the approved mobilization area.

1.4 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

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

1.5 EXISTING SERVICES

- .1 Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, give the Departmental Representative a minimum of ten (10) working days of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions to a minimum. Carry out interruptions after normal working hours of occupants, preferably on weekends.
- .3 Identify service interruptions on the schedule.
- .4 Provide for personnel, pedestrian and vehicular traffic control.

1.6 SPECIAL REQUIREMENTS

- .1 Carry out work that may cause a disturbance to users and occupants After Hours. A disturbance is caused by disruptive work creating vibrations, impacts, noise, dust, fumes or unsightly work.
- .2 Submit schedule in accordance with Section 01 32 16 - Construction Progress Schedule - Critical Path Method (CPM) 01 32 16 - Construction Progress Schedules - Bar (GANTT) Chart.
- .3 Ensure that Contractor personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .4 Keep within limits of work and avenues of ingress and egress.
- .5 Ingress and egress of Contractor vehicles greater than HSU-type (Heavy Single Unit, length 11.5m) at site is limited to After Hours with a minimum of two (2) days advance notice given to the Departmental Representative.
- .6 Ensure all personnel accessing the site record name and affiliation on sign-in sheet. Sign-in sheet to remain in site trailer for inspection by Departmental Representative at all times.
- .7 For access by public roads, make all arrangements, obtain any required permits and confine activities to such routes and load limits as the authorities having jurisdiction may require.

1.7 WORK STOPPAGES

- .1 "Regular hours" of work are considered Monday to Friday 06:00 to 18:00.
- .2 After Hours are considered as follows:
 - .1 House of Commons and Senate in session: Monday to Friday from 21:00 to 06:00 hours and on Saturdays, Sundays and statutory holidays.
 - .2 House of Commons and Senate in recess: Monday to Friday from 18:00 to 06:00 hours and on Saturdays, Sundays and statutory holidays.
 - .3 During late House of Commons and Senate sittings: one (1) hour after the House of Commons and/or Senate have adjourned.
- .3 Special events: During the dates and times listed below, work is not permitted, and deliveries or removal of materials are not permitted. Also, site construction lighting must be shut down, booms lowered to horizontal position and audible equipment must be shut off such as compressors, generators, excavation or hoisting equipment, and other noise-producing equipment. Note: Dates and times shown below are subject to change.
 - .1 The Sound and Light event: daily, from July 5 through to first Monday of September, from 19:00 to 23:00 hours.
 - .2 Remembrance Day: November 11, from 10:00 to 16:00 hours.
 - .3 Canada Day: July 1, 06:00 hours to July 2, 01:00 hours.
 - .4 Police and Peace Officers' Memorial Service: last weekend of September from 18:00 hours of the Friday before to 18:00 hours of the Sunday of the same weekend.
 - .5 Christmas Light Ceremony: first Thursday in December from 17:00 to 23:00 hours.
 - .6 Fire-fighter Memorial Service: second Sunday of September from 08:30 to 12:30 hours.
 - .7 Changing of the Guard Ceremony: daily, starting on the Friday prior to Canada Day (July 1) to last Friday in August, from 10:00 to 10:30 hours.
 - .8 Budget day.
 - .9 State visits, other special events, and demonstrations.
- .4 The Departmental Representative will give notification of late sittings.
- .5 The Departmental Representative will establish a procedure for unscheduled Work Stoppages. Provide contact names and back-up contacts for all sub-contractors for notification purposes in the event a Work Stoppage needs to be communicated.

- .6 Project related work can create a disturbance to the building occupants and/or disrupt House of Commons and/or Senate operations. A disturbance is caused by disruptive work creating vibrations, impacts, noise, dust, fumes, or unsightly conditions as perceived by the occupants. A request for stoppage of disruptive work may be raised by House of Commons or Senate occupants and it is the House of Commons and Senate client representatives who will manage the request from their user groups. Departmental Representative and the House of Commons and/or Senate client representative are to confer and must address the request for stoppage within thirty (30) minutes from being raised. The Contractor may be asked to temporarily stop disruptive work for this duration at no extra cost to the project.
- .7 Allow for a minimum of ten (10) separate one day unscheduled work stoppages in the project schedule.
- .8 In the event of additional unscheduled work stoppages, the Contractor is to keep a detailed log of time used. Only time signed off by the Departmental Representative can be deducted from the provision and compensation will be negotiated as a change order on a case-by-case basis. Equipment down time during scheduled or unscheduled events on the Hill will not be compensated by the Departmental Representative.

1.8 SECURITY CLEARANCES

- .1 Designate a security clearance liaison person as the principal contact for the Departmental Representative. The security clearance liaison will maintain a daily log of individuals who are cleared to work on site.
- .2 All personnel employed on this project will be subject to a security clearing process. Obtain the appropriate security clearance level stated in the Contract, or higher, for each individual required on site. It is the Contractor's responsibility to ensure all personnel on site obtain timely security clearance before arriving on site.
- .3 Submit to the Departmental Representative within five (5) days of contract award a list of all personnel, including sub-contractors, who require access to the site. The list shall contain full names, firms they represent and date of birth. Continue to submit names of additional personnel throughout the project as required by the project.
- .4 Any impacts on the schedule and/or cost as a result of not obtaining the required security clearances in a timely manner will not be reimbursable by PWGSC.
- .5 The Departmental Representative will issue Authorization for Building Access (ABA) forms no sooner than two (2) days after receipts of names and dates of birth for individuals requiring access to site. Individuals will not be allowed to work on site without this form.
- .6 Personnel will be checked daily at start of work shift against the sign-in sheet maintained by the site supervisor.
- .7 All vehicles requiring access to the site will be subject to a security clearing process. Provide Departmental Representative with list of vehicles requiring access. Include with the list: vehicle make, model, colour, and license plate number.
- .8 The Department Representative will issue Authorization for Vehicular Access (AVA) forms no sooner than two (2) days after receipt of vehicle information. Vehicles will not be allowed to access the site without this form.

1.9 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions. Smoking is not allowed on site or anywhere on Parliament Hill.

1.10 APPLICATIONS FOR PROGRESS PAYMENT

- .1 Provide the following with each application for progress payment:
 - .1 A cost breakdown formatted per directions from the Departmental Representative.

- .2 An invoice containing the total progress of work to date and the total payment requested this period, supported by back-up documentation, such as sub-contractor invoices, as per Departmental Representative direction.
- .3 Required backup invoices and documents required by the General Conditions of the contract.
- .4 A copy of the updated monthly schedule.
- .5 A copy of the CD containing photos taken in the last period showing progress of work.
- .2 Submit applications for progress payment by end of each month.

1.11 COST BREAKDOWN

- .1 Ten (10) days after contract award, submit a detailed cost breakdown aggregating the Contract Amount. Revise as required by the Departmental Representative. Once approved by the Departmental Representative, the cost breakdown will be used as a basis for applications for payment.
- .2 The cost breakdown to include two payment types:
 - .1 Lump sum payments: based on quantities as provided by the General Contractor under the lump sum items.
 - .2 Unit price payment allowances: based on drawing down on the actual measured quantities as verified by the Departmental Representative and the General Contractor.
- .3 Include statement based on cost breakdown with each application for payment.
- .4 Support claims for products delivered to Place of Work but not yet incorporated into Work by such evidence as Departmental Representative may reasonably require establishing value and delivery of products.

1.12 NOISE CONTROL

- .1 Implement noise control measures as directed in sections.

1.13 GENERATOR

- .1 Provide generator as directed in sections.

1.14 SURVEYOR

- .1 Engage licensed surveyor services as directed in sections.
- .2 Use one surveyor company for the Work.

1.15 COORDINATION/INTERFERENCE CAD DRAWING / 3D MODEL

- .1 Engage services of specialist CAD drafting service to prepare and maintain coordination/interference drawings of the wall and 3D model for the Lookout to coordinate work between sections and for use in preparation of shop drawings required by sections and to resolve interference issues.
- .2 CAD Drawing for coordination/interference:
 - .1 Show wall for its entire length in plan, elevation path side and elevation slope side, and sections of typical/non-typical conditions.
 - .2 Show view of concrete shape of wall including footings; shelves, upstands, fall arrest anchors, bearing surfaces.
 - .3 Show view with masonry in place including face stones (generic representation conforming to depth and height, capstone and pier stones (actual shapes and sizes, with joints located).
 - .4 Show intersection with existing construction to remain including tunnels, portals, concrete wall, iron fencing.
 - .5 Show fence post locations.

- .6 Include finish grades and profiles of slope side and path side of wall.
- .7 This drawing may be done in 3D, with views exported to 2D.
- .3 3D Model to:
 - .1 Show Lookout construction to include 2 m length of the wall to the east and west of the Lookout.
 - .2 Show view of concrete shape of wall including footings; concrete slab, shelves, upstands, slab, paving, fall arrest anchors.
 - .3 Show view with masonry in place including face stones (generic representation conforming to depth and height, capstone and pier stones (actual shapes and sizes, with joints located).
 - .4 Show intersection with existing construction to remain including tunnel, portal, concrete protection over tunnel.
 - .5 Show fence post locations.
 - .6 Include finish grades and profiles of slope side and path side of wall.
- .4 Update drawing/model as information is revealed by excavations.
- .5 Submit as part of shop drawing process early in project in viewable 2d and 3d pdf format for review and acceptance by the Departmental Representative.
- .6 Submit digital copies per Section 01 33 00 – Submittal Procedures and Section 01 78 00 - Closeout Submittals to include:
 - .1 Original live CAD file;
 - .2 Exported to AUTOCAD DXF / DWG format.
 - .3 Views exported as PDFs.

1.16 MEDIA TRUCK

- .1 Allow for access for media truck in work area and re-configure construction hoarding as required.
- .2 Coordinate with Departmental Representative timing and requirements for access.
- .3 Allow for four (4) separate days when a media truck will require access to the area identified on the Mobilization Plan.
- .4 Insure that no material prevents media truck access to the designated spot.
- .5 Make good areas occupied by media truck.

1.17 MOBILIZATION AND PHASING OF WORK

- .1 Plan to mobilize and demobilize the work in a minimum of 2 phases: Phase 1: from contract award to October 1, 2015; Phase 2: October 1, 2015 to end of contract.
- .2 Coordinate with site activities.
- .3 Coordinate with other projects taking place on the Hill.
- .4 Arrange schedule to include phasing.
- .5 Coordinate with and obtain approval from the Departmental Representative for phasing.

1.18 LAMP POSTS

- .1 Lamp posts to be removed by Departmental Representative, as indicated on the drawings, after the Contractor has mobilized on site.
- .2 Allow five (5) days in schedule immediately after site fence is installed for Departmental Representative to remove lamp posts. The Contractor will turn over the site to the Departmental Representative for this duration.

- .3 Allow one week in schedule, immediately prior to final demobilizing for Departmental Representative to reinstall lamp posts. The Contractor will turn over the site to the Departmental Representative for this duration.
- .4 Install protection over lamp post bases.
- .5 The lamp post at approximately 0+99m to be removed and relocated by Contractor as indicated.
 - .1 Provide photographs to Departmental Representative prior to removal of lamp post.
 - .2 Store lamp post on site and protect from damage.
 - .3 Install protection over lamp post base prior to lamp post relocation and following relocation.
 - .4 Use licensed electricians to disconnect and reconnect to power supply and install temporary protection on wires.
 - .5 Confirm with Departmental Representative location of main junction boxes.
 - .6 After wall is rebuilt and landscaping is complete reinstall lamp post.
- .6 Touch-up lamp posts after reinstallation with paint approved by the Departmental Representative.
- .7 Change lamps and clean.

1.19 ELECTRICAL WORK

- .1 Engage licensed electricians to do electrical work.
- .2 Follow regulations and requirements from authorities having jurisdiction.
- .3 Obtain permits and inspections required for electrical work.
- .4 Modify, connect and reconnect electrical to accommodate the Work.
- .5 Assume electrical wiring is live before working on wiring and conduits, identify power source and shut down and lock out before starting work.
- .6 Where electrical is found to be redundant or made redundant by the Work, remove back to source. Where this is not practical remove back to the source then remove to nearest junction box or terminate per regulations. Obtain Departmental Representative approval before proceeding.

1.20 BEDROCK EXCAVATION

- .1 Remove bedrock as indicated.

1.21 CUTTING ON SITE

- .1 Cutting of stone on site should be minimized as much as possible. All stone, pavers and concrete to be saw-cut on site will be wet-cut.
- .2 Tooling and finishing for the wall stones is excluded from the clause above.

1.22 SLOPE PROTECTION AND ACCESS

- .1 Install protection and other measures to prevent material falling to the NCC pathway on the slope side of the wall.
- .2 Provide access measures to safely work on the slope side of the wall.

1.23 TRAFFIC CONTROL

- .1 Conduct traffic control measures in accordance with section 01 35 00 Special Procedures – Traffic Control.

- .2 Maintain pedestrian crossing at 1+47m. Ensure pedestrian crossing is maintained accessible after parking relocation. Remove pedestrian crossing and reinstate solid curb on project completion.

1.24 FROST PROTECTION

- .1 Design and install systems to prevent ground from freezing so that the Work can continue during the heating season.
- .2 Systems include: insulation, weather tight enclosures, heating systems.

1.25 HAZARDOUS MATERIAL TESTING

- .1 The Contractor is to make a waste pile at location indicated by Departmental Representative, and make it available for the Departmental Representative to take specimens to be tested (e.g. a representative demolition/removal pile that includes ironwork, masonry, foundation and path materials,) within 30 days of contract award and before any material is taken off site for disposal.
- .2 Allow 5 days for the Departmental Representative to perform a leachate test which will determine if the waste will be considered hazardous waste or not.
- .3 No material shall be disposed of prior to the results of the leachate test and without approval from Departmental Representative.
- .4 If material is determined to be a hazardous waste, material will be removed and disposed of under the "Hazardous Materials" unit rate prices .
- .5 Departmental Representative will provide a copy of the results of the testing and direction for how to proceed.
- .6 Follow other direction provided in Section 01 14 25 – Designated Substance Report, Section 01 74 21 – Construction / Demolition Waste Management and Disposal, Section 02 41 13 - Selective Site Demolition.

1.26 INVENTORY

- .1 Within ten (10) days of contract award submit inventory of items to be removed from site, including tagging and label information, storage location and protective measures.

1.27 MOWING GRASS

- .1 The Contractor shall make regular mowing of existing lawn areas to be preserved, keeping the grass to a maximum height of as directed by the Departmental Representative, within the limits of the job site, to ensure the work area does not become unkempt over time.

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 REGULATORY REQUIREMENTS

.1 An investigation into the presence of designated substances for the North Perimeter Wall Rehabilitation – Phase III Project at the Parliament Hill in Ottawa, Ontario was performed in order to meet the requirements of the Canada Labour Code under Part II, Section 124 that every employer shall ensure that the health and safety at work of every person employed by the employer is protected. Also, it was performed to meet the requirements of Section 30 of the Ontario Occupational Health and Safety Act, Revised Statutes of Ontario, 1990, Chapter 0.1. Furthermore, Section 125(1)(z.14) of the *Canada Labour Code* stipulates that the employer, to the extent that he controls the activity, will take all reasonable care to ensure that all persons granted access to the work place, other than the employer's employees, are informed of every known or foreseeable health and safety hazard to which they are likely to be exposed in the work place. By having a Designated Substances Report (DSR) conducted, the Departmental Representative will be able to inform his or her employees, contractors, and tenants of any designated substances that may be present and possibly disturbed throughout the duration of the project. The informed Departmental Representative will then be able to impose appropriate health and safety precautions for all applicable personnel as required.

.2 The designated substances identified in the *Occupational Health and Safety Act* and its corresponding regulations are:

- .1 **Acrylonitrile:** "Designated Substances"
O. Reg 490/09, as amended.
- .2 **Arsenic:** "Designated Substances"
O. Reg 490/09, as amended.
- .3 **Asbestos:**
 - .1 "Designated Substances"
O. Reg 490/09, as amended.
 - .2 "General – Waste Management"
O. Reg 347/90, as amended
 - .3 "Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations" *O.Reg 278/05* (as amended)
- .4 **Benzene:** "Designated Substances"
O. Reg 490/09, as amended.
- .5 **Coke Oven Emissions:** "Designated Substances" *O. Reg 490/09*, as amended.
- .6 **Ethylene Oxide:** "Designated Substances"
O. Reg 490/09, as amended.
- .7 **Isocyanates:** "Designated Substances"
O. Reg 490/09, as amended.

- .8 **Lead:**
- .1 "Designated Substances"
O. Reg 490/09, as amended.
 - .2 "General – Waste Management"
O. Reg 347/90, as amended
 - .3 *Canada Consumer Product Safety Act's Surface Coating Materials Regulations SOR/2005-109* (as amended)
- .9 **Mercury:**
- .1 "Designated Substances"
O. Reg 490/09, as amended.
 - .2 "General – Waste Management"
O. Reg 347/90, as amended
- .10 **Silica:** "Designated Substances"
O. Reg 490/09, as amended.
- .11 **Vinyl Chloride:** "Designated Substances"
O. Reg 490/09, as amended.
- .3 All contractors requesting tenders from subcontractors shall furnish this report to subcontractors.

