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Number R.065998.001		2013-07-25

Project Title OSHAWA, ONTARIO  
OSHAWA HARBOUR WEST WHARF SOUTH  
IMPLEMENTATION OF RISK MANAGEMENT MEASURES

Project Number R.065998.001

Project Date 2013-07-25



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PROFESSIONAL SEALS

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Consultants

Discipline	Address	Professional Seal
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END





## PART 1 - GENERAL

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

1.2 WORK COVERED BY CONTRACT DOCUMENTS .1 Work of this Contract comprises construction and completion of the site works associated with the Oshawa Harbour West Wharf South, Implementation of Risk Management Measures including, but not limited to, asphalt removal, gravel regrading, new asphalt placement, monitoring well extension and cap placement, as shown on the drawings. This project is identified as PWGSC Project Number R.032459.006.

1.3 CONTRACT METHOD .1 Construct work under combined price contract.

## PART 2 - PRODUCTS

2.1 NOT USED .1 Not used.

## PART 3 - EXECUTION

3.1 NOT USED .1 Not used.



PART 1 - GENERAL

1.1 MINIMUM  
STANDARDS

- .1 Execute work to meet or exceed:
  - .1 National Building Code of Canada 2010, National Fire Code of Canada 2010, Canadian Electrical Code 2012, Ontario Building Code 2012, Ontario Electrical Safety Code 2012 and all bulletins (Ontario), and any other code of federal, provincial or local application, including all amendments up to project date, provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
  - .2 Rules and regulations of authorities having jurisdiction.
  - .3 Observe and enforce construction safety measures required by:
    - .1 National Building Code 2010, Division B Part 8 Safety Measures at Construction and Demolition Sites.
    - .2 Occupational Health and Safety Act and Regulations for Construction Projects, Revised Statutes of Ontario 1990, Chapter 0.1 as amended, 0.Reg. 213/91 as amended.
    - .3 Workplace Safety and Insurance Act.
    - .4 Municipal statutes and authorities.
  - .4 Environmental Protection Act, Revised Statutes of Ontario 1990, Chapter E.19 as amended, 0.Reg. 153/04 Records of Site Condition - Part XV, 1 of the Act, and Revised Regulations of Ontario 1990, Regulation 347 General - Waste Management as amended.
  - .5 CCME (Canadian Council of Ministers of the Environment) Contaminated Sites, Contaminated Soil and Groundwater, and Remediation of Contaminated Sites most current publications.
  - .6 Canadian Environmental Assessment Act.
  - .7 Canadian Environmental Protection Act (New Substance Notification Regulations).
  - .8 Transportation of Dangerous Goods Act.
  - .9 Fisheries Act.
  - .10 Migratory Birds Convention Act.
  - .11 Migratory Birds Regulations.
  - .12 Species at Risk Act.