1.2 VALIDITY DATE

- .1 El Houcine Faouzi from Environmental Services Directorate of the Real Property Branch, PWGSC, conducted the on-site survey for this report on December 4, 2014.
- .2 The work area is located at the Parliament Hill in Ottawa, Ontario. The scope of the work proposed consists It includes the following physical activities:
- Repair, deconstruction and reconstruction of the stone walls and concrete foundation;
 - Rehabilitation of the ironwork railing;
 - Drainage improvement;
 - Excavation and backfilling of foundation and on-site stockpiling;
 - Removal of vegetation;
 - Paving and landscaping; and
 - Installation of permanent fall arrest anchors on the escarpment.
- .1 The scope of work for this report involved a visual inspection of construction materials and contents for the presence of suspected designated substances in the project area.
- .2 From the visual inspection, suspect materials were sampled (where necessary) and analyzed, where appropriate, for select designated substances. On the basis of this inspection, a total of seven (7) bulk cinder samples, suspected of containing lead and asbestos, were collected under the path in the project area, at two different depths.

- .3 The samples were submitted for analysis to the EXOVA Laboratory (accredited by the Canadian Association for Laboratory Accreditation (CALA) and National Voluntary Laboratory Accreditation Program (NAVLAP)) located at 146 Colonnade Road, Unit 8, Nepean, Ontario.
- .4 The visual inspection was limited to readily accessible areas. Destructive testing was not included in the investigation, but is recommended prior to any major demolition. No confined space was accessed for the purpose of this report.
- .5 Previous laboratory results included in the Designated Substance Report completed for the North Perimeter Wall Rehabilitation – Phase 1 Project were referenced as part of this section:
- .6 It is possible that the designated substances aforementioned are present in non-accessible areas and concealed spaces or confined spaces. No other areas outside the defined work boundaries have been assessed.
- .7 Prior to beginning work, it must be confirmed with the Departmental Representative that no additional designated substances have been brought to the project area.
- .8 Polychlorinated biphenyls (PCBs) and halocarbons are also included as part of the survey completed on October 15, 2014.
- .9 There is a possibility that materials which could not be reasonably identified within the scope of this assessment or which were not apparent during previous site visits may exist. Should any designated substance be encountered in the course of demolition, work must be stopped, precautionary measures taken, and the Departmental Representative must be notified immediately. **Do not proceed until written instructions have been received.**

PART 2 - DESIGNATED SUBSTANCES

2.1 SURVEY RESULTS

- .1 **ACRYLONITRILE:** Not Identified
- .2 **ARSENIC:** Not Identified
- .3 **ASBESTOS:** Not Identified

1 Asbestos is a naturally occurring material. In general, it has historically been intentionally added to many building materials in the construction industry to increase thermal or chemical resistance properties. More common uses are thermal insulation for pipes and boilers, structural steelwork fireproofing, floor tiles and in-wall and ceiling plasters. There are two classes of asbestos- containing materials: friable and non-friable. Friable asbestos-containing materials are loose in composition or can be easily crumbled using hand pressure. Non-friable asbestos-containing materials are more durable and are held together by a binder such as cement, vinyl or asphalt.

2 Representative cinder bulk samples, collected from the project areas have been analyzed for asbestos. Table 1 summarizes the analytical results of bulk samples collected during the site investigation:

Table 1: Asbestos Sample Results by Polarized Light Microscopy (PLM)

Sample ID	Material	Location	Asbestos Type	Asbestos content (%)
PPBNW-AS-1A	Cinder	Under the path from the middle, North Wall Perimeter – Phase 3 project area	n/a	n/d
PPBNW-AS-1B			n/a	n/d
PPBNW-AS-1C		Under the path from the bottom,, North Wall Perimeter – Phase 3 project area	n/a	n/d

n/d = none detected, n/a = not applicable

3. Based on the analytical results, no asbestos was detected in cinder bulk samples collected from the project areas:

- .4 **BENZENE:** Not Identified
- .5 **COKE OVEN EMISSIONS:** Not Identified
- .6 **ETHYLENE OXIDE:** Not Identified
- .7 **ISOCYANATES:** Not Identified
- .8 **LEAD: Identified**

.1 Lead is a naturally occurring metal. It was used primarily in paint prior to the 1980's to speed up drying, increase durability, maintain a fresh appearance, and resist moisture that causes corrosion. Lead in paint becomes a danger when it is old or damaged, as it creates lead dust and chips. Lead can also be found in soldered joints installed on piping up to the mid 1990s and in older cast iron bell and spigot joints.

.2 According to the *Canada Consumer Product Safety Act's Surface Coating Materials Regulations SOR/2005-109* (as amended) allowable concentration of lead in surface coatings is 90mg/kg which is equivalent to 90 parts per million (ppm).

.3 The Table 2 below outlines the analytical lead results of the bulk cinder sample collected from the project areas as well as lead results of the bulk material samples previously collected from the phase 1 project area that are applicable to the phase III project area.

Table 2 - Lead Sample Results

Sample number	Description	Location	Lead Content (ppm)
PPBNW-Pb-1	Cinder material	Under the path, North Wall Perimeter – Phase 3 project area	31
*NPB-Pb-1	Mortar on stones	Between piers 1 to 17, east side, Parliament Hill	220
*NPB-Pb-3	Mortar on stones	Between piers 46 to 51, west side, Parliament Hill	20900
*NPB-Pb-4	Black paint	On the fence between piers 46 to 51, west side, Parliament Hill	20

Bold items exceed the 90 ppm limit for lead, as per the *Canada Consumer Product Safety Act's Surface Coating Materials Regulations SOR/2005-109* (as amended).

Referenced in 'Designated Substances Report for the North Perimeter Wall Rehabilitation Project at the Parliament Hill, Ottawa, Ontario, July 2011, (PN R.011800.012)'

.4 Laboratory analysis results indicate that the mortar in the project area has a lead content above 90 ppm (NPB-Pb-1 and NPB-Pb-2) and is considered to be 'lead-based' as per the *Canada Consumer Product Safety Act's Surface Coating Materials Regulations SOR/2005-109* (as amended). The Table 2 also indicate that trace amounts of lead were identified in the cinder sample (PPBNW-Pb-1) and the black paint sample collected from the fence (NPB-Pb-4) in the project areas.

.9 **MERCURY:** Not Identified

.10 **SILICA:** Identified

.1 Free crystalline silica is present in concrete, crushed tones, top soil and masonry throughout the project areas.

.11 **VINYL CHLORIDE MONOMER:** Not Identified

.12 **POLYCHLORINATED BIPHENYLS (PCBs):** Not Identified

.13 **HALOCARBONS:** Not Identified

2.2 RECOMMENDATIONS

1. LEAD

.1 If lead-containing materials are disturbed (i.e. during dry sanding, grinding, polishing and

- sawing operations), then proper precautions, as outlined under *Regulation 490/09* (as amended) of the *Ontario Occupational Health and Safety Act*, must be followed.
- .2 Under *Regulation 490/09* (as amended), regulatory limits have been established for occupational exposure limits to airborne lead that may be present in a workplace. The Time Weighted Average Exposure Values to airborne lead dust or fumes should not exceed the Ministry of Labour's 0.05 milligram per cubic metre (mg/m^3) limit during the removal of paints and products containing any concentration of lead. The TWAEV represents the time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, to which it is believed that nearly all workers may be repeatedly exposed, day after day, without adverse health effects.
 - .3 Contractors performing work that requires disturbance of lead-containing materials are responsible to ensure that the workers are not exposed to airborne lead dust levels in excess of the time-weighted average Exposure Concentration for lead-containing paints. It should be noted that the use of mechanically-powered tools or torches on lead-containing materials increases the concentration of airborne lead dust or fumes and thereby requiring more stringent respiratory protection and controlled work procedures.
 - .4 Ontario Ministry of Labour (MoL) has published the document entitled "*Guideline: Lead on Construction Projects*". This document classifies all disturbances of lead-containing materials as Type 1, Type 2a, Type 2b, Type 3a or Type 3b work, based on presumed airborne concentrations of lead generated during the work each of which will have defined work practices. Although this document is not a regulation, Ministry of Labour Inspectors use it as guidance during site inspections.
 - .5 The disposal of construction waste containing lead is controlled by "*General – Waste Management*" O.Reg 347/90 (as amended) under the *Ontario Environmental Protection Act*. The classification of the waste is dependent upon the result(s) of leachate test(s). The waste can be classified as "hazardous", "non-hazardous" or "registerable solid waste", depending on the results of the leachate test.

2. SILICA

- .1 Silica is governed by the *Regulation 490/09* (as amended) under the *Ontario Occupational Health and Safety Act*. The regulation provides requirements for allowable exposure levels.
- .2 Silica dust can be generated through such processes as blasting, grinding, crushing, and sandblasting silica-containing material. Since silica is present in concrete, crushed tones, top soil and masonry in the project areas, appropriate respiratory protection and ventilation must be provided during the demolition and modifications of these structures.
- .3 The Occupational Health and Safety Branch of the Ontario Ministry of Labour (MoL) has published the document entitled "*Guideline: Silica on Construction Projects*". This document classifies the disturbance of materials containing silica as Type 1, Type 2 or Type 3 work, and assigns different levels of respiratory protection and work procedures for each classification. These work procedures should be followed when performing work involving the disturbance of silica-containing materials.

3. CONTRACTORS DUTIES

The contractor must review the designated substance report and take the necessary precautions to protect the health and safety of the workers and the environment. As per Section 30(4) of the *Ontario Occupational Health and Safety Act*, the party hiring the contractor (i.e. Departmental Representative) shall ensure that the contractor and subcontractor (if any) for the project has received a copy of the designated substance report prior to entering a binding contract for the supply of work on the project. As per Section 27(2) (a, b, and c) of the *Ontario Occupational Health and Safety Act*, while onsite, the contractor supervisor shall exercise every reasonable precaution for the protection of a worker. If you have any questions about the designated substance report, please contact the Departmental Representative.

END OF SECTION

PART 1 GENERAL

1.1 RELATED SECTIONS

- .1 Not Used.

1.2 APPOINTMENT AND PAYMENT

- .1 Departmental Representative will appoint and pay for services of testing laboratory except as follows:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's convenience.
 - .3 Mill tests and certificates of compliance.
 - .4 Tests specified to be carried out by Contractor under the supervision of Departmental Representative.
- .2 Where tests or inspections by designated testing laboratory reveal Work not in accordance with contract requirements, pay costs for additional tests or inspections as required by Departmental Representative to verify acceptability of corrected work.

1.3 CONTRACTOR'S RESPONSIBILITIES

- .1 Provide labour, equipment and facilities to:
 - .1 Provide access to Work for inspection and testing.
 - .2 Facilitate inspections and tests.
 - .3 Make good Work disturbed by inspection and test.
 - .4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.
- .2 Notify Departmental Representative sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.
- .3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
- .4 Pay costs for uncovering and making good Work that is covered before required inspection or testing is completed and approved by 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

PART 1 GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 32 16 - Construction Progress Schedule - Critical Path Method (CPM).
- .3 Section 01 52 00 - Construction Facilities.
- .4 Section 01 56 00 - Temporary Barriers and Enclosures.
- .5 Section 01 78 00 - Closeout Submittals.

1.2 ADMINISTRATIVE

- .1 Schedule and administer project meetings throughout the progress of the work and at the call of Departmental Representative.
- .2 Distribute written notice of each meeting four (4) days in advance of meeting date to Departmental Representative.
- .3 Meetings will take place at the Contractor's site trailer. The Contractor will provide a well-lit, conditioned space for the meeting including tables and chairs.
- .4 At the discretion of the Departmental Representative, meetings may be held at 107 Sparks St., Ottawa.
- .5 Preside at meetings.
- .6 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

1.3 PRECONSTRUCTION MEETING

- .1 Within five (5) working days of award of Contract, attend a Preconstruction Meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2 Senior representatives of Departmental Representative, Departmental Representatives, General Contractor, key Subcontractors, field inspectors and supervisors will be in attendance.
- .3 The Preconstruction Meeting will be held at PWGSC offices at 107 Sparks St., Ottawa as arranged by the Departmental Representative. A site visit will follow the meeting on the same day.
- .4 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
- .5 Agenda to include:
 - .1 Appointment of official representative of participants in the Work.
 - .2 Schedule of Work: in accordance with Section 01 32 16 - Construction Progress Schedule - Critical Path Method (CPM).
 - .3 Two-Week Look-Ahead schedule.
 - .4 Schedule of submission of shop drawings, samples, mock-ups and colour chips. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
 - .5 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00 - Construction Facilities.
 - .6 Delivery schedule of specified equipment.
 - .7 Site security in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

- .8 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements.
- .9 Departmental Representative provided products.
- .10 Record drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .11 Maintenance manuals in accordance with Section 01 78 00 - Closeout Submittals.
- .12 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
- .13 Monthly progress payments, administrative procedures, photographs, and hold backs.
- .14 Appointment of inspection and testing agencies or firms.
- .15 Insurances and transcript of policies.
- .16 Security clearances and application processes.
- .17 Health and safety, training, certificates, reports, permits, SSHSP, and site orientation.
- .18 Traffic plan.
- .19 Work stoppages.
- .20 Cost breakdown.
- .21 Other items per PPB Construction Start-Up Meeting Checklist, that the Departmental Representative will provide.

1.4 PROGRESS MEETINGS

- .1 During course of Work and two (2) weeks prior to project completion, schedule progress meetings every two (2) weeks or as scheduled by Departmental Representative.
- .2 Contractor, Subcontractors involved in the Work, Consultants, and Departmental Representative are to be in attendance.
- .3 Notify parties a minimum of four (4) days prior to each meeting.
- .4 The Departmental Representative will record minutes of meetings and circulate to attending parties and affected parties not in attendance within two (2) days after meeting.
- .5 Agenda to include the following:
 - .1 Review approval of minutes of previous meeting.
 - .2 Review of Work progress since previous meeting.
 - .3 Field observations, problems, conflicts.
 - .4 Problems which impede construction schedule.
 - .5 Review of off-site fabrication delivery schedules.
 - .6 Corrective measures and procedures to regain projected schedule.
 - .7 Revision to construction schedule.
 - .8 Progress schedule, during succeeding work period.
 - .9 Review submittal schedules: expedite as required.
 - .10 Maintenance of quality standards.
 - .11 Review proposed changes for affect on construction schedule and on completion date.
 - .12 Other business.
- .6 Submit a Two Week Look-ahead Schedule showing daily activities expected in the next 2 weeks for discussion at each progress meeting per Section 01 32 16 - Construction Progress Schedule - Critical Path Method (CPM).
 - .1 Submit a template of the Two Week Look-ahead to the Departmental Representative for approval two (2) days in advance of the Preconstruction Meeting.
 - .2 Submit the Two Week Look-ahead Schedule to the Departmental Representative two (2) days in advance of each progress meeting.

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 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.

1.2 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 Actual Finish Date (AF): point in time that Work actually ended on activity
- .3 Actual Start Date (AS): point in time that Work actually started on activity.
- .4 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.
- .5 Baseline: original approved plan (for Project, work package, or activity), plus or minus approved scope changes.
- .6 Completion Milestones: they are firstly Interim Certificate, or Substantial Completion and secondly Final Certificate.
- .7 Constraint: applicable restriction that will affect performance of Project. Factors that affect activities can be scheduled.
- .8 Control: process of comparing actual performance with planned performance, analyzing variances, evaluating possible alternatives, and taking appropriate corrective action as needed.
- .9 Critical Activity: any activity on a critical path. Most commonly determined by using critical path method.
- .10 Critical Path: series of activities that determines duration of Project. In deterministic model, critical path is usually defined as those activities with float less than or equal to specified value, often zero. It is longest path through Project.
- .11 Critical Path Method (CPM): network analysis technique used to predict Project duration by analyzing which sequence of activities (which path) has least amount of scheduling flexibility (least amount of float).
- .12 Data Date (DD): date at which, or up to which, Project's reporting system has provided actual status and accomplishments.
- .13 Duration (DU): number of work periods (not including holidays or other non-working periods) required to complete activity or other Project element. Usually expressed as workdays or work weeks.
- .14 Early Finish Date (EF): in critical path method, earliest possible point in time on which uncompleted portions of activity (or Project) can finish, based on network logic and schedule constraints. Early finish dates can change as Project progresses and changes are made to Project plan.
- .15 Early Start Date (ES): in critical path method, earliest possible point in time on which uncompleted portions of activity (or Project) can start, based on network logic and schedule constraints. Early start dates can change as Project progresses and changes are made to Project Plan.