- |  |    |  |
|--|----|--|
| 1.1 MINIMUM STANDARDS<br>(Cont'd)          | .1 | (Cont'd)<br>.13 Ontario Water Resources Act, 0.Reg. 203 Wells.   |
| 1.2 AUTHORITIES HAVING JURISDICTION        | .1 | Environment Canada.  |
|  | .2 | Fisheries and Oceans Canada.   |
|  | .3 | The Fire Commissioner of Canada is the sole authority having jurisdiction over this project with regards to fire standards.  |
| 1.3 MEASUREMENT PROCEDURES                 | .1 | For items of work shown in the Combined Price Form, the Contractor shall allow in the price for the supply of materials, equipment, labour, and installation as specified. |
|  | .2 | Items of work not included in the Combined Price Form will not be measured for payment and shall be considered incidental to the work.                                     |
| 1.4 TAXES                                  | .1 | Pay applicable Federal, Provincial and Municipal taxes.  |
| 1.5 FEES, PERMITS CERTIFICATES AND LETTERS | .1 | Provide authorities having jurisdiction with information requested.  |
|  | .2 | Pay fees and obtain certificates and permits required.   |
| 1.6 EXAMINATION                            | .1 | It is highly recommended that the contractor attend the site visit during the bidding process.   |
|  | .2 | Examine existing conditions and determine conditions affecting work.   |
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- |  |    |  |
|--|----|--|
| <u>1.6 EXAMINATION<br/>(Cont'd)</u>  | .3 | Notify Departmental Representative in writing of any discrepancies between contract documents and site conditions.   |
| <br>   |    |  |
| <u>1.7 DOCUMENTS</u>   | .1 | Keep one copy of contract documents, shop drawings and product data on the site.   |
| <br>   |    |  |
| <u>1.8 ELECTRONIC<br/>SUBMITTALS</u>   | .1 | Submit number of hard copies specified for each type and format of submittal and also submit in electronic format as pdf files on USB 2.0 compatible with PWGSC encryption requirements or through email or alternate electronic file sharing service such as ftp, as directed by Departmental Representative. Security requirements and protocol will be supplied by Departmental Representative.                                     |
| <br>   |    |  |
| <u>1.9 CONTRACTOR'S<br/>AS-BUILT DRAWINGS,<br/>SPECIFICATIONS AND<br/>AERIAL PHOTOGRAPHS</u> | .1 | As work progresses, neatly record significant deviations from the Contract drawings, specifications and aerial photographs using fine, red marker on full size white prints and specifications. Make the same changes on the electronic files.   |
|  | .2 | Neatly print lettering and numbers in size to match original. Lines may be drawn free-hand but shall be neat and accurate. Add at each title block note: "AS BUILT". Also circle on List of Drawings/Photographs each title and number of drawing/photograph marked with "AS-BUILT" information. Circle on Table of Contents each specification section number and title of specification sections marked with "AS-BUILT" information. |
|  | .3 | Departmental Representative will provide one electronic set of drawings, aerial photographs, schedules and specifications for as-built drawing and specification purposes.<br>.1 Drawings are in Autocad.<br>.2 Addenda and amendments are in MS Word.   |
-

1.9 CONTRACTOR'S  
AS-BUILT DRAWINGS,  
SPECIFICATIONS AND  
AERIAL PHOTOGRAPHS  
(Cont'd)

- .3 (Cont'd)
  - .3 Specifications are in NMS Edit Professional.
  - .4 Aerial photographs are in pdf format.
- .4 Record following significant deviations:
  - .1 Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvement.
  - .2 Field changes of dimension.
  - .3 Other significant deviations which are concealed in construction and can not be identified by visual inspection.
  - .4 Deviation identified by Departmental Representative.
- .5 Turn one set, paper copy and electronic copy, of AS-BUILT drawings, specifications and aerial photographs over to Departmental Representative on completion of work.
- .6 If project is completed without significant deviations from Contract drawings, specifications and aerial photographs submit to Departmental Representative one set of drawings and specifications marked "AS-BUILT".

1.10 CONSTRUCTION  
PHOTOGRAPHS

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

1.11 ADDITIONAL  
DRAWING/PHOTOGRAPHS

- .1 Departmental Representative may furnish additional drawings/aerial photographs to clarify work.
- .2 Such drawings/aerial photographs become part of Contract Documents.

1.12 PROTECTION

- .1 Protect existing work from damage.
- .2 Replace damaged existing work with material and finish to match original at no additional cost.
- .3 Protect existing trees and plants on site and adjacent properties that are not required to be cleared for construction.

1.13 EXISTING  
SERVICES

- .1 Establish location, protect and maintain existing utility lines.

1.14 TEMPORARY  
FACILITIES AND  
SERVICES

- .1 Provide sanitary facilities, water and power and any other required temporary facilities and services in accordance with Ontario Ministry of Labour requirements.
- .2 Completely remove temporary facilities and services on completion of work.

1.15 ACCESS TO SITE

- .1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to work.
- .2 Provide traffic management measures (such as a 'flag person') if required at site access points to direct traffic and protect the public.
- .3 Coordinate with the Oshawa Harbour Commission all other safety requirements and comply with all.

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|---|----|---|
| <u>1.15 ACCESS TO SITE</u><br>(Cont'd)                  | .4 | Protect travelling public from damage to person and property.   |
|   | .5 | Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.  |
|   | .6 | Verify adequacy of existing roads and allowable load limit on these roads.<br>Contractor: responsible for repair of damage to roads caused by construction operations.  |
|   | .7 | Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.   |
|   | .8 | Dust control: adequate to ensure safe operation at all times.   |
| <br>  |    |   |
| <u>1.16 FIRE ROUTES</u>                                 | .1 | Maintain access to property including overhead clearances for use by emergency response vehicles.   |
| <br>  |    |   |
| <u>1.17 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY</u> | .1 | Protect surrounding private and public property from damage during performance of work.   |
|   | .2 | Be responsible for damage incurred.   |
| <br>  |    |   |
| <u>1.18 METRIC SIZED MATERIALS</u>                      | .1 | SI metric units of measurement are used exclusively on the drawings and in the specifications for this project.   |
|   | .2 | The Contractor is required to provide metric products in the sizes called for in the Contract Documents except where a valid claim can be made that a particular product is not available on the Canadian market. |
|   | .3 | Claims for exemptions from use of metric sized products shall be in writing and fully substantiated with supportive documentation.  |
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1.18 METRIC SIZED  
MATERIALS  
(Cont'd)