- .16 Finish Date: point in time associated with activity's completion. Usually qualified by one of following: actual, planned, estimated, scheduled, early, late, baseline, target, or current.
- .17 Float: amount of time that activity may be delayed from its early start without delaying Project finish date. Float is mathematical calculation, and can change as Project progresses and changes are made to Project plan.
- .18 Lag: modification of logical relationship that directs delay in successor task.
- .19 Late Finish Date (LF): in critical path method, latest possible point in time that activity may be completed without delaying specified milestone (usually Project finish date).
- .20 Late Start Date (LS): in critical path method, latest possible point in time that activity may begin without delaying specified milestone (usually Project finish date).
- .21 Lead: modification of logical relationship that allows acceleration of successor task.
- .22 Logic Diagram: see Project network diagram.
- .23 Master Plan: summary-level schedule that identifies major activities and key milestones.
- .24 Milestone: significant event in Project, usually completion of major deliverable.
- .25 Monitoring: capture, analysis, and reporting of Project performance, usually as compared to plan.
- .26 Near-Critical Activity: activity that has low total float.
- .27 Non-Critical Activities: activities which when delayed, do not affect specified Contract duration.
- .28 Project Control System: fully computerized system utilizing commercially available software packages.
- .29 Project Network Diagram: schematic display of logical relationships of Project activities. Always drawn from left to right to reflect Project chronology.
- .30 Project Plan: formal, approved document used to guide both Project execution and Project control. Primary uses of Project plan are to document planning assumptions and decisions, facilitate communication among stakeholders, and document approved scope, cost, and schedule baselines. Project plan may be summary or detailed.
- .31 Project Planning: development and maintenance of Project Plan.
- .32 Project Planning, Monitoring and Control System: overall system operated by Representative to enable monitoring of Project Work in relation to established milestones.
- .33 Project Schedule: planned dates for performing activities and 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.
- .34 Quantified days duration: working days based on 5 day work week, discounting statutory holidays.
- .35 Risk: uncertain event or condition that, if it occurs, has positive or negative effect on Project's objectives.
- .36 Scheduled Finish Date (SF): point in time that Work was scheduled to finish on activity. Scheduled finish date is normally within range of dates delimited by early finish date and late finish date.

- .37 Scheduled Start Date (SS): point in time that Work was scheduled to start on activity. Scheduled start date is normally within range of dates delimited by early start date and late start date.
- .38 Start Date: point in time associated with activity's start, usually qualified by one of following: actual, planned, estimated, scheduled, early, late, target, baseline, or current.
- .39 Work Breakdown Structure (WBS): deliverable-oriented grouping of project elements that organizes and defines total Work scope of Project. Each descending level represents increasingly detailed definition of Project Work.

1.3 SYSTEM DESCRIPTION

- .1 Construction Progress Schedule to be developed and maintained using MS Project software only.
- .2 Construction Progress Schedule (Project Time Management): describes processes required to ensure timely completion of Project. These processes ensure that various elements of Project are properly co-ordinated. It consists of planning, time estimating, scheduling, progress monitoring and control.
- .3 Planning: this is most basic function of management, that of determining presentation of action and is essential.
 - .1 It involves focusing on objective consideration of future, and integrating forward thinking with analysis; therefore, in planning, implicit assumptions are made about future so that action can be taken today.
 - .2 Planning and scheduling facilitates accomplishment of objectives and should be considered continuous interactive process involving planning, review, scheduling, analysis, monitoring and reporting.
- .4 Ensure that planning process is iterative and results in generally top-down processing with more detail being developed as planning progresses, and decisions concerning options and alternatives are made. This implies progressively more reliability of scheduling data. Detail Project schedule is used for analysis and progress monitoring.
- .5 Ensure project schedule efficiencies through monitoring.
 - .1 When activities begin on time and are performed according to estimated durations without interruptions, original Critical Path will remain accurate. Changes and delays will however, create an essential need for continual monitoring of Project activities.
 - .2 Monitor progress of Project in detail to ensure integrity of Critical Path, by comparing actual completions of individual activities with their scheduled completions, and review progress of activities that has started but are not yet completed.
 - .3 Monitoring should be done sufficiently often so that causes of delays are immediately identified and removed if possible.
- .6 Project monitoring and reporting: as Project progresses, keep team aware of changes to schedule, and possible consequences. In addition to Bar Charts and CPM networks, use narrative reports to provide advice on seriousness of difficulties and measures to overcome them.
 - .1 Narrative reporting begins with statement on general status of Project followed by summarization of delays, potential problems, corrective measures and Project status criticality.

1.4 CPM REQUIREMENTS

- .1 Ensure Master Plan and Detail Schedule are practical and remain within specified Contract duration.
- .2 Master Plan and Detail Schedule deemed impractical by Departmental Representative are revised and resubmitted for approval.

- .3 Acceptance of Master Plan and Detail Schedule showing scheduled Contract duration shorter than specified Contract duration does not constitute change to Contract. Duration of Contract may only be changed through bilateral Agreement.
- .4 Consider Master Plan and Detail Schedule deemed practical by Departmental Representative showing Work completed in less than specified Contract duration, to have float.
- .5 First Milestone on Master Plan and Detail Schedule will identify start Milestone with an "ES" constraint date equal to Award of Contract date.
- .6 Calculate dates for completion milestones from Plan and Schedule using specified time periods for Contract.
- .7 Interim Certificate and Substantial Completion with "LF" constraint equal to calculated date.
- .8 Calculations on updates to be such that if early finish of Interim Certificate falls later than specified Contract duration then float calculation to reflect negative float.
- .9 Delays to non-critical activities, those with float may not be basis for time extension.
- .10 Do not use float suppression techniques such as software constraints, preferential sequencing, special lead/lag logic restraints, extended activity times or imposed dates other than required by Contract.
- .11 Allow for and show Master Plan and Detail Schedule adverse weather conditions normally anticipated. Specified Contract duration has been predicated assuming normal amount of adverse weather conditions.
- .12 Provide necessary crews and manpower to meet schedule requirements for performing Work within specified Contract duration. Simultaneous use of multiple crews on multiple fronts on multiple critical paths may be required.
- .13 Arrange participation on and off site of subcontractors and suppliers, as required by Departmental Representative, for purpose of network planning, scheduling, updating and progress monitoring. Approvals by Departmental Representative of original networks and revisions do not relieve Contractor from duties and responsibilities required by Contract.
- .14 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.

1.5 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to Departmental Representative Project Control System for planning, scheduling, monitoring and reporting of project progress.
- .3 Submit Project Control System to Departmental Representative for approval; failure to comply with each required submission, may result in progress payment being withheld in accordance with Federal Government's Terms of Payment "B".
- .4 Include costs for execution, preparation and reproduction of schedule submittals in bid documents.
- .5 Submit letter ensuring that schedule has been prepared in co-ordination with major sub-contractors.
- .6 Refer to article "Progress monitoring and reporting" of this specification Section for frequency of Project control system submittals.
- .7 Submit Project planning, monitoring and control system data as part of initial schedule submission and monthly status reporting in following form.

- .1 CD files in original scheduling MS Project software and PDF format containing schedule and cash flow information, labelled with data date, specific update, and person responsible for update.
- .2 Master Plan Bar Chart.
- .3 Construction Detail schedule Bar Chart.
- .4 Listing of project activities including milestones and logical connectors, networks (sub-networks) from Project start to end. Sort activities by activity identification number and accompany with descriptions. List early and late start and finish dates together with durations, codes and float.
- .5 Criticality report listing activities and milestones with negative, zero, and, up to 5 days total float used as first sort for ready identification of critical or near critical paths through entire project. List early and late starts and finishes dates, together with durations, codes and float for critical activities.
- .6 Progress report in early start sequence, listing for each trade, activities due to start, underway, or finished within two months from monthly update date. List activity identification number, description and duration. Provide columns for entry of actual start and finish dates, duration remaining and remarks concerning action required.
- .8 Update and submit a Two Week Look-ahead schedule a minimum of two (2) days in advance of each progress meeting.
- .9 Update and submit the Construction Detail Schedule:
 - .1 Every time there are major changes;
 - .2 Before each project meeting.
 - .3 With each invoice.

1.6 QUALITY ASSURANCE

- .1 Use experienced personnel, fully qualified in planning and scheduling to provide services from start of construction to Final Certificate, including Commissioning.

1.7 PROJECT MEETING

- .1 Meet with Departmental Representative within five (5) working days of Award of Contract date to coordinate work activities and establish the construction schedule requirements.

1.8 WORK BREAKDOWN STRUCTURE (WBS)

- .1 Prepare construction Work Breakdown Structure (WBS) within ten (10) working days of Award of Contract date. Develop WBS through at least five levels: Project, stage, element, sub-element and work package.

1.9 PROJECT MILESTONES

- .1 Project milestones form targets for both Master Plan and Detail Schedule of CPM construction network system:
 - .1 Show two stages of mobilization to accommodate access to Summer Pavilion:
 - .1 Phase 1: Contract award to Oct 1, 2015.
 - .2 Phase 2: Oct 1, 2015 to end of contract.
 - .2 Mandatory: Replacement masonry wall stone supplied by Departmental Representative by December 1st, 2015. Earliest stone will be available is June 3rd, 2015.
 - .3
- .2 Other milestones to be included, but not limited to, in the Master Plan and Detail Schedule of CPM construction network system:
 - .1 Installation of temporary barriers, site trailer and traffic control measures.
 - .2 Lamp posts removal and reinstallation by Departmental Representative.

- .3 Relocation of parking spots and parking modifications.
- .4 Start of excavations and archaeological monitoring.
- .5 Construction waste demolition pile for testing.
- .6 Vegetation removal.
- .7 Interruption to services.
- .8 Installation of heated enclosure.
- .9 Temporary road lane closures.
- .10 Connection of new sub-drains to existing storm drain and repairs to existing storm drain.
- .11 All testing.
- .12 Quality control inspections for limestone pavers and borders.
- .13 Limestone paver sample submittals.
- .14 Key submittals affecting progress of the Work.
- .15 Mock-up reviews.

1.10 MASTER PLAN

- .1 Structure and base CPM construction networks system on WBS coding in order to ensure consistency throughout Project.
- .2 Prepare comprehensive construction Master Plan (CPM logic diagram) and dependent Cash Flow Projection within ten (10) working days of finalizing Agreement to confirm validity or alternates of identified milestones.
 - .1 Master Plan will be used as baseline.
 - .1 Revise baseline as conditions dictate and as required by Departmental Representative.
 - .2 Departmental Representative will review and return revised baseline within ten (10) work days.
- .3 Reconcile revisions to Master Plan and Cash Flow Projections with previous baseline to provide continuous audit trail.
- .4 Initial and subsequent Master Plans will include:
 - .1 CD containing schedule and cash flow information, clearly labelled with data date, specific update, and person responsible for update.
 - .2 Bar chart identifying coding, activity durations, early/late and start/finish dates, total float, completion as percentile, current status and budget amounts.
 - .3 Network diagram showing coding, activity sequencing (logic), total float, early/late dates, current status and durations.
 - .4 Actual/projected monthly cash flow: expressed annually and monthly and shown in both graphical and numerical form.

1.11 DETAIL SCHEDULE

- .1 Provide detailed project schedule (CPM logic diagram) within ten (10) working days of Award of Contract date showing activity sequencing, interdependencies and duration estimates. Include listed activities as follows:
 - .1 Shop drawings.
 - .2 Samples.
 - .3 All other submittals (e.g. noise control plan).
 - .4 Approvals.
 - .5 Procurement.
 - .6 Enclosures and site protection.
 - .7 Excavation and archaeological monitoring.
 - .8 Demolition and construction.
 - .9 Installation.
 - .10 Site works.
 - .11 Testing and inspections.

- .12 Commissioning and acceptance.
- .13 Close out documents submission.
- .14 Substantial Completion.
- .15 Final Completion.
- .2 Detail CPM schedule to cover in detail minimum period of two (2) months beginning from Award of Contract date with each activity duration approximately five (5) days.
 - .1 Show remaining activities for CPM construction network system up to Final Certificate and develop complete detail as project progresses.
 - .2 Detail activities completely and comprehensively throughout duration of project.
- .3 Relate Detail Schedule activities to basic activities and milestones developed and approved in Master Plan.
- .4 Clearly show sequence and interdependence of construction activities and indicate:
 - .1 Start and completion of all items of Work, their major components, and interim milestone completion dates.
 - .2 Activities for procurement, delivery, installation and completion of each major piece of equipment, materials and other supplies, including:
 - .1 Time for submittals, resubmittals and review.
 - .2 Time for fabrication and delivery of manufactured products for Work.
 - .3 Interdependence of procurement and construction activities.
 - .3 Include sufficient detail to assure adequate planning and execution of Work. Activities should generally range in duration from three (3) to fifteen (15) workdays each.
- .5 Provide level of detail for project activities such that sequence and interdependency of Contract tasks are demonstrated and allow co-ordination and control of project activities. Show continuous flow from left to right.
- .6 Ensure activities with no float are calculated and clearly indicated on logical CPM construction network system as being, whenever possible, continuous series of activities throughout length of Project to form "Critical Path". Increased number of critical activities is seen as indication of increased risk.
- .7 Insert Change Orders in appropriate and logical location of Detail Schedule. After analysis, clearly state and report to Departmental Representative for review effects created by insertion of new Change Order.

1.12 REVIEW OF THE CONSTRUCTION DETAIL SCHEDULE

- .1 Allow five (5) work days for review by Departmental Representative of proposed construction Detail Schedule.
- .2 Upon receipt of reviewed Detail Schedule make necessary revisions and resubmit to Departmental Representative for review within five (5) work days.
- .3 Promptly provide additional information to validate practicability of Detail Schedule as required by Departmental Representative.
- .4 Submittal of Detail Schedule indicates that it meets Contract requirements and will be executed generally in sequence.

1.13 COMPLIANCE WITH DETAIL SCHEDULE

- .1 Comply with reviewed Detail Schedule.
- .2 Proceed with significant changes and deviations from scheduled sequence of activities that cause delay, only after written receipt of approval by Departmental Representative
- .3 Identify activities that are behind schedule and causing delay. Provide measures to regain slippage.

- .1 Corrective measures may include:
 - .1 Increase of personnel on site for effected activities or work package.
 - .2 Increase in materials and equipment.
 - .3 Overtime work and/or additional work shifts.
- .4 Submit to Departmental Representative, justification, project schedule data and supporting evidence for approval of extension to Contract completion date or interim milestone date when required. Include as part of supporting evidence:
 - .1 Written submission of proof of delay based on revised activity logic, duration and costs, showing time impact analysis illustrating influence of each change or delay relative to approved contract schedule.
 - .2 Prepared schedule indicating how change will be incorporated into the overall logic diagram. Demonstrate perceived impact based on date of occurrence of change and include status of construction at that time.
 - .3 Other supporting evidence requested by Departmental Representative.
 - .4 Do not assume approval of Contract extension prior to receipt of written approval from Departmental Representative.
- .5 In event of Contract extension, display in Detail Schedule that scheduled float time available for work involved has been used in full without jeopardizing earned float.
 - .1 Departmental Representative will determine and advise Contractor number of allowable days for extension of Contract based on project schedule updates for period in question, and other factual information.
 - .2 Construction delays affecting project schedule will not constitute justification for extension of contract completion date.

1.14 PROGRESS MONITORING AND REPORTING

- .1 Project construction Progress Meetings to occur every two (2) weeks in accordance with Section 01 31 19 – Project Meetings.
- .2 On ongoing basis, Detail Schedule on job site must show "Progress to Date". Arrange participation on and off site of subcontractors and suppliers, as, and when necessary, for purpose of network planning, scheduling, updating and progress monitoring. Inspect Work with Departmental Representative at least once monthly to establish progress on each current activity shown on applicable networks.
- .3 Update and reissue project Work Breakdown Structure and relevant coding structures as project develops and changes.
- .4 Perform Detail Schedule update monthly with status dated (Data Date) on last working day of month. Update to reflect activities completed to date, activities in progress, logic and duration changes.
- .5 Do not automatically update actual start and finish dates by using default mechanisms found in project management software.
- .6 Submit to Departmental Representative copies of updated Detail Schedule.
- .7 Requirements for monthly progress monitoring and reporting are basis for progress payment request.
- .8 Submit monthly written report based on Detail Schedule, showing Work to date performed, comparing Work progress to planned, and presenting current forecasts. Report must summarize progress, defining problem areas and anticipated delays with respect to Work schedule, and critical paths. Explain alternatives for possible schedule recovery to mitigate any potential delay. Include in report:
 - .1 Description of progress made.
 - .2 Pending items and status of: permits, shop drawings, Change Orders, possible time extensions.

- .3 Status of Contract completion date and milestones.
- .4 Current and anticipated problem areas, potential delays and corrective measures.
- .5 Review of progress and status of Critical Path activities.