- .3 (Cont'd)  
Promptly submit application to Departmental Representative for consideration and ruling. Non-metric sized products may not be used unless Contractor's application has been approved in writing by the Departmental Representative.
- .4 Difficulties caused by the Contractor's lack of planning and effort to obtain modular metric sized products which are available on the Canadian market will not be considered sufficient reasons for claiming that they cannot be provided.
- .5 Claims for additional costs due to provision of specified modular metric sized products will not be considered.

1.19 MATERIAL AND  
EQUIPMENT

- .1 Use new products unless otherwise specified.
- .2 Deliver and store material and equipment to manufacturer's instructions with manufacturer's labels and seals intact.
- .3 When material or equipment is specified by standard or performance specifications, upon request of Departmental Representative, obtain from manufacturer an independent testing laboratory report, stating that material or equipment meets or exceeds specified requirements.

1.20 CO-ORDINATION  
AND CO-OPERATION

- .1 Site will not be occupied during execution of work.
- .2 Maintain access and exits.
- .3 Provide means to maintain security.
- .4 Unless otherwise directed, Contractor shall give the Departmental Representative two weeks notice of co-ordinating the staging of the work to allow the Oshawa Harbour Commission to

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- 1.20 CO-ORDINATION .4 (Cont'd)  
AND CO-OPERATION facilitate the work by clearing the site of  
(Cont'd) third party activities.
- 
- 1.21 ALTERATIONS TO .1 Remove and recycle, compost, anaerobic digest  
EXISTING SITE or dispose of:  
.1 Trees, shrubs and other plant material  
as indicated in Section 31 00 00.01.
- 1.22 TEMPORARY .1 Maintain Health and Safety signs for duration  
SIGNS of project.  
.2 Dismantle and dispose of signs and frames on  
completion of work.
- 1.23 INSPECTION AND .1 When tests and inspections (independent or  
TESTING otherwise) reveal work not to contract  
requirements, Contractor shall pay for tests  
and inspections required by Departmental  
Representative on corrected work.  
.2 Independent testing agency may be employed  
and paid for by Departmental Representative to  
independently evaluate or access the work and  
materials furnished by the Contractor.
- 1.24 SCHEDULING .1 On notice of Award of Contract submit bar  
chart construction schedule for work in  
accordance with Section 01 32 16.07.
- 1.25 CLEANING .1 Maintain project free of accumulated waste  
and rubbish. Remove construction debris, waste  
materials, packaging material from work site  
daily.  
.2 Final cleaning:  
.1 Remove temporary protection.
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- |                               |    |   |
|-------------------------------|----|---|
| 1.25 CLEANING<br>(Cont'd)     | .2 | Final cleaning:(Cont'd)<br>.2 Clean dirt or mud tracked onto paved or surfaced roadways.  |
| <br>                          |    |   |
| 1.26 DESIGNATED<br>SUBSTANCES | .1 | The project site has been surveyed for the presence of designated substances referred to in the Occupational Health and Safety Act and Regulations for Construction Projects, O.Reg. 213/91 as amended.   |
|                               | .2 | The list of designated substances present at the project site is attached in Appendix A.  |
|                               | .3 | Provide copies of this list to each prospective subcontractor prior to entering into a contract with them.  |
|                               | .4 | Post prominent notices identifying and warning of the hazardous agent in the part of the workplace in which the agent is found or used. Notices shall be in English and other languages prescribed under the Act.   |
| <br>                          |    |   |
| 1.27 CONSTRUCTION<br>WASTE    | .1 | Submit a waste reduction workplan indicating the materials and quantities of material that will be recycled and diverted from landfill.<br>.1 Indicate how material being removed from the site will be reused or recycled.   |
|                               | .2 | Submit proof that all waste is being disposed of at a licensed land fill site or waste transfer site. A copy of the disposal/waste transfer site's license and a letter verifying that said landfill site will accept the waste must be supplied to Departmental Representative prior to removal of waste from the demolition site. |
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- 1.28 SPECIAL PROTECTION AND PRECAUTIONS .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 acceptable to HRSDC - Labour Program and Ontario MOL.
- 1.29 POLLUTION CONTROL .1 Spills of deleterious substances:  
.1 Immediately contain, limit spread and clean up in accordance with provincial regulatory requirements.  
.2 Report immediately to Ontario Spills Action Centre: 1-800-268-6060.  
.3 Further information on dangerous goods emergency cleanup and precautions including a list of companies performing this work can be obtained from the Transport Canada 24-hour number (613) 996-6666 collect.
- 1.30 OPSS AND OPSD .1 OPSS Ontario Provincial Standard Specifications and OPSD Ontario Provincial Standard Drawings quoted in these specifications are available online at <http://www.raqsa.mto.gov.on.ca/techpubs/ops.nsf/OPSHomepage>.
- 1.31 PROJECT MEETINGS .1 Administrative:  
.1 Schedule and administer project meetings throughout the progress of the work at the call of Departmental Representative.  
.2 Prepare agenda for meetings.  
.3 Distribute written notice of each meeting four days in advance of meeting date to Departmental Representative.  
.4 Provide physical space and make arrangements for meetings.  
.5 Preside at meetings.  
.6 Record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties. Submit the meeting minutes to the Departmental
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1.31 PROJECT  
MEETINGS  
(Cont'd)

- .1 Administrative:(Cont'd)
  - .6 (Cont'd)

Representative and circulate to attending parties and affected parties not in attendance.
  - .7 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.
  - .8 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.
- .2 Preconstruction meeting:
  - .1 Within 15 days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
  - .2 Departmental Representative, Contractor, major Subcontractors, field inspectors and supervisors will be in attendance.
  - .3 Establish time and location of meeting and notify parties concerned minimum 5 days before meeting.
  - .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 16.07.
    - .3 Schedule of submission of shop drawings, samples, colour chips. Submit submittals.
    - .4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities and fences.
    - .5 Site security.
    - .6 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
    - .7 Owner provided products.
    - .8 Record drawings, specifications and aerial photographs.

1.31 PROJECT  
MEETINGS  
(Cont'd)

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- .2 Preconstruction meeting:(Cont'd)
  - .5 Agenda to include:(Cont'd)
    - .9 Maintenance manuals.
    - .10 Take-over procedures, acceptance, warranties.
    - .11 Monthly progress claims, administrative procedures, photographs, hold backs.
    - .12 Appointment of inspection and testing agencies or firms.
    - .13 Insurances, transcript of policies.
- .3 Progress meetings:
  - .1 During course of Work and 2 weeks prior to project completion, schedule progress meetings bi-weekly.
  - .2 Contractor, major Subcontractors involved in Work and Departmental Representative are to be in attendance.
  - .3 Notify parties minimum 3 days prior to meetings.
  - .4 Record minutes of meetings and circulate to attending parties and affected parties not in attendance within 3 days after meeting.
  - .5 Include submittals in accordance with Section 01 35 43.01.
  - .6 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.

1.31 PROJECT MEETINGS (Cont'd)	.3	Progress meetings:(Cont'd)
	.6	(Cont'd)
	.12	Other business.

1.32 PUBLIC COMPLAINTS	.1	Any public complaint shall be brought forward to Departmental Representative and responded to in a timely manner.
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## PART 2 - PRODUCTS

2.1 NOT USED	.1	Not used.
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## PART 3 - EXECUTION

3.1 NOT USED	.1	Not used.
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## PART 1 - GENERAL

### 1.1 DEFINITIONS

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

- 1.1 DEFINITIONS (Cont'd)
- .8 Project Schedule:(Cont'd)  
Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.
  - .9 Project Planning, Monitoring and Control System: overall system operated by Departmental Representative to enable monitoring of project work in relation to established milestones.
- 1.2 REQUIREMENTS
- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
  - .2 Plan to complete Work in accordance with prescribed milestones and time frame.
  - .3 Limit activity durations to maximum of approximately 10 working days, to allow for progress reporting.
  - .4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Certificate of Substantial Performance and Certificate of Completion as defined times of completion are of essence of this contract.
- 1.3 SUBMITTALS
- .1 Provide submittals in accordance with Section 01 33 00.
  - .2 Submit to Departmental Representative within 5 working days of Award of Contract Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.
  - .3 Submit Project Schedule to Departmental Representative within 5 working days of receipt of acceptance of Master Plan.
-