1.15 Two Week Look-Ahead

- .1 Prepare and submit Two Week Look-ahead schedule to include:
 - .1 Upcoming work for the next ten (10) work days.
 - .2 Installation and mock-ups.
 - .3 Quality control inspections.
 - .4 Other significant activities as identified in Detail Schedule.

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 RELATED SECTIONS

- .1 Section 01 45 00 - Quality Control.

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 Provide the Departmental Representative with a Submittal Tracking Summary no later than ten (10) days after receipt of Notice to Proceed. The Submittal Tracking Summary must include:
 - .1 Project title and number.
 - .2 The title and description of each submittal required.
 - .3 The relevant specification section number and title.
 - .4 The estimated date of submission.
 - .5 Actual date of submission and revision date(s).
- .3 Update the Submittal Tracking List when information becomes available and resubmit to the Departmental Representative as requested.
- .4 Do not proceed with Work affected by submittal until review is complete.
- .5 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .6 Where items or information is not produced in SI Metric units converted values are acceptable.
- .7 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .8 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .9 Verify field measurements and affected adjacent Work are co-ordinated.
- .10 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .11 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .12 Keep one reviewed copy of each submission on site.

1.3 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Ontario, Canada where required by authorities having jurisdiction, or as requested in individual sections.

- .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .4 Allow five (5) days for Departmental Representative's review of each submission.
- .5 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.
- .6 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.
- .7 Accompany submissions with transmittal letter, containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
 - .6 Relevant specification section number and title.
- .8 Submissions to include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.
- .9 After Departmental Representative's review, distribute copies.
- .10 Submit one (1) electronic copy in PDF format and three (3) hard copies of shop drawings for each requirement requested in specification sections and as requested by Departmental Representative .
- .11 Submit one (1) electronic copy in PDF format or three (3) hard copies of product data sheets or brochures for each requirement requested in specification sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.

- .12 Submit one (1) electronic copy in PDF format and three (3) hard copies of test reports for requirements requested in specification sections and as requested by Departmental Representative.
 - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within three (3) years of date of contract award for project.
- .13 Submit one (1) electronic copy in PDF format and three (3) hard copies of certificates for requirements requested in specification sections and as requested by Departmental Representative.
 - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
 - .2 Certificates must be dated after award of project contract complete with project name.
- .14 Submit one (1) electronic copy in PDF format and three (3) hard copies of manufacturer's instructions for requirements requested in specification sections and as requested by Departmental Representative.
 - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .15 Submit one (1) electronic copy in PDF format and three (3) hard copies of Manufacturer's Field Reports for requirements requested in specification sections and as requested by Departmental Representative.
- .16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .17 Submit one (1) electronic copy in PDF format and eight (8) hard copies of Operation and Maintenance Data for requirements requested in specification sections and as requested by Departmental Representative.
- .18 Delete information not applicable to project.
- .19 Supplement standard information to provide details applicable to project.
- .20 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.
- .21 The review of shop drawings by the Departmental Representative is for the sole purpose of ascertaining conformance with general concept.
 - .1 This review shall not mean that Departmental Representative 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 SAMPLES

- .1 Submit for review samples in duplicate as requested in respective specification sections. Label samples with origin and intended use.

- .2 Deliver samples prepaid to Departmental Representative's business address.
- .3 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Adjustments made on samples by 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.
- .6 Make changes in samples which Departmental Representative may require, consistent with Contract Documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.
- .8 Sample submitted to the Departmental Representative will not be returned to the Contractor.

1.5 MOCK-UPS

- .1 Erect mock-ups in accordance with Section 01 45 00 - Quality Control and as indicated in sections.

1.6 PHOTOGRAPHIC DOCUMENTATION

- .1 Submit electronic copies of colour digital photography in JPG or TIF formats, standard resolution, with monthly progress statement and as directed by the Departmental Representative.
- .2 Project identification: include the name and number of project and date photo was taken.
- .3 Number of viewpoints: two (2) locations.
 - .1 Viewpoints and their location where Work is being performed as determined by Departmental Representative.
- .4 Frequency of photographic documentation:
 - .1 Upon completion of each work component and before concealment including, but not limited to, the following:
 - .1 Existing site conditions before Contractor mobilization for each mobilization phase.
 - .2 Demolition and dismantling of structures.
 - .3 Excavation to bedrock and fill to depth of footing.
 - .4 Parking relocation.
 - .5 Formwork and concrete foundation walls.
 - .6 Waterproofing and drainage plane membrane installation.
 - .7 Fall-arrest anchor installation.
 - .8 Concrete sand-blasting.
 - .9 Masonry dismantling, cleaning, re-pointing, mortaring, and repair and replacement of stone.
 - .10 Masonry anchorage.
 - .11 Stone fabrication.
 - .12 Sanded sealant joints installation.
 - .13 Work at tunnels and portals.
 - .14 Iron fencing restoration.
 - .15 Iron fence installation.
 - .16 Excavation and backfill.
 - .17 Grade reinstatement.
 - .18 Drainage works, installation of new catchbasin structures and tying into existing structures.
 - .19 Limestone pavers and curb installation.

- .20 Asphalt installation.
- .21 Sundial lowering.
- .22 Lamp post relocation at pier 39a.
- .23 Landscaping, vegetation removals and replanting.
- .24 Repairs and new paving at Victoria Bell and NCC plaques.
- .25 Curb cut for access gates.
- .26 Road markings erasure and repainting.
- .2 Plan for a minimum of fifty (50) photos to be submitted weekly.

1.7 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.
- .2 Submit transcription of insurance immediately after award of Contract.

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 RELATED SECTIONS

- .1 Section 01 00 10 - General Instructions.
- .2 Measurement for payment purposes
 - .1 No measurement will be conducted for traffic control. The cost of this work shall be included under "Mobilisation/Demobilisation" item on the tender form.

1.2 REFERENCES

- .1 Manual of Uniform Traffic Control Devices (UTCD) for Streets and Highways, 2002.
- .2 Temporary Conditions Field Edition, Ontario Traffic Manual (Book 7), 2001.

1.3 SUBMITTALS

- .1 Submit detailed site plan to Departmental Representative no later than ten (10) days after award of contract and prior to mobilizing on site.
 - .1 Identify vehicle traffic flow distinguished by size of vehicles where applicable.
 - .2 Show lane reductions and flagmen. Indicate estimated dates and duration.
 - .3 Show access points to approved site.
 - .4 Show safe routes for pedestrian traffic flow.
 - .5 Include the location of the proposed signage for traffic control including content.

1.4 PROTECTION OF PUBLIC TRAFFIC

- .1 Comply with requirements of Acts, Regulations and By-laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul products, materials or equipment.
- .2 When working on a travelled way:
 - .1 Place equipment in position to present minimum of interference and hazard to travelling public.
 - .2 Keep equipment units as close together as working conditions permit and preferably on same side of travelled way.
 - .3 Do not leave equipment on travelled way overnight.
- .3 Do not close any lanes of road without written approval from the Departmental Representative. Allow for ten (10) working days for approval to close lanes of traffic. Before rerouting traffic erect suitable signs and devices in accordance with instructions contained in Part D of UTCD Manual. Maintain one lane of traffic at all times along Library Drive.
- .4 When required, and as directed by the Departmental Representative, provide asphalt with a granular base for detours or temporary roads or pathways to facilitate passage of traffic around restricted construction area.
 - .1 Level the detour lanes according to the requirements of the Departmental Representative.
 - .2 Install and compact the granular base to 98% P.M.
- .5 Provide temporary hard surfaces for pedestrian traffic detour route. All pedestrian surfaces to be universally accessible.

1.5 INFORMATIONAL AND WARNING DEVICES

- .1 Provide, install and maintain signs, and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.
- .2 Supply and erect signs, delineators, barricades and miscellaneous warning devices as specified in Part D, Temporary Conditions Signs and Devices, of UTCD Manual.
- .3 Signs with text shall be printed in both official languages.
- .4 Place signs and other devices in locations recommended in the UTCD Manual.
- .5 Meet with the Departmental Representative prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of the Departmental Representative.
- .6 Continually maintain traffic-control devices in use by:
 - .1 Checking signs daily for legibility, damage, suitability and location; clean, repair or replace to ensure clarity and reflectance;
 - .2 Removing or covering signs which do not apply to conditions existing from day to day.

1.6 CONTROL OF PUBLIC TRAFFIC

- .1 Contractor to ensure two-way traffic at all times, except as noted below:
 - .1 Work on the Library Road for civil work.
 - .2 Parking relocation and creation of supplementary parking spots as indicated.
 - .3 Or as approved by Departmental Representative.
- .2 When traffic must be reduced to one-lane, Contractor must:
 - .1 Plan into the project schedule.
 - .2 Work will need to be carried out After Hours.
 - .3 Submit to Departmental Representative location, time, duration and phasing of lane reduction, description of reduction and proposed procedures for approval a minimum of ten (10) days in advance of the lane closure.
 - .4 Assist Departmental Representative in preparation of communiqué.
 - .5 Provide flag persons.
- .3 Contractor to assist Departmental Representative to coordinate traffic control with adjoining projects.
- .4 Provide competent flag persons, trained in accordance with, and properly equipped as specified in, UTCD manual in following situations:
 - .1 When public traffic is required to pass working vehicles or equipment which block all or part of travelled roadway;
 - .2 When it is necessary to institute one-way traffic system through construction area or other blockage where traffic volumes are heavy, approach speeds are high and traffic signal system is not in use;
 - .3 When workmen or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning;
 - .4 Where temporary protection is required while other traffic control devices are being erected or taken down.
 - .5 For emergency protection when other traffic control devices are not readily available.
 - .6 In all situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.
 - .7 Public traffic must not be interrupted for more than fifteen (15) minutes on account of work.
- .5 Provide two (2) flag persons if operating vehicles on the National Capital Commission (NCC) National Recreational Pathway or any other pedestrian path on Parliament Hill.
- .6 Parking relocation:

- .1 Work for the parking relocation that affects traffic is to take place After Hours.
- .2 Parking spots to remain accessible at all times during regular work hours.

1.7 TRAFFIC RESTRICTIONS

- .1 Maintain existing conditions for traffic throughout period of contract. Blocked traffic lanes will not be approved under any circumstances.
- .2 Refer to Appendix 3 for general traffic restrictions on and near Parliament Hill.
- .3 Maintain existing conditions for traffic crossing right-of-way.
- .4 No parking on the grounds of Parliament Hill.
- .5 Parking within work area of this contract is permitted.
- .6 No offloading of material on roadways without Departmental Representative written approval.
 - .1 If any material needs to be offloaded on the roadways advise Departmental Representative a minimum of five (5) days in advance.
 - .2 Any offloading on the roadways will need to be carried out After Hours.
 - .3 Provide flag persons.
 - .4 Maintain one lane of Library Drive open at all times.

END OF SECTION

PART 1 GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 14 25 - Designated Substances Report.
- .2 Section 01 33 00 - Submittal Procedures.

1.2 REFERENCES

- .1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .2 Province of Ontario
 - .1 Occupational Health and Safety Act and Regulations for Construction Projects, R.S.O. 1990, c. 0.1, as amended and O. Reg. 213/91, as amended.
 - .2 Workplace Safety and Insurance Act, 1997.
- .3 Arborist Industry Safe Work Practices.

1.3 COMPLIANCE REQUIREMENTS

- .1 Comply with Ontario Health and Safety Act, R.S.O. 2010.
- .2 Comply with Occupational Health and Safety Regulations, 1996.
- .3 Comply with Occupational Health and Safety Act, General Safety Regulations, O.I.C.

1.4 SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit a Site Specific Health and Safety Plan (SSHSP) no later than ten (10) days after award of Contract and prior to commencement of Work. The SSHSP must be submitted to the Departmental Representative for review and must include, but is not limited to:
 - .1 Description of project (a brief overview of the project).
 - .2 Hazard Assessment (HA) which includes measures to be taken to address the anticipated hazards related to the project site.
 - .3 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
 - .4 Fall arrest measures to be used for workers near the escarpment, including, but not limited to, all anchors, attachment points, number of lines, ropes, and number of workers per tie-off point.
 - .5 Procedures to be followed for working with molten lead.
 - .6 Contractor/sub-contractor safety communication measures including emergency communication numbers for Parliament Hill.
 - .7 Emergency response measures describing procedures to be followed during emergency situations including evacuating personnel from the site. Include emergency phone numbers.
 - .8 Emergency plan to ensure the isolation of occupants of nearby locations from the release of any emissions anticipated to be generated from the project activities.
 - .9 Construction indoor air quality management plan including product data for temporary filtration media.
 - .10 Contractor's Health and Safety Policy.
 - .11 Name of Health and Safety Coordinator.
 - .12 All certificates for individuals working on the project including, but not limited to: vehicle operators, fall protection, WHMIS and First Aid training.

- .13 Operating procedures for machinery on the plateau.
- .14 Safe traffic routes and fire truck access to construction yards and nearby facilities.
- .3 The Departmental Representative will review the Site-Specific Health and Safety Plan and provide comments to the contractor no more than five (5) days after receipt of the plan. Revise and resubmit plan in a timely manner until mutual agreement is reached. Work cannot commence until mutual agreement is reached. This review of the Health and Safety plan should not be construed as approval and does not reduce the contractor's overall responsibility for construction health and safety.
- .4 Submit records of contractor health and safety meetings when requested.
- .5 Submit two (2) copies of contractor's authorized representative's work site health and safety inspection reports upon request.
- .6 Submit copies of reports or directives issued by municipal and provincial safety inspectors.
- .7 Submit copies of incident and accident reports within twenty-four (24) hours of the incident or accident taking place.
- .8 Submit WHMIS Material Safety Data Sheets (MSDS) for products to be used on site, including herbicides and fertilizers.
- .9 Submit signed copies for all employees and sub-contractors Competency and Safety Acknowledgement forms.
- .10 Where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certification for any new site personnel.
- .11 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.
- .1 Emergency access for workers injured on the job, on the slope.
- 1.5 FILING OF NOTICE**
 - .1 File Notice of Project with Provincial authorities prior to beginning of Work.
 - .2 Provide copy of filing and acknowledgement from Provincial authority to Departmental Representative.
- 1.6 SAFETY ASSESSMENT**
 - .1 Perform site specific safety hazard assessment related to Work.
- 1.7 MEETINGS**
 - .1 Schedule and administer Health and Safety meeting with the Departmental Representative prior to commencement of Work.
- 1.8 WORK-SITE CONDITIONS**
 - .1 Known and obvious hazards include, but are not limited to:
 - .1 Operating vehicles on pathways shared with the public.
 - .2 Falling hazards.
 - .3 Steep slopes:
 - .1 Sliding and tripping hazards.
 - .2 Use of safety harnesses and ropes.
 - .4 Potentially unstable existing stone walls, embankments and tunnels.
 - .5 Insects, vermin, and bird droppings.
 - .6 Potential plant/shrub hazards (e.g. poison ivy).

- .7 Contact with silica and/or lead.
- .8 Operating equipment, vibration and noise.
- .9 Cold and hot temperatures.
- .10 Planting and management of vegetation on a steep slope.
- .11 Excavating next to a steep slope.
- .12 Use of herbicides and fertilizers.
- .13 See also Designated Substances Report in Section 01 14 25.

- .2 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of work, immediately stop work and advise the Departmental Representative verbally and in writing.

1.9 GENERAL REQUIREMENTS

- .1 For the purpose of the Occupational Health and Safety Act, the Contractor will be designated as the Constructor and assumes the responsibilities of the Constructor as set out in the Act and its regulations.
- .2 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to the site and the environment to the extent that they may be affected by the work.
- .3 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 (SSHSP).
- .4 Develop SSHSP based on a hazard assessment prior to commencing any site work and continue to implement, maintain, update and enforce the plan until final demobilization from site. Plan must address project specifications.
- .5 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.
- .6 Do not use materials that are toxic in the installed condition. Do not use volatile organic compounds (VOCs) where not permitted by law. Where the use of volatile organic compounds is permitted, provide adequate ventilation and take necessary precautions.

1.10 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with Site-Specific Health and Safety Plan.
- .3 Assume the role of "Constructor" as described in the Ontario Occupational Health and Safety Act and Regulations for Construction Projects.

1.11 UNFORSEEN HAZARDS

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

1.12 HEALTH AND SAFETY CO-ORDINATOR

- .1 The Contractor is to employ a competent and authorized representative as Health and Safety Coordinator. The Contractor site supervisor, or another approved employee, may assume the responsibilities of the Health and Safety Coordinator. The Health and Safety Coordinator must:
 - .1 Have site-related working experience specific to activities associated with hazardous materials as identified.
 - .2 Have site-related working experience specific to activities associated with submission documents.
 - .3 Have working knowledge of occupational health and safety regulations.
 - .4 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.
 - .5 Be responsible for implementing, enforcing daily and monitoring Contractor Health and Safety Plan.
 - .6 Be on site during execution of Work and report directly to and be under direction of the site supervisor.

1.13 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous locations on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Departmental Representative.
- .2 Documents required for posting include:
 - .1 Contractor company name.
 - .2 Name, trade and employer of Health and Safety Coordinator.
 - .3 Contractor's Health and Safety Policy.
 - .4 Up-to-date Site-Specific Health and Safety Plan, including emergency response measures.
 - .5 Notice of Project.
 - .6 Ministry of Labour Orders and reports.
 - .7 Occupational Health and Safety Act and Regulations for Construction Projects for Province of Ontario.
 - .8 Material Safety Data Sheets.
 - .9 Copy of valid certificates for first-aid personnel on duty.
 - .10 WSIB "In Case of Injury" poster.
 - .11 Location of toilet and clean-up facilities.
 - .12 Any special handling or procedures specific to the site.
 - .13 Emergency contact numbers for Parliament Hill.
- .3 Comply with provincial general posting requirements.

1.14 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by authorities 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 The Departmental Representative may stop work if there is a perceived non-compliance of health and safety regulations or a potential issue is perceived to have not been immediately corrected. There shall not be any delay claims in this case.

1.15 SANITARY FACILITIES

- .1 Provide sufficient chemical toilet facilities in a sanitary condition for use of contractor personnel and other project personnel at the site, in a location approved by the Departmental Representative.

1.16 BLASTING

- .1 Blasting or other use of explosives is not permitted without prior receipt of written instruction by Departmental Representative.

1.17 POWDER ACTUATED DEVICES

- .1 Use powder actuated devices, including Hilti guns, only after receipt of written permission from Departmental Representative.

1.18 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.

1.19 FIRE SAFETY REQUIREMENTS

- .1 Comply with the local applicable codes for fire safety in construction, fire prevention, firefighting and life safety.
- .2 Smoking is not permitted on site.
- .3 Comply with the National Building Code of Canada 2010 (NBC) for fire safety in construction and the National Fire Code of Canada 2010 (NFC) for fire prevention, fire fighting and life safety in building in use.
- .4 Welding and cutting:
 - .1 Before welding, grinding and/or cutting work, obtain a permit from the PWGSC Fire Prevention Specialist (Raymond Albert).
 - .2 Store flammable liquids in approved CSA containers inspected by the Fire Prevention unit and note storage location on Site Plan. No open flame shall be used unless authorized by the Fire Prevention Unit.
 - .3 At least five (5) working days prior to commencing cutting or welding, provide a completed welding permit as defined in FC 302 to the Departmental Representative.
 - .4 A fire watcher as described in FC 302 shall be assigned when welding or cutting operations are carried out in areas where combustible materials within ten (10) metres may be ignited by conduction or radiation.

1.20 HAZARDOUS MATERIALS

- .1 Comply with the requirements of the Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and the provision of Material Safety Data Sheets (MSDS).
- .2 Comply with Ontario Ministry of the Environment legislation and regulations regarding disposal of hazardous materials.
- .3 See also Designated Substances Report in Section 01 14 25.

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 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 52 00 - Construction Facilities.
- .3 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.2 REFERENCES

- .1 U.S. Environmental Protection Agency (EPA)/Office of Water.
- .2 EPA 832/R-92-005-92, Storm Water Management for Construction Activities, Chapter 3.
- .3 Ontario Environmental Protection Act
- .4 Canadian Environmental Protection Act
- .5 Transportation of Dangerous Goods Act
- .6 City of Ottawa Sewer Use By-law No. 2003 – 514.

1.3 DEFINITIONS

- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.4 ENVIRONMENTAL PROTECTION PLAN

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prior to commencing construction activities or delivery of materials to site, submit a site-specific Environmental Protection Plan for review and approval by Departmental Representative. The Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which must be addressed during construction.
- .3 Address topics at level of detail commensurate with environmental issue and required construction tasks.
- .4 Environmental protection plan to include:
 - .1 Names of persons responsible for ensuring adherence to Environmental Protection Plan.
 - .2 Names and qualifications of persons responsible for manifesting hazardous waste to be removed from site, if applicable.
 - .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, with cross sectional drawings, which identifies type and location of erosion and sediment controls to be provided

- including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations, and with 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. 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. Plan to include measures for marking limits of use areas including methods for protection of features to be preserved within authorized work areas.
 - .9 Spill Response Plan: including:
 - .1 Procedures, with a section dedicated to spills in the water, instructions, and reports to be used in event of unforeseen spill of regulated substance.
 - .2 Emergency contact numbers for appropriate Federal, Provincial and Municipal sources.
 - .3 Details of spill response equipment on-site (type of sorbents and whether they are suited to the chemicals on-site; oil/chemical/universal).
 - .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, do not become air borne and travel off project site.
 - .12 Pollution prevention plan that: identifies potentially hazardous substances to be used on job site; identifies intended actions to prevent releases of such materials into air, water, or ground; and details provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials. Ensure that hazardous substances, such as gasoline for vehicles and equipment, herbicides, fertilizers, etc. are stored and/or handled to a minimum of 30 metres from the Ottawa River and the Rideau Canal.
 - .13 Waste water management plan that identifies methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines.
 - .14 Historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands.
 - .15 Pesticide treatment plan:
 - .1 To be included and updated, as required.
 - .2 Identify in plan whether or not the proposed/approved products for use in this project are approved for use as per the Pest Control Products Act.
 - .5 The Contractor will perform a vegetation/tree survey and submit a vegetation/tree removal and protection plan. Identify vegetation that are federally-, provincially- and municipally-protected. Identify location of vegetation/trees to be removed and location of vegetation/trees to be protected on the plan. Label the type of protection on the plan.

Submit the vegetation/tree survey and protection plan ten (10) days in advance of the Work for review and approval by Departmental Representative.

- .6 Note that the prime breeding season for birds is from April 15th to August 15th. If trees are to be removed during this period, a nest survey of the area of vegetation clearing and/or pruning should be conducted by a qualified avian biologist prior to the work to avoid/limit bird nests to be disturbed/destroyed.

1.5 EXPLOSIVES

- .1 Blasting or other use of explosives are not permitted on this project.

1.6 FIRES

Fires and burning of rubbish are not permitted on this project.

1.7 DISPOSAL OF WASTES

- .1 Do not bury rubbish and waste materials on site.
- .2 Separate and recycle all materials that can be recycled.
- .3 Dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner by taking them to a special designated waste facility. Do not dump these into waterways, storm or sanitary sewers. All waste subject to Regulation 558 of the Ontario Environmental Protection Act must be transported with a valid "Certificate of Approval for a Waste Management System" to a site approved by the Ontario Ministry of the Environment to accept that waste.
- .4 Be responsible for obtaining all Waste Generator Numbers, permits, manifests, and all other Paperwork necessary to comply federal, provincial and municipal regulations. Submit on request to Departmental Representative for review.
- .5 Prior to the disposal of waste material identified as containing designated substance in section 01 14 25 Designated Substances Report the contractor will allow the Departmental Representative to collect representative samples of the waste material and perform TCLP leachate test to determine if the waste is to be handled and hazardous or non-hazardous waste.

1.8 TURBIDITY CONTROL AND DRAINAGE

- .1 Control turbidity of all water released during the work, if applicable:
 - .1 Do not pump water directly into any waterway. Send all discharge to a settling pond or filtration area. Collect and dispose all effluent off-site as per applicable codes.
 - .2 Provide a marine-grade turbidity curtain across all areas where sediments can enter any waterway. Turbidity curtain to be anchored or weighted down along its length to form a continuous seal along the ground surface with adequate flotation at water surface to prevent over-spills of turbid water. Mechanical filtration of turbid water is also acceptable.
 - .3 In the event of significant silting or debris caused by construction activities, contractor must take appropriate measures to confine work and install additional turbidity curtains.
- .2 Provide erosion and sediment control plan that identifies type and location of erosion and sediment controls to be provided. Plan: include 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.

- .3 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
- .4 Clean-up of all types of equipment or machinery must be done at least 30 metres from the Ottawa River or the Rideau Canal.
- .5 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .6 Sediment, debris and erosion control measures must be inspected daily to ensure that they are functioning properly and are maintained and upgraded as required.
- .7 If the sediment, debris or erosion control measures are not functioning properly, no further work will be permitted until the sediment/erosion problem has been rectified.
- .8 Sediment, debris and erosion control measures must be left in place until all disturbed areas within the work area have been stabilized and any sediments in the water have settled. Removal will be permitted only after written approval from the Departmental Representative.
- .9 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements. Discharge of these waters into the Ottawa River, the Rideau Canal or storm or sanitary sewers is prohibited.
- .10 Manholes or drainage grates associated with the storm water and/or sanitary sewer systems, in the vicinity of the project, must be covered/protected and installed before the work starts, to prevent sediment and/or any foreign objects/debris from entering during demolition and construction activities.
- .11 Effective erosion and sediment control measures (e.g. silt fences, haystacks, etc.) must be installed before starting the work to prevent sediment from entering the Ottawa River or Rideau Canal.
- .12 Regular inspection and maintenance of the erosion and sediment control measures and protection of the sanitary and storm water sewer systems is required during the course of demolition/construction. Repairs to erosion and sediment control measures, structures and protection systems are required if damage occurs.
- .13 Materials, fuel, and waste must be stored and or transferred above the high water mark and away from any manhole or grates to prevent entry to the Ottawa River or sanitary or storm water sewer systems. All construction materials must be removed from the project area upon project completion.
- .14 Machinery and tools used on the project site must be in a clean condition, and maintained free of fluid leaks, invasive species, and noxious weed. Machinery must be operated on land above the high water mark. The machinery must be washed, refuelled and serviced in such way as to prevent any deleterious substances from entering the water and/or storm water sewer

1.9 SITE CLEARING AND PLANT PROTECTION

- .1 No cutting or pruning of any tree, with a trunk diameter of 100mm or greater measured at breast height (DBH), is permitted within the work area without the written approval of the Departmental Representative or unless identified for removal in the Contract Documents. The Contractor is to provide the Departmental Representative with a ten (10) day approval period when requesting permission to cut or prune any woody vegetation.
- .2 Trees with a trunk diameter of 100 mm or less, shrubs, herbaceous plants, and vines may be cut only to extents required for construction of the wall and foundation. Extents of removals to be reviewed and approved by Departmental Representative prior to undertaking removals

- .3 Undesirable trees, shrubs, herbaceous plants, and vines are to be cut 600mm above finish grade and removed entirely off-site. Unless excavation for the Work will occur in the area, the roots are to remain in place so as not to cause soil erosion or disturbance to vegetation to be protected.
- .4 Trees may not be used for support of worker safety lines, hoisting ropes, cables or equipment.
- .5 Protect trees and plants adjacent to storage areas and trucking routes and encase with protective wood framework from grade level to height of 2m.
- .6 Protect roots of designated trees approved for protection to drip line (outer perimeter of branches) during excavation and drilling to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .7 Provide fencing around trees which may be affected by the work, including in staging areas. Locate fencing 1 metre beyond the drip line. Fencing to consist of plastic construction fencing supported by steel stakes, extending from grade level to a height of at least 1 metre. Maintain fences in good repair throughout the duration of work. Remove fences upon completion of work.
- .8 Reduce soil displacement and compaction by using equipment of low bearing weight and low psi tires wherever possible. Replace damaged areas to pre-construction state with topsoil and vegetation.

1.10 OPERATION, MAINTENANCE AND CLEANING OF EQUIPMENT

- .1 Provide drip trays to prevent the discharge of oil, grease, antifreeze, or any other deleterious materials into the ground.
- .2 Equipment and heavy machinery used to meet or exceed all applicable emission requirements.
- .3 Leave machinery running only while in actual use, except where extreme temperatures prohibit shutting machinery down.
- .4 All vehicle/equipment maintenance and refuelling must be conducted over impermeable surfaces situated at a designated site that is located at least fifteen (15) metres away from the nearest water body. In the case of machinery that must be within fifteen (15) metres of a water body, a large drip pan to contain any leakage from heater or re-fuelling operations must be placed.
- .5 Use trigger-operated spray nozzles for water hoses when cleaning concrete equipment.
- .6 Equipment and tools are to be cleaned in the staging area only as approved by the Departmental Representative, or off-site.

1.11 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment to local authorities' emission requirements.
- .3 Cover or wet down dry materials and garbage to prevent blowing dust and debris. Provide dust control for temporary roads.
- .4 Spills:
 - .1 Report all spills immediately to the Departmental Representative and to the Ontario Spills Action Centre (Telephone No. 1-800-268-6060).
 - .2 Using appropriate safety precautions, collect liquid or solidify liquid with an inert, non-combustible material and remove for disposal.

- .3 Be responsible for all costs of cleaning up any spills to the satisfaction of the Departmental Representative.
- .4 Must have an environmental emergency response plan in place and a spill kit readily available. The location of the spill kit should be noted on the Site Plan.
- .5 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area, by providing temporary enclosures.

1.12 NOISE POLLUTION CONTROL

- .1 Obtain a copy of the House of Commons and Senate calendars from the Departmental Representative to determine days when they are in session. Noise generating activities will generally be considered as After Hours work unless otherwise approved by the Departmental Representative. Provide a noise pollution control plan that includes the following:
 - .1 In conjunction with the Departmental Representative, identify noise sensitive locations as perceived by the occupants around the site.
 - .2 Identify noisy construction activities.
 - .3 Provide noise level data sheets for equipment (e.g. generators, space heaters, etc.) used in identified activities or as requested by the Departmental Representative.
 - .4 Provide effective noise mitigation measures for review and approval by Departmental Representative.
- .2 Schedule all noisy work to take place After Hours.
- .3 Operating vehicles in reverse during regular hours should be avoided.
- .4 Dump truck delivery and pickup are regarded as noisy activities due to noise created by the swinging tail gate.
- .5 Manage impact of noise generated by equipment and construction activities through careful scheduling, strategic placement of equipment and installation of temporary sound barriers where necessary.

1.13 HAZARDOUS MATERIALS

- .1 Handle and dispose of hazardous materials in accordance with Canadian Environmental Protection Act, Transportation of Dangerous Goods Act, Environmental Protection Act, R.S.O. 1990 as well as the City of Ottawa's bylaws.
- .2 Place materials defined as hazardous or toxic waste in approved containers.
- .3 Comply with the requirements of the Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and the provision of Material Safety Data Sheets (MSDS) acceptable to Human Resources Development Canada, Labour Program.
- .4 Store hazardous materials in secure areas on impermeable pads equipped with berms, or on a spill containment pallet.

1.14 HISTORICAL/ARCHAEOLOGICAL PRESERVATION

- .1 Provide a plan that defines procedures for identifying and protecting historical, archaeological, cultural and biological resources known on the project site, and/or identify other procedures to be followed in the event of unexpected discovery of such resources on the site or in the area during construction.

- .2 The plan is to include methods to assure the protection of known or discovered resources, and identify lines of communication between Contractor personnel and the Departmental Representative.
- .3 Archaeological monitoring will be required during any ground disturbing activities in the areas shown on the drawings. The duration of the monitoring will be dependent on how long it will take for the area to be excavated and exposed.
- .4 Advise Departmental Representative a minimum of five (5) days before start of excavations requiring archaeological monitoring.
- .5 Should intact archaeological resources be identified in areas that fall outside of those marked on the drawings the Contractor must notify the Departmental Representative immediately. The Departmental Representative will provide guidance on next steps.
- .6 Should significant archaeological resources be encountered during construction monitoring, Work will be required to stop until such time as the resources are accurately documented to a standard that meets both the Ministry of Tourism, Culture and Sport's Standards and Guidelines for Consultant Archaeologists (2011) and Parks Canada's requirements.

1.15 NOTIFICATION OF NON-COMPLIANCE

- .1 Departmental Representative will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.
- .2 After receipt of such notice, inform the Departmental Representative of proposed corrective action and take such action for approval by the Departmental Representative.
- .3 The Departmental Representative may issue stop order of work until satisfactory corrective action has been taken.
- .4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

Part 2 PRODUCTS

2.1 NOT USED

- .1 Not Used.

Part 3 EXECUTION

3.1 CLEANING

- .1 Clean up work area as work progresses. At the end of each work period, and more often if ordered by the Departmental Representative, remove debris from site, neatly stack material for use, and clean up generally.
- .2 Permit no undue amounts of debris, trash or garbage to accumulate.
- .3 Ensure all emptied containers are sealed and stored safely for disposal away from public access.

END OF SECTION

PART 1 GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 29 83 - Payment Procedures for Testing Laboratory Services
- .2 Section 01 33 00 - Submittals.