#### 1.4 PROJECT MILESTONES

- .1 Project milestones form interim targets for Project Schedule.
  - .1 Mobilization completed within 15 working days of Award of Contract date.
  - .2 Grading: clear existing asphalt and gravel (50 mm over site area, and additional 250 mm under asphalt apron area). Grade and compact subgrade to 98% proctor density completed within 25 working days of Award of Contract date.
  - .3 Place geotextile within 29 working days of Award of Contract date.
  - .4 Placement and compaction of 300 mm Granular A cap completed within 45 working days of Award of Contract date.
  - .5 Placement of asphalt curtain (40 mm HL4 and 60 mm HL8) within 40 working days of Award of Contract date.
  - .6 Restoration within 50 working days of Award of Contract date.
  - .7 Demobilization within 55 working days of Award of Contract date.
  - .8 Certificate of Substantial Completion within 56 working days of Award of Contract date.

#### 1.5 MASTER PLAN

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

1.6 PROJECT  
SCHEDULE

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:
  - .1 Notice of Award.
  - .2 Permits.
  - .3 Mobilization.
  - .4 Establishment of Erosion and Sediment Controls.
  - .5 Debris Management.
  - .6 Site Clearing.
  - .7 Monitoring Well Extension.
  - .8 Subgrade Preparation (Cut and Fill).
  - .9 Cap Replacement/Construction by Areas.
  - .10 Asphalt.
  - .11 Submittal of As-built Record Drawings.

1.7 PROJECT  
SCHEDULE REPORTING

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

1.8 PROJECT  
MEETINGS

- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.
  - .2 Weather related delays with their remedial measures will be discussed and negotiated.
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PART 2 - PRODUCTS

2.1 NOT USED .1 Not used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not used.



PART 1 - GENERAL

1.1 SECTION  
INCLUDES

- .1 Shop Drawings and Product Data.
- .2 Samples.
- .3 Permits and Certificates.

1.2 ADMINISTRATIVE

- .1 List of submittals should include, but not be limited to, the following:
    - .1 Silt fence fabric manufacturer specifications.
    - .2 Granular materials source locations.
    - .3 Grain size analysis for Granular A material.
    - .4 Two copies of an Erosion and Sediment Control Plan, as per OPSS 577 Nov. 2006.
    - .5 A spill management and emergency response plan.
  - .2 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.
  - .3 Do not proceed with Work affected by submittal until review is complete.
  - .4 Present shop drawings, product data, samples and mock-ups in SI Metric units.
  - .5 Where items or information is not produced in SI Metric units converted values are acceptable.
  - .6 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
-

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- 1.2 ADMINISTRATIVE (Cont'd)
- 
- .6 (Cont'd)  
Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .7 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .8 Verify field measurements and affected adjacent Work are co-ordinated.
- .9 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .10 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .11 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 of Canada.
- .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and
-



1.3 SHOP DRAWINGS  
AND PRODUCT DATA  
(Cont'd)

- .3 (Cont'd)  
installed. Indicate cross references to design drawings and specifications.
- .4 Allow 5 working 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, in duplicate, containing:
  - .1 Date.
  - .2 Project title and number.
  - .3 Contractor's name and address.
  - .4 Identification and quantity of each shop drawing, product data and sample.
  - .5 Other pertinent data.
- .8 Submissions shall include:
  - .1 Date and revision dates.
  - .2 Project title and number.
  - .3 Name and address of:
    - .1 Subcontractor.
    - .2 Supplier.
    - .3 Manufacturer.
  - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
  - .5 Details of appropriate portions of Work as applicable:
    - .1 Fabrication.
    - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
    - .3 Setting or erection details.