1.2 QUALITY CONTROL AND TESTING

- .1 Quality control is defined as using materials, procedures and workmanship that meet the minimum standard set by the contract documents and good construction practices.
- .2 The Contractor is responsible for arranging and paying for all inspections, quality control and testing unless otherwise noted. .
- .3 The Contractor is to submit the names of proposed testing agencies for Departmental Representative approval.
- .4 Coordinate all sampling and testing activities and provide reports for Departmental representative review and approval.
- .5 The Contractor to identify all testing on the schedule.
- .6 The Contractor is to pay for all retesting if test results fail to meet specifications.
- .7 Submit copies of inspection reports prepared as part of quality control to the Departmental Representative, if applicable.
- .8 The following tests will be arranged by and costs paid for by the Departmental Representative:
 - .1 Compaction tests on granular bases and sub-bases.
 - .2 Archaeological monitoring.
 - .3 Concrete testing.
 - .4 Mortar testing.
 - .5 Asphalt testing.
 - .6 Bearing surface inspection on the subgrade for structural footings.
 - .7 Lean Concrete mix testing.
 - .8 Aggregate testing.
 - .9 Leachate testing

1.3 QUALITY ASSURANCE

- .1 Quality assurance is defined as periodic monitoring or testing of ongoing construction materials, procedures and workmanship to assess if quality control targets are successfully being achieved.
- .2 Independent inspection/testing agencies may be engaged by the Departmental Representative for the purpose of independent quality assurance only and for the purpose of verifying the Contractor's quality control processes. These services will be arranged and paid for by the Departmental Representative, except as noted in these specifications.
- .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 If defects are found in the Work due to independent inspection and testing, the Work shall be made good or replaced by the Contractor at no extra cost. The Contractor may be back-charged, as decided by the Departmental Representative, for the cost of subsequent inspection and testing to confirm the acceptability of the new work.
- .5 If the Contractor covers or permits to be covered work that has been designated for independent testing or inspection before these are done, the Departmental Representative

may require that such work be uncovered, have inspections or tests satisfactorily completed, and such work made good if required, by the Contractor, at no extra cost.

1.4 INSPECTION

- .1 Allow Departmental Representative access to Work, off-site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for access. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .3 Give no less than ten (10) days advance notice when requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.
- .4 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.
- .5 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative shall pay cost of examination and replacement.

1.5 PROCEDURES

- .1 Notify appropriate agency and Departmental Representative no less than ten (10) days 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 to Department Representative's place of work. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.6 REJECTED WORK

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

1.7 REPORTS

- .1 Submit one (1) electronic copy in PDF format or three (3) hard copies of inspection and test reports to Departmental Representative.
- .2 Provide copies to subcontractor of work being inspected or tested and manufacturer or fabricator of material being inspected or tested.

1.8 TESTS AND MIX DESIGNS

- .1 Furnish test results and mix designs as requested.
- .2 Cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work will be appraised by Departmental Representative and may be authorized as recoverable.

1.9 MOCK-UPS

- .1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of sections required to provide mock-ups to demonstrate the full constructed assembly and coordinated work between sections.
- .2 Identify mock-ups on the schedule and give Departmental Representative ten (10) days advance notice of when each mock-up will be available for inspection.
- .3 Prepare mock-ups for Departmental Representative review with reasonable promptness and in orderly sequence, to not cause delays in Work.
- .4 Failure to prepare mock-ups in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .5 If requested, Departmental Representative will assist in preparing schedule fixing dates for preparation.
- .6 Mock-ups will be installed in locations indicated, or as agreed to by the Departmental Representative.
- .7 Notify Departmental Representative in writing, at time of submission of deviations in mock-ups from requirements of Contract Documents.
- .8 Where colour, pattern or texture, or materials are criterion, submit full range within the mock-up.
- .9 Adjustments made in the mock-up or work for the mock-up 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.
- .10 Make changes in mock-ups, which Departmental Representative may require, consistent with Contract Documents.
- .11 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.
- .12 Remove mock-up at conclusion of Work or when acceptable to Departmental Representative.
- .13 Mock-ups may remain as part of Work on written approval by the Departmental Representative.

1.10 MILL TESTS

- .1 Submit mill test certificates as requested or as required of specification 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 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.

1.2 REFERENCES

- .1 U.S. Environmental Protection Agency (EPA) / Office of Water
 - .1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.3 SUBMITTALS

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

1.4 INSTALLATION AND REMOVAL

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

1.5 DEWATERING

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

1.6 WATER SUPPLY

- .1 Continuous supply of potable water will not be provided by Departmental Representative for construction use and is the responsibility of the Contractor.

1.7 TEMPORARY HEATING AND VENTILATION

- .1 Provide temporary heating required during construction period, including attendance, maintenance and fuel.
- .2 Propane fuelled devices and propane are not permitted on site. Diesel powered devices and diesel fuel are permitted.
- .3 Heating on Parliament Hill is to be done with Diesel Heating oil and must be in conformance with TSSA fuel handing regulations..
- .4 Provide temporary heat and ventilation in enclosed areas as required to:
 - .1 Facilitate progress of Work.
 - .2 Protect Work and products against dampness and cold.
 - .3 Prevent moisture condensation on surfaces.
 - .4 Provide ambient temperatures and humidity levels for storage, installation and curing of materials.
 - .5 Provide adequate ventilation to meet health regulations for safe working environment.
- .5 Maintain temperatures of minimum 10 degrees C in areas where construction is in progress.
- .6 Ventilating:
 - .1 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.
 - .2 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
 - .3 Ventilate storage spaces containing hazardous or volatile materials.
 - .4 Ventilate temporary sanitary facilities.

- .7 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 Prevent damage to finishes.
 - .5 Vent direct-fired combustion units to outside.
- .8 Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

1.8 TEMPORARY POWER

- .1 Generation of temporary power is responsibility of Contractor.
- .2 Submit generator product data on noise levels and noise control for approval by Departmental Representative.
- .3 Submit plan showing location of generator for approval by Departmental Representative.

1.9 TEMPORARY COMMUNICATION FACILITIES

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

1.10 FIRE PROTECTION

- .1 Provide and maintain temporary fire protection equipment during performance of Work required by governing codes, regulations and bylaws.
- .2 Burning rubbish and construction waste materials is not permitted on site.

PART 2 PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.

1.2 AVAILABLE PROJECT INFORMATION

- .1 Upon award of Contract the following documentation will be made available to the successful Contractor:
 - .1 As-built drawings showing outline for Centre Block Underground Services building.
 - .2 Section details for all four tunnels.
 - .3 Consultant Site Investigation Report and Archaeological Report.
 - .4 Previous topographic surveys with control points.
 - .5 House of Commons and Senate sitting days calendars.

1.3 REFERENCES

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.
 - .2 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
- .2 Canadian Standards Association (CSA International)
 - .1 CSA-A23.1/A23.2-09, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
 - .2 CSA-0121-M1978(R2003), Douglas Fir Plywood.
 - .3 CAN/CSA-S269.2-M1987(R2003), Access Scaffolding for Construction Purposes.
 - .4 CAN/CSA-Z321-96(R2001), Signs and Symbols for the Occupational Environment.
- .3 Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions 'C', In Effect as of: May 14, 2004.
- .4 U.S. Environmental Protection Agency (EPA) / Office of Water
 - .1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.4 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Site Plan is to be submitted to Departmental Representative and approval must be obtained before construction activities begin.
- .3 Provide shop drawings, stamped by Professional Engineer, detailing the Construction Site plan, with details of protection in all areas over and around tunnels which will be loaded, and how they are to be protected. Indicate locations of loads and type of loading, Detail all traffic areas which traverse over tunnels.
- .4 Submit information on generators and space heaters for use on site including location, size, type, fuel type, and noise levels generated.
- .5 Provide written plan for review and approval of the Departmental Representative, on how snow removal will be implemented for the work area

1.5 INSTALLATION AND REMOVAL

- .1 Prepare Site Plan indicating proposed location and dimensions of area to be fenced and used by Contractor, location of trailer, avenues of ingress/egress to fenced area and details of fence installation, space for special events media truck, and generators and space heaters.

- .2 Keep within limits of approved Construction Site including avenues of access and egress. Locate all trailers and facilities inside fenced Construction Site.
- .3 Identify areas which have to be gravelled to prevent tracking of mud.
- .4 Indicate use of supplemental or other Off-Site staging area if required.
- .5 Provide construction facilities in order to execute work expeditiously.
- .6 Remove from site all such work after use and make good.
- .7 Submit plan to Departmental Representative for review within ten (10) days of contract award. Do not proceed with construction of any on site facilities until the plan has been approved by the Departmental Representative in writing.

1.6 STAGING AREAS

- .1 Mobilize site in two stages:
 - .1 Area around Summer Pavilion to remain accessible to the public until October 1, 2015. No mobilization, storage or Work will be permitted in this area until October 1, 2015.
 - .2 After October 1, 2015, extend staging area to include the Summer Pavilion.
 - .3 Police and Peace Officers' Memorial to remain accessible at all times.

1.7 SCAFFOLDING

- .1 Scaffolding in accordance with CAN/CSA-S269.2.
- .2 Provide and maintain scaffolding, ramps, ladders, swing staging, platforms and temporary stairs.

1.8 HOISTING

- .1 Provide, operate and maintain hoists and cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for their use of hoists.
- .2 Hoists and cranes to be operated by qualified operator.

1.9 SITE STORAGE/LOADING

- .1 Confine work and operations of employees to inside of Construction Site. Do not unreasonably encumber premises with products.
- .2 Do not load or permit to load any part of Work with weight or force that will endanger Work or buried infrastructure.

1.10 CONSTRUCTION PARKING

- .1 Parking will not be permitted on Parliament Hill except within Contractor's site enclosures. No compensation for off-site parking costs incurred for contractor's vehicles will be considered.
- .2 Provide and maintain adequate access to project site. Access gates to site must be closed at all times when not in use.

1.11 SECURITY

- .1 Contractor is responsible to secure site and contents of site at all times including after working hours and during holidays.

1.12 SITE ACCESS BY OWNER

- .1 Provide safe, temporary access route to the area where the media truck will be located for use by Owner. Notice of access will be provided by Owner with no time restrictions.

- .2 Provide Owner with keys for lockable gates at Construction Site enclosures.

1.13 OFFICES

- .1 Provide office heated to 22 degrees C, lighted 750 lx and ventilated, of sufficient size to accommodate partitioned work room for site meetings with Departmental Representative and furnished with drawing laydown table.
- .2 Provide marked and fully stocked first-aid case in a readily available location.
- .3 Subcontractors to provide their own offices as necessary.
- .4 Temporary Office for the Departmental Representative:
 - .1 Provide temporary office for Departmental Representative.
 - .2 Inside dimensions minimum 3.6 m long x 3 m wide x 2.4 m high, with floor 0.3 m above grade, complete with 4 50% opening windows and one lockable door.
 - .3 Insulate building and provide heating system to maintain 22 degrees C inside temperature at -20 degrees C outside temperature.
 - .4 Finish inside walls and ceiling with plywood, hardboard or wallboard and paint in selected colours. Finish floor with 19 mm thick plywood.
 - .5 Install electrical lighting system to provide min 750 lx using surface mounted, shielded commercial fixtures with 10% upward light component.
 - .6 Provide private washroom facilities adjacent to office complete with flush or chemical type toilet, lavatory and mirror and maintain supply of paper towels and toilet tissue.
 - .7 Equip office with 1 x 2 m table, 4 chairs, 6 m of shelving 300 mm wide, one 3- drawer filing cabinet, one plan rack and one coat rack and shelf.
 - .8 Maintain in clean condition.

1.14 EQUIPMENT, TOOL, AND MATERIALS STORAGE

- .1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials. Materials left in plain view may be removed at the discretion of Parliament Hill security personnel.
- .2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

1.15 SANITARY FACILITIES

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.
- .3 Departmental Representative may direct Contractor to locate sanitary facilities to location that is most hidden from surrounding buildings.

1.16 CONSTRUCTION SIGNAGE

- .1 Locate project identification sign as directed by Departmental Representative.
- .2 Provide common-use signs related to traffic control, information, instruction, use of equipment and public safety devices.
- .3 Provide all signs and notices for safety and instruction in both official languages or by the use of commonly understood, internationally accepted graphic symbols to the Departmental Representative's approval. Use graphic symbols to CAN/CSA-Z321.
- .4 Provide signage to manage pedestrian and vehicular traffic.
- .5 No signs of advertisements, other than warning signs, are permitted on site.

- .6 Direct requests for approval to erect construction signage to Departmental Representative prior to installation.
- .7 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Departmental Representative.

1.17 PROTECTION AND MAINTENANCE OF TRAFFIC

- .1 Maintain and protect traffic on affected roads during construction period.
- .2 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs
- .3 Protect travelling public from damage to person and property.
- .4 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.
- .5 Verify adequacy of existing roads and allowable load limit on these roads. Contractor responsible for repair of damage to roads caused by construction operations.
- .6 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .7 Dust control: adequate to ensure safe operation at all times.

1.18 MAKE GOOD

- .1 Skill:
 - .1 Patch and extend existing work using skilled tradesmen who are capable of matching the existing quality of workmanship. The quality of patched or extended work shall not be less than that specified in the applicable Sections of the Contract Specifications.
- .2 Patching:
 - .1 In areas where any portion of an existing finished surface is damaged, lifted, stained or otherwise found to be imperfect, patch or replace the imperfect portion of the surface with matching material.
 - .2 Do not incorporate salvaged or used material in new construction, except where small quantities of finish material which are difficult to match or duplicate are approved for patching or extending purposes by the Departmental Representative.
 - .3 Provide adequate support or substrate for patching of finishes.
 - .4 If the imperfect surface is a painted or coated one, repaint or recoat the patched portion in such a way that uniform colour and texture over the entire surface results to approval by Departmental Representative.
 - .5 If the surrounding surface cannot be matched, repaint or recoat the entire surface to nearest natural break to approval by Departmental Representative.
- .3 Quality:
 - .1 In the Sections of the Specifications to which these alteration procedures are applicable, products required for patching, matching, extending or replacing existing work have not necessarily been described. Obtain all required products in time to complete the Work on schedule. Provide products of quality equal to or better than the existing products.
- .4 Transitions:
 - .1 Where new work abuts or finishes flush with existing work, make the transition as smooth and workmanlike as possible. Patched work shall match existing adjacent work in texture and appearance, so as to make the patch or transition invisible to the eye at a distance of one metre.
 - .2 Where concrete, stone, wood, asphalt, metal, grass or other finished surface is cut in such a way that a smooth transition with new work is not possible, terminate the

existing surface in a neat fashion along a straight line at a natural line of division and provide trim appropriate to the finished surface.

- .5 Matching:
 - .1 Where not otherwise specified or indicated, restore existing work that is damaged during construction to a condition equal to its condition at the time of the start of the Work.

1.19 CLEAN-UP

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

1.20 SNOW REMOVAL

- .1 Remove snow from inside and outside the fenced construction area for the duration of the construction. Arrange for snow to be removed from inside the construction fence when it interferes with normal operations, safety or security and as otherwise directed by the Departmental Representative.
- .2 Remove accumulated snow from the exterior of the construction security fence on a daily basis.
- .3 Load snow and completely remove it from the site as required. Creating snow piles, even temporarily, outside the construction fence will not be permitted.

PART 2 PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 EXECUTION

3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL

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

3.2 SET UP

- .1 Survey and mark locations of tunnels and below grade services.
- .2 Mark out edges of all tunnels and below grade services.

- .3 Restrict traffic across tunnels and below grade services to the minimum possible extent.

3.3 MAINTENANCE

- .1 Ensure delineation of edges of tunnels and below grade services is clearly visible at all times for duration of the project.
- .2 Manholes to be accessible to maintenance staff at all times.

END OF SECTION

GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 35 30 - Health and Safety Requirements
- .2 Section 01 52 00 - Construction Facilities
- .3 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

1.2 REFERENCES

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

1.3 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Site Plan is to be submitted to Departmental Representative and approval must be obtained before construction activities begin.
- .3 Provide shop drawings, stamped by Professional Engineer, detailing enclosures.
- .4 Provide shop drawings and written plan for protection and shoring of the monuments, Summer Pavilion and Perimeter Wall in the work area for review and approval of the Departmental Representative, including how the protection will be implemented and materials used.

1.4 INSTALLATION AND REMOVAL

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

1.5 CONSTRUCTION SITE FENCING

- .1 Provide and maintain a secure, rigid, continuous and permanent perimeter fence around the Construction Site as indicated in the Contract Documents.
- .2 Erect temporary site enclosures using modular, construction fence panelised with galvanized steel mesh. Modular panels are nominally of 2438mm high and made of 16-guage tubular sections, galvanized steel and 6-guage galvanized steel wire mesh welded to tubular sections. Fencing to be supported on surface mounted concrete block footings. Add plastic semi-transparent green mesh to the galvanized steel mesh to mitigate visual impact of site fencing.
- .3 Site enclosures to designate limits of Work on the escarpment may be substituted with 1200mm high plastic construction fence. Escarpment fence to capable of preventing smaller debris from falling down the escarpment. Installation to be maintained in good repair.
- .4 Fencing shall be in good condition and of uniform colour.
- .5 Provide two lockable entrance gates for machinery and personnel as indicated in the Contract Documents that conform to applicable traffic restrictions on adjacent roads. Equip gates with locks and keys. Entrance gates should not impede traffic and should be clear of parked vehicles adjacent to the Construction Site. Provide a copy of gate keys to Departmental Representative.
- .6 Site enclosures to be set back from vehicles parked adjacent to the site to allow access from all sides to these vehicles and to prevent damage.

- .7 Submit fencing layout for Departmental Representative approval no later than ten (10) days following award of Contract.
- .8 Contractor shall be solely responsible for the security of the site enclosures, including preventing unauthorized access with all reasonable precautions, and protecting the public from hazards.
- .9 If pedestrian passage is blocked by the site enclosures, an alternate safe route must be indicated with appropriate signage and additional barricades if required.
- .10 Erect and maintain pedestrian walkways including roof and side covers, complete with signs and electrical lighting as required by law.

1.6 PROTECTION OF MONUMENTS, PERIMETER WALL, LAMP POST BASES, SUMMER PAVILION AND SUMMER PAVILION FENCE

- .1 Provide protective enclosures around all monuments and lamp post bases within the Construction Site, the Summer Pavilion and Summer Pavilion fence.
- .2 Protect all monuments immediately adjacent to work site.
- .3 Shore monuments and existing structures when excavations are performed next to them.
- .4 Provide protective enclosures around exposed sides and top of the existing Perimeter Wall and Fence within the Construction Site. If Work is performed in phases and would leave reconstructed sections of Perimeter Wall and Fence exposed provide protective enclosures around exposed sides and top of these sections.
- .5 Enclosures to be installed as freestanding elements without fastening directly to the protected assets.
- .6 Provide details of enclosures and protective measures and submit them to the Departmental Representative for approval prior to starting the Work.
- .7 Provide details of shoring measures and submit them to the Departmental Representative for approval prior to starting the Work.

1.7 GUARD RAILS AND BARRICADES

- .1 Provide secure, rigid guard rails and barricades around deep excavations, open shafts, open stair wells, and open edges of floors and roofs.
- .2 Provide secure barricades at the top of the escarpment to prevent transfer of falling construction materials and debris to the actively used public recreational pathway below the site.
- .3 Provide as required by governing authorities.

1.8 WEATHER ENCLOSURES

- .1 Provide weather-tight enclosures for all temperature sensitive work including masonry, concrete and painting Work.
- .2 If limestone pavers and borders installation is to be carried out during heating season provide weather-tight enclosure for work.
- .3 Design enclosures to withstand wind pressure.
- .4 Provide shop drawings for weather enclosures stamped by a Professional Engineer for Departmental Representative review and approval ten (10) days prior to installation.
- .5 Provide heating as required to maintain required temperature for performing Work as directed in sections.

1.9 DUST TIGHT SCREENS

- .1 Provide dust tight screens to localize dust generating activities, and for protection of workers, finished areas of Work and public.
- .2 Maintain and relocate protection until such work is complete.

1.10 ACCESS TO SITE

- .1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as required for access to Work.
- .2 Provide access for media truck as indicated in the Contract Documents.

1.11 PUBLIC TRAFFIC FLOW AND TEMPORARY PEDESTRIAN WALKWAYS

- .1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect public.
- .2 Contractor to provide a stable, accessible, non-slip surface for all temporary pedestrian walkways and 1500mm width between parking and construction fence.

1.12 FIRE ROUTES AND FIRE HYDRANTS

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles.
- .2 One lane of Library Drive must be open at all times for emergency vehicles during course of Work.
- .3 Maintain access to fire hydrants from outside the Work area, build enclosures to go around fire hydrants.

1.13 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.

1.14 PROTECTION OF FINISHES

- .1 Parliament Hill Grounds and the North Perimeter Wall are classified assets and are part of the National Historic Site of Canada. All construction activities must be managed, sequenced, planned and executed in order to ensure the preservation of its specific characteristics.
- .2 Provide protection for finished and partially finished components and finishes during performance of Work.
- .3 Provide necessary screens, covers, hoarding and enclosures.
- .4 Confirm with Departmental Representative locations and installation schedule three (3) days prior to installation.
- .5 Be responsible for damage incurred due to lack of or improper protection.

1.15 WASTE MANAGEMENT AND DISPOSAL

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

PART 2 PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 73 00 - Execution

1.2 REFERENCES

- .1 Within text of each specification section, reference may be made to reference standards. List of standards reference writing organizations is contained within each specification section.
- .2 Conform to these reference standards, in whole or in part as specifically requested in specifications.
- .3 If there is question as to whether products or systems are in conformance with applicable standards, Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance.
- .4 Cost for such testing will be borne by Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance.

1.3 QUALITY

- .1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.
- .2 Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work. Submit for review and written acceptance by Departmental Representative before using on site. If rejected by the Departmental Representative, provide new material.
- .3 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
- .4 Should disputes arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .5 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.
- .6 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.4 STORAGE, HANDLING AND PROTECTION

- .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious products clear of earth or concrete floors, and away from walls.

- .5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .6 Store sheet materials and lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .8 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.
- .9 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

1.5 TRANSPORTATION

- .1 Pay costs of transportation of products required in performance of Work.
- .2 Pay costs of transportation of products supplied by Departmental Representative. Load, unload, handle and store such products.

1.6 MANUFACTURER'S INSTRUCTIONS

- .1 Unless otherwise indicated in documents, install or erect products in accordance with manufacturer's instructions, and including accessories, preparations and finishing. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.
- .2 Notify Departmental Representative in writing, of conflicts between documents and manufacturer's instructions, so that Departmental Representative will establish course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Departmental Representative to require removal and re-installation at no increase in Contract Price or Contract Time.

1.7 QUALITY OF WORK

- .1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Departmental Representative if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. Departmental Representative reserves right to require dismissal from site, workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Departmental Representative, whose decision is final.
- .4 Use qualified licensed workers or apprentices in accordance with 1997 Trades and Qualification and Apprenticeship Act respecting manpower vocational training and qualification.

1.8 CO-ORDINATION

- .1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.9 CONCEALMENT

- .1 In finished areas conceal services, except where indicated otherwise.

- .2 Before installation inform Departmental Representative if there is interference. Install as directed by Departmental Representative.

1.10 REMEDIAL WORK

- .1 Refer to Section 01 73 00 – Execution.
- .2 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.
- .3 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.11 FASTENINGS

- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- .2 Prevent galvanic action between dissimilar metals and materials.
- .3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.
- .4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
- .5 Keep exposed fastenings to a minimum, space evenly and install neatly.
- .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.
- .7 Submit to Departmental Representative product data of all proposed fasteners prior to commencing the Work.

1.12 FASTENINGS - EQUIPMENT

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- .2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.
- .3 Bolts may not project more than one diameter beyond nuts.
- .4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.13 PROTECTION OF WORK IN PROGRESS

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

1.14 EXISTING UTILITIES

- .1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, building occupants and/or pedestrian and vehicular traffic.
- .2 Give the Departmental Representative ten (10) days advance notice prior to breaking into or connecting to existing services or utilities for approval.

- .3 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.
- .4 Use licensed electricians to modify electrical supply and connection to lampposts to accommodate the Work. Provide materials for modifications.
- .5 Use experienced workers to modify sub-surface irrigation/sprinkle system and telecommunications to accommodate 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 REFERENCES

- .1 Departmental Representative's identification of existing survey control points.

1.2 QUALIFICATIONS OF SURVEYOR

- .1 Qualified registered land surveyor, licensed to practice in Place of Work.
- .2 Same surveying company should be used for all work within the limit of Work.

1.3 SURVEY REFERENCE POINTS

- .1 Survey data for this project was generated using UTM (Universal Transverse Mercator) geographic coordinate system.
- .2 Existing base horizontal and vertical control points are designated on drawings.
- .3 Locate, confirm and protect control points prior to starting site work. Preserve permanent reference points during construction.
- .4 Make no changes or relocations without prior written notice to Departmental Representative.
- .5 Report to Departmental Representative when reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
- .6 Require surveyor to replace control points in accordance with original survey control.

1.4 SURVEY REQUIREMENTS

- .1 Establish minimum 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 Locate and establish elevations of existing trees to be preserved, undisturbed slopes adjacent to new Works, and other permanent features to remain.
- .4 Establish pipe invert and top of structure elevations.
- .5 Stake batter boards for foundations.
- .6 Stake anchor locations.
- .7 Stake for grading, fill and topsoil placement and landscaping features.
- .8 Survey existing wall and iron fence to record points in plan and elevation to use in preparation of shop drawings by Divisions 03, 04 and 05.
- .9 Coordinate with Divisions 03, 04 and 05 to confirm number of points required. At minimum record:
 - .1 Face of wall on path and slope sides, and centre-line of the wall on 1 m increments.
 - .2 Location four corners of each pier stone.
 - .3 Elevation of base of pier stone, top pier stone, top of capstones at 5 m intervals.
 - .4 Centre of iron fence posts.
- .10 Survey top and profile of tunnels and tunnel faces after they have been exposed by excavation.
- .11 Survey and record top of exposed bedrock before commencing bedrock excavation.

- .12 Survey top of bedrock after excavation is complete.
- .13 Survey top of concrete foundation wall, footing and slabs after concrete has been poured and forms removed.
- .14 Prepare plywood templates in accordance with Section 05 70 10 – Decorative Metal Restoration.

1.5 EXISTING SERVICES

- .1 Before commencing work, establish location and extent of service lines in area of Work and notify Departmental Representative of findings.
- .2 Remove abandoned service lines within 2 m of structures. Cap or otherwise seal lines at cut-off points as directed by Departmental Representative.
- .3 Provide a hard copy of the completed locate plans for public and private services to Departmental Representative prior to commencing work.
- .4 Locates survey to be continuously updated for the duration of the work. Upon updating surveys Contractor to provide a copy to Departmental Representative.

1.6 RECORDS

- .1 Maintain a complete, accurate log of control and survey work as it progresses.
- .2 On completion of foundations and major site improvements, prepare a certified survey showing dimensions, locations, angles and elevations of Work.
- .3 Record locations of maintained, re-routed and abandoned service lines.

1.7 SUBMITTALS

- .1 Submit name and address of Surveyor to Departmental Representative.
- .2 On request of Departmental Representative, submit documentation to verify accuracy of field engineering work.
- .3 Submit certificate signed by surveyor certifying and noting those elevations and locations of completed Work that conform and do not conform to Contract Documents.
- .4 Submit digital copies in Autocad DWG and PDF file formats on completion of each stage of surveys.
- .5 Include digital and print copies with close out documents.

1.8 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 the Departmental Representative determine that conditions do differ materially, instructions will be issued for changes in Work as provided in Changes and Change Orders.

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 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .3 Section 02 41 31 - Selective Site Demolition.

1.2 SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit written request in advance of cutting or alteration which affects:
 - .1 Structural integrity of elements of project.
 - .2 Integrity of weather-exposed or moisture-resistant elements.
 - .3 Efficiency, maintenance, or safety of operational elements.
 - .4 Visual qualities of sight-exposed elements.
 - .5 Work of Departmental Representative or separate contractor.
- .3 Include in request:
 - .1 Identification of project.
 - .2 Location and description of affected Work.
 - .3 Statement on necessity for cutting or alteration.
 - .4 Description of proposed Work, and products to be used.
 - .5 Alternatives to cutting and patching.
 - .6 Effect on Work of Departmental Representative or separate contractor.
 - .7 Written permission of affected separate contractor.
 - .8 Date and time work will be executed.

1.3 MATERIALS

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

1.4 PREPARATION

- .1 Inspect existing conditions, including elements subject to damage or movement during removal, cutting and patching.
- .2 After uncovering, inspect conditions affecting performance of Work.
- .3 Beginning of removal, cutting or patching means acceptance of existing conditions.
- .4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.
- .5 Provide protection from elements for areas which are to be exposed by uncovering work; maintain excavations free of water.

1.5 EXECUTION

- .1 Execute removal, fitting cutting and patching including excavation, fill, existing construction, hard and soft landscaping to complete Work.
 - .2 Fit several parts together, to integrate with other Work.
 - .3 Uncover Work to install ill-timed Work.
-

- .4 Remove and replace defective and non-conforming Work.
- .5 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- .6 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.
- .7 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.
- .8 Restore work with new products in accordance with requirements of Contract Documents.
- .9 Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .10 Refinish surfaces to match adjacent finishes: Refinish continuous surfaces to nearest intersection. Refinish assemblies by refinishing entire unit.
- .11 Patch assemblies disturbed by Work.

1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Prior to the disposal of waste material identified as containing designated substance in section 01 14 25 Designated Substances Report the contractor will allow the Departmental Representative to collect representative samples of the waste material and perform TCLP leachate test to determine if the waste is to be handled and hazardous or non-hazardous waste.

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 RELATED SECTIONS

- .1 Section 01 35 43 - Environmental Procedures.
- .2 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.2 REFERENCES

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

1.3 PROJECT CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by Departmental Representative or other Contractors.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .3 Clear snow and ice from site and remove from Parliament Hill.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Provide on-site containers for collection of waste materials and debris.
- .6 Provide and use marked separate bins for recycling. Refer to Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .7 Dispose of waste materials and debris off site.
- .8 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
- .9 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .10 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .11 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .12 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.4 FINAL CLEANING

- .1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4 Remove waste products and debris other than that caused by Departmental Representative or other Contractors.

- .5 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .7 Clean and polish glass, hardware, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- .8 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures.
- .9 Clean lighting reflectors, lenses, and other lighting surfaces.
- .10 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- .11 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .12 Remove dirt and other disfiguration from exterior surfaces.
- .13 Clean and sweep areaways.
- .14 Sweep and wash clean paved areas.
- .15 Clean equipment and fixtures to sanitary condition; clean or replace filters of mechanical equipment.
- .16 Clean roofs, downspouts, and drainage systems.
- .17 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.
- .18 Remove snow and ice from access to site.
- .19 Clean monuments.
- .20 Clean signage.
- .21 Clean Summer Pavilion.
- .22 Contractor is responsible for performing necessary snow clearing within the area of work approved by the Departmental Representative. Stock piling snow within the site is possible provided that an unobstructed view can be obtained by patrolling security forces from outside the fenced site. Obstruction of view through the fence is a security noncompliance that must be addressed immediately. The Departmental Representative may issue a stop work order until satisfactory corrective action has been taken.
- .23 Do not stockpile snow outside of site at any time.

1.5 WASTE MANAGEMENT AND DISPOSAL

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

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 WASTE MANAGEMENT GOALS

- .1 Prior to start of Work conduct meeting with Departmental Representative to review and discuss PWGSC's Waste Management Plan and Goals and the Contractor's proposed Waste Reduction Workplan for Construction, Renovation and /or Demolition (CRD) waste to be project generated.
- .2 PWGSC's Waste Management Goal is 75 percent of total Project Waste to be diverted from landfill sites. Provide Departmental Representative documentation certifying that waste management, recycling, reuse of recyclable and reusable materials have been extensively practiced.
- .3 Accomplish maximum control of solid construction waste.
- .4 Preserve environment and prevent pollution and environment damage.

1.2 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.

1.3 DEFINITIONS

- .1 Class III: non-hazardous waste - construction renovation and demolition waste.
- .2 Cost/Revenue Analysis Workplan (CRAW): based on information from WRW, and intended as financial tracking tool for determining economic status of waste management practices.
- .3 Inert Fill: inert waste - exclusively asphalt and concrete.
- .4 Materials Source Separation Program (MSSP): consists of series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.
- .5 Recyclable: ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse.
- .6 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .7 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .8 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:
 - .1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
 - .2 Returning reusable items including pallets or unused products to vendors.
- .9 Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.
- .10 Separate Condition: refers to waste sorted into individual types.
- .11 Source Separation: acts of keeping different types of waste materials separate beginning from first time they became waste.
- .12 Waste Audit (WA): detailed inventory of estimated quantities of waste materials that will be generated during construction, demolition, deconstruction and/or renovation. Involves

quantifying by volume/weight amounts of materials and wastes that will be reused, recycled or landfilled. Refer to Schedule A.

- .13 Waste Diversion Report: detailed report of final results, quantifying cumulative weights and percentages of waste materials reused, recycled and landfilled over course of project. Measures success against Waste Reduction Workplan (WRW) goals and identifies lessons learned.
- .14 Waste Management Co-ordinator (WMC): contractor representative responsible for supervising waste management activities as well as coordinating related, required submittal and reporting requirements.
- .15 Waste Reduction Workplan (WRW): written report which addresses opportunities for reduction, reuse, or recycling of materials generated from the project. Specifies diversion goals, implementation and reporting procedures, anticipated results and responsibilities. Refer to Schedule B. WRW is based on information acquired from WA (Schedule A).