1.3 SHOP DRAWINGS  
AND PRODUCT DATA  
(Cont'd)

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- .8 Submissions shall include:(Cont'd)
    - .5 (Cont'd)
      - .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 three prints and one electronic copy of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
  - .11 Submit three prints and one electronic copy of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
  - .12 Submit three prints and one electronic copy 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 one month of date of notice of award for project.
  - .13 Submit three prints and one electronic copy 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.
-

1.3 SHOP DRAWINGS  
AND PRODUCT DATA  
(Cont'd)

- .13 (Cont'd)
  - .2 Certificates must be dated after award of project contract complete with project name.
- .14 Submit three prints and one electronic copy of manufacturers 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 three prints and one electronic copy 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 Delete information not applicable to project.
- .18 Supplement standard information to provide details applicable to project.
- .19 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.
- .20 The review of shop drawings by Public Works and Government Services Canada (PWGSC) is for sole purpose of ascertaining conformance with general concept.
  - .1 This review shall not mean that PWGSC approves detail design inherent in shop

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- 1.3 SHOP DRAWINGS .20 (Cont'd)  
AND PRODUCT DATA  
(Cont'd)
- .1 (Cont'd)  
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
- .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 Adjustments made on samples by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .5 Make changes in samples which Departmental Representative may require, consistent with Contract Documents.
- .6 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.
-

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.



## PART 1 - GENERAL

- 1.1 REFERENCES
- .1 Province of Ontario:
    - .1 Occupational Health and Safety Act Revised Statutes of Ontario 1990, Chapter O.1 as amended, and Regulations for Construction Projects, O. Reg. 213/91 as amended.
    - .2 Workplace Safety and Insurance Act, 1997.
    - .3 Municipal statutes and authorities.
    - .4 Part 8 of the National Building Code: Construction Safety Measures at Construction and Demolition Sites.

- 1.2 SUBMITTALS
- .1 Make submittals in accordance with Section 01 33 00.
  - .2 Submit site-specific Health and Safety Plan: Within 5 working days after date of Notice of Award and prior to commencement of Work. Health and Safety Plan must include:
    - .1 Results of site specific safety hazard assessment.
    - .2 Results of safety and health risk or hazard analysis for site tasks and operations.
    - .3 Measures/controls to be implemented to address identified safety hazards/risks.
    - .4 Contractor's and Subcontractor's Safety Communication Plan.
    - .5 Contingency and Emergency Response Plan addressing standard operating procedures specific to the project site to be implemented during emergency situations.
    - .6 Location of nearest medical facilities.
    - .7 Names and numbers for all contractors, sub-contractors, departmental representatives, and emergency contacts.
-

1.2 SUBMITTALS  
(Cont'd)

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- .2 (Cont'd)
    - .8 Spills Management and Emergency Response Plan.
    - .9 Basic First Aid measures for contaminants of concern.
    - .10 Health and Safety requirements regarding the use of on-site equipment.
    - .11 Health and Safety requirements regarding the excavation of contaminated soil, operating around open excavations, and backfilling of excavations.
  - .3 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 5 working days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 5 working days after receipt of comments from Departmental Representative.
  - .4 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
  - .5 Submit names of personnel and alternates responsible for site safety and health.
  - .6 Submit records of Contractor's Health and Safety meetings when requested.
  - .7 Submit 2 copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative at project meetings.
  - .8 Submit copies of orders, directions or reports issued by health and safety inspectors of the authorities having jurisdiction.
  - .9 Submit copies of incident and accident reports.
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|--|-----|--|
| <u>1.2 SUBMITTALS<br/>(Cont'd)</u>     | .10 | Submit Workplace Safety and Insurance Board (WSIB)- Experience Rating Report.  |
|  | .11 | Submit Material Safety Data Sheets (MSDS).   |
| <u>1.3 FILING OF<br/>NOTICE</u>        | .1  | File Notice of Project with Provincial authorities prior to commencement of Work.  |
| <u>1.4 WORK PERMIT</u>                 | .1  | Obtain building permits related to project prior to commencement of Work.  |
| <u>1.5 SAFETY<br/>ASSESSMENT</u>       | .1  | Perform site specific safety hazard assessment related to project prior to mobilization and at regular points throughout the work and incorporate findings as updates to health and safety plan. |
| <u>1.6 MEETINGS</u>                    | .1  | Schedule with Departmental Representative and administer Health and Safety meeting in accordance with Section 01 11 06, prior to commencement of work.   |
| <u>1.7 REGULATORY<br/>REQUIREMENTS</u> | .1  | Comply with the Acts and regulations of the Province of Ontario.   |
|  | .2  | Comply with specified standards and regulations to ensure safe operations at site.   |
-

- 1.8 PROJECT/SITE CONDITIONS .1