1.4 DOCUMENTS

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

1.5 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prepare and submit following prior to project start-up:
 - .1 Submit electronic copy in (.pdf) format or two (2) hard copies of completed Waste Audit (WA): Schedule A.
 - .2 Submit electronic copy in (.pdf) format or two (2) hard copies of completed Waste Reduction Workplan (WRW): Schedule B.
 - .3 Submit electronic copy in (.pdf) format or two (2) hard copies of Materials Source Separation Program (MSSP) description.
- .3 Submit before final payment a Waste Diversion Report summarizing the waste materials salvaged for reuse, recycling or disposal by project using deconstruction/disassembly material audit form.
 - .1 Failure to submit could result in hold back of final payment.
 - .2 Provide receipts, scale tickets, waybills, and show total, final quantities (in tonnes) and types of materials reused on and off-site, recycled, and/or disposed of.
 - .3 For each material reused, sold or recycled from project, include amount in tonnes [and quantities by number, type and size of items where appropriate] and the final destination.
 - .4 For each material land filled or incinerated from project, include amount in tonnes of material and identity of landfill, incinerator or transfer station.

1.6 WASTE AUDIT (WA)

- .1 Prepare and submit WA prior to project start-up (including completion of Schedule A).
- .2 WA provides detailed inventory, estimated quantities and types of waste materials that will be generated as well as their potential to be reused and/or recycled and project's waste diversion goals and objectives.
- .3 Post on-site WA where all personnel and any sub-contractors are able to review content.

1.7 WASTE REDUCTION WORKPLAN (WRW)

- .1 Prepare WRW prior to project start-up (including completion of Schedule B).
- .2 WRW should include but not limited to:
 - .1 Applicable regulations
 - .2 Specific goals for waste reduction, identify existing barriers and develop strategies to overcome them
 - .3 Destination of materials listed.
 - .4 Deconstruction/disassembly techniques and sequencing.
 - .5 Methods to collect, separate, and reduce generated wastes.
 - .6 Location of waste bins on-site.
 - .7 Security.
 - .8 Protection.
 - .9 Clear labelling of storage areas.
 - .10 Training plan for contractor and sub-contractors
 - .11 Details on materials handling and removal procedures.
 - .12 Quantities of materials to be salvaged for reuse or recycled and materials sent to landfill.
 - .13 Requirements for monitoring on-site wastes management activities
 - .14 Methods to track and report results reliably
- .3 Structure WRW to prioritize actions and follow 3R's hierarchy, with Reduction as first priority, followed by Reuse, then Recycle.
- .4 Describe management of waste.
- .5 Identify opportunities for reduction, reuse, and recycling of materials. Based on information acquired from WA.
- .6 Post WRW or summary where workers at site are able to review content.
- .7 Set realistic goals for waste reduction, recognize existing barriers and develop strategies to overcome these barriers.
- .8 Monitor and report on waste reduction by documenting total volume and cost of actual waste removed from project.

1.8 MATERIALS SOURCE SEPARATION PROGRAM (MSSP)

- .1 As part of Waste Reduction Workplan, prepare MSSP and have ready for use prior to project start-up.
- .2 WSSP will detail methodology and planned on-site activities for separation of reusable and recyclable materials from waste intended for landfill
- .3 Implement MSSP for waste generated on project in compliance with approved methods and as reviewed by Departmental Representative.
- .4 Provide list and drawings of locations that will be made available for sorting, collection, handling and storage of anticipated quantities of reusable and recyclable materials.
- .5 Provide on-site facilities for collection, handling, and storage of anticipated quantities of reusable and recyclable materials.
- .6 Provide clearly and securely labeled containers to deposit reusable and recyclable materials.
- .7 Locate containers in locations, to facilitate deposit of materials without hindering daily operations.
- .8 Locate separated materials in areas which minimize material damage.

- .9 Collect, handle, store on-site, and transport off-site, salvaged materials in separate condition.
 - .1 Transport to approved and authorized recycling facility.
- .10 Collect, handle, store on-site, and transport off-site, salvaged materials in combined condition.
 - .1 Ship materials to premises of Departmental Representative.
 - .2 Materials must be immediately separated into required categories for reuse or recycling.

1.9 WASTE PROCESSING SITES

- .1 Contractor is responsible to research and locate waste diversion resources and service providers. Salvaged and demolition materials are to be transported off site to approved and/or authorized recycling facilities or to users of material for recycling.

1.10 CHIEF AUTHORITIES RESPONSIBLE FOR ENVIRONMENT

- .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 416-325-4000.
- .2 Recycling Council of Ontario: 215 Spadina Avenue, #407, Toronto, ON, M5T 2C7.
 - .1 Telephone: 416-657-2797
 - .2 Email: rco@rco.on.ca.
 - .3 Recycling Council of Ontario: www.rco.on.ca.

1.11 STORAGE, HANDLING AND PROTECTION

- .1 Store, materials to be reused, recycled and salvaged in locations as directed by Departmental Representative.
- .2 Unless specified otherwise, materials for removal become the Contractor's property and shall be taken from site and disposed of in an approved manner.
- .3 Protect, stockpile, store and catalogue salvaged items.
- .4 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.
- .5 Protect structural components not removed for demolition from movement or damage.
- .6 Support affected structures. If safety of building is endangered, cease operations and immediately notify Departmental Representative.
- .7 Protect surface drainage, mechanical and electrical from damage and blockage.
- .8 Separate and store materials produced during dismantling of structures in designated areas.
- .9 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities.
 - .1 On-site source separation is recommended.
 - .2 Remove co-mingled materials to off-site processing facility for separation.
 - .3 Provide waybills for separated materials.
- .10 Prior to the disposal of waste material identified as containing designated substance in section 01 14 25 Designated Substances Report the contractor will allow the Departmental Representative to collect representative samples of the waste material and perform TCLP leachate test to determine if the waste is to be handled and hazardous or non-hazardous waste.
- .11 Dispose of all unwanted materials off-site at a location approved by the Ontario Ministry of the Environment. Comply with rules and regulations concerning hazardous materials.

- .12 Submit proof that all waste is being disposed of at a licensed land fill site or waste transfer site, upon request, including copies of waybills and copies of disposal/waste transfer site licenses.
- .13 Recycle waste materials where possible.

1.12 DISPOSAL OF WASTES

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of waste, volatile materials, mineral spirits, oil, and paint thinner into waterways, storm, or sanitary sewers.
- .3 Keep records of construction waste including:
 - .1 Number and size of bins.
 - .2 Waste type of each bin.
 - .3 Total tonnage generated.
 - .4 Tonnage reused or recycled.
 - .5 Reused or recycled waste destination.
- .4 Remove materials from deconstruction as deconstruction/disassembly Work progresses.
- .5 Prepare project summary to verify destination and quantities on a material-by-material basis as identified in pre-demolition material audit.

1.13 USE OF SITE AND FACILITIES

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

1.14 SCHEDULING

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

PART 2 PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 EXECUTION

3.1 APPLICATION

- .1 Do Work in compliance with WRW and MSSP.
- .2 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

3.2 CLEANING

- .1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.
- .2 Clean-up work area as work progresses.
- .3 Source separate materials to be reused/recycled into specified sort areas.

3.3 DIVERSION OF MATERIALS

- .1 From following list, separate materials from general waste stream and stockpile in separate piles or containers, as reviewed by Departmental Representative, and consistent with applicable fire regulations.
 - .1 Mark containers or stockpile areas.
 - .2 Provide instruction on disposal practices.
- .2 On-site sale of recovered, reusable, recyclable materials is not permitted.
- .3 Demolition Waste:

Material Type	Recommended Diversion %	Actual Diversion %
Concrete and Rubble		
Mechanical and Electrical Equipment	100	
Metals	100	
Stone	100	
Wood (uncontaminated)	100	
Other		

- .4 Construction Waste:

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

3.4 Waste Audit (WA)

- .1 Schedule A - Waste Audit (WA):

(1) Material Category	(2) Material Quantity Unit	(3) Estimated Waste %	(4) Total Quantity of Waste (unit)	(5) Generation Point	(6) % Recycled	(7) % Reused
Wood and Plastics Material Description						

Off-cuts						
Warped Pallet Forms						
Plastic Packaging						
Cardboard Packaging						
Other						

3.5 WASTE REDUCTION WORKPLAN (WRW)

.1 Schedule B:

(1) Material Category	(2) Person(s) Responsible	(3) Total Quantity of Waste (Units)	(4) Reused Amount (Units) Projected	Reused Amount (Units) -Actual	(5) Recycled Amount (Units) -Projected	Recycled Amount (Units) -Actual	(6) Material Destination
Wood and Plastics Material Description							
Warped Pallet Forms							
Plastic Packaging							
Cardboard Packaging							
Wood							
Metal							
Other							

3.6 CANADIAN GOVERNMENTAL DEPARTMENTS CHIEF RESPONSIBILITY FOR THE ENVIRONMENT

.1 Schedule E - Government Chief Responsibility for the Environment:

Jurisdiction	Address	General Inquires	Fax
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Ontario	Ministry of Environment and Energy, 135 St. Clair Avenue West Toronto ON M4V 1P5	416-325-4000 800-565-4923	-
Canada	Environment Canada Toronto ON	800-668-6767	
Ontario	Recycling Council of Ontario: 215 Spadina Avenue, #407, Toronto, ON, M5T 2C7. .1 Email: rco@rco.on.ca . .2 Recycling Council of Ontario: www.rco.on.ca .	416-657-2797	

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE REQUIREMENTS

- .1 Acceptance of Work Procedures:
 - .1 Contractor's Inspection: Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .1 Notify Departmental Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
 - .2 Request Departmental Representative inspection.
 - .2 Departmental Representative Inspection:
 - .1 Departmental Representative and Contractor to inspect Work and identify defects and deficiencies.
 - .2 Contractor to correct Work as directed.
 - .3 Completion Tasks: submit written certificates in English that tasks have been performed as follows:
 - .1 Work: completed and inspected for compliance with Contract Documents.
 - .2 Defects: corrected and deficiencies completed.
 - .3 Equipment and systems: tested, adjusted, balanced and fully operational.
 - .4 Certificates required by Utility companies: submitted.
 - .5 Operation of systems: demonstrated to Departmental Representative's personnel.
 - .6 Work: complete and ready for final inspection.
 - .4 Final Inspection:
 - .1 When completion tasks are done, request final inspection of Work by Departmental Representative, and Contractor.
 - .2 When Work incomplete according to Departmental Representative, complete outstanding items and request re-inspection.
 - .5 Declaration of Substantial Performance: when Departmental Representative considers deficiencies and defects corrected and requirements of Contract substantially performed, make application for Certificate of Substantial Performance.
 - .6 Commencement of Lien and Warranty Periods: date of Departmental Representative's acceptance of submitted declaration of Substantial Performance to be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.
 - .7 Final Payment:
 - .1 When Departmental Representative considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.
 - .2 When Work deemed incomplete by Departmental Representative, complete outstanding items and request re-inspection.

- .8 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with contractual agreement.

1.2 FINAL CLEANING

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

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 45 00 - Quality Control.
- .3 Section 01 71 00 - Examination and Preparation.

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-warranty Meeting:
 - .1 Convene meeting one week prior to contract completion with contractor's representative and Departmental Representative to:
 - .1 Verify Project requirements.
 - .2 Review warranty requirements, manufacturer's and installation instructions.
 - .2 Departmental Representative to establish communication procedures for:
 - .1 Notifying construction warranty defects.
 - .2 Determine priorities for type of defects.
 - .3 Determine reasonable response time.
 - .3 Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for construction warranty work action.
 - .4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

1.3 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Two (2) weeks prior to Substantial Performance of the Work, submit to the Departmental Representative, four (4) final copies of operating and maintenance manuals in English and French.
- .3 Provide spare parts, maintenance materials, and special tools new and of same quality and manufacture as products provided in Work.
 - .1 Inventory and provide listing in operating and maintenance manuals.
- .4 Provide evidence, if requested, for type, source and quality of products supplied.

1.4 FORMAT

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

- .8 Drawings: provide with reinforced punched binder tab.
 - .1 Bind in with text; fold larger drawings to size of text pages.
- .9 Provide 1:1 scaled CAD files in (.dwg) and PDF format on CD or solid state storage device approved by the Departmental Representative.

1.5 CONTENTS - PROJECT RECORD DOCUMENTS

- .1 Table of Contents for Each Volume: provide title of project;
 - .1 Date of submission; names.
 - .2 Addresses and telephone numbers of Departmental Representative and Contractor with name of responsible parties.
 - .3 Schedule of products and systems, indexed to content of volume.
- .2 For each product or system:
 - .1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- .3 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems.
- .5 Typewritten Text: as required to supplement product data.
 - .1 Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.

1.6 AS -BUILT DOCUMENTS AND SAMPLES

- .1 Maintain, at site for Departmental Representative one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to Contract.
 - .5 Reviewed shop drawings, product data, and samples.
 - .6 Field test records.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction.
 - .1 Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.
 - .1 Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition.
 - .1 Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by Departmental Representative.

1.7 RECORDING INFORMATION ON PROJECT RECORD DOCUMENTS

- .1 Record information in copy of Project Manual and on set of black line opaque drawings provided by Departmental Representative.

- .2 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress.
 - .1 Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: mark each item to record actual construction, including:
 - .1 Measured depths of elements of foundation in relation to survey datum.
 - .2 Measured horizontal and vertical locations of underground utilities, salvaged and as found elements to remain and bedrock outcrops, referenced to permanent surface improvements.
 - .3 Measured locations of internal utilities and appurtenance, referenced to visible and accessible features of construction.
 - .4 Field changes of dimension and detail.
 - .5 Changes made by change orders.
 - .6 Details not on original Contract Drawings.
 - .7 Location of all salvaged and found elements
 - .8 References to related shop drawings and modifications.
- .5 Specifications: mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Addenda and change orders.
- .6 At completion of project and before final inspection, neatly transfer notations to second set of drawings and specifications. Submit both sets to Departmental Representative.
- .7 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.
- .8 Provide digital photos, if requested, for site records.

1.8 FINAL SURVEY

- .1 Submit final site survey certificate in accordance with Section 01 71 00 - Examination and Preparation, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.

1.9 MATERIALS AND FINISHES

- .1 Building products, applied materials, and finishes: include product data, with catalogue number, size, composition, and colour and texture designations.
 - .1 Provide information for re-ordering custom manufactured products.
- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .3 Moisture-protection and weather-exposed products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .4 Additional requirements: as specified in individual specifications sections.

1.10 MAINTENANCE MATERIALS

- .1 Spare Parts:
 - .1 Provide spare parts, in quantities specified in individual specification sections.
 - .2 Provide items of same manufacture and quality as items in Work.
 - .3 Deliver to location as directed; place and store.

- .4 Receive and catalogue items.
 - .1 Submit inventory listing to Departmental Representative.
 - .2 Include approved listings in Maintenance Manual.
- .5 Obtain receipt for delivered products and submit prior to final payment.
- .2 Extra Stock Materials:
 - .1 Provide maintenance and extra materials, in quantities specified in individual specification sections.
 - .2 Provide items of same manufacture and quality as items in Work.
 - .3 Deliver to location as directed; place and store.
 - .4 Receive and catalogue items.
 - .1 Submit inventory listing to Departmental Representative.
 - .2 Include approved listings in Maintenance Manual.
 - .5 Obtain receipt for delivered products and submit prior to final payment.
- .3 Special Tools:
 - .1 Provide special tools, in quantities specified in individual specification section.
 - .2 Provide items with tags identifying their associated function and equipment.
 - .3 Deliver to location as directed; place and store.
 - .4 Receive and catalogue items.
 - .1 Submit inventory listing to Departmental Representative.
 - .2 Include approved listings in Maintenance Manual.

1.11 DELIVERY, STORAGE AND HANDLING

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

1.12 WARRANTIES AND BONDS

- .1 Develop warranty management plan to contain information relevant to Warranties.
- .2 Submit warranty management plan, 30 days before planned pre-warranty conference, to Departmental Representative approval.
- .3 Warranty management plan to include required actions and documents to assure that Departmental Representative receives warranties to which it is entitled.
- .4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
- .5 Submit, warranty information made available during construction phase, to Departmental Representative for approval prior to each monthly pay estimate.
- .6 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:
 - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
 - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

- .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten (10) days after completion of applicable item of work.
- .4 Verify that documents are in proper form, contain full information, and are notarized.
- .5 Co-execute submittals when required.
- .6 Retain warranties and bonds until time specified for submittal.
- .7 Except for items put into use with Departmental Representative's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
- .8 Respond in timely manner to oral or written notification of required construction warranty repair work.
- .9 Written verification to follow oral instructions.
 - .1 Failure to respond will be cause for the Departmental Representative to proceed with action against Contractor.

PART 2 PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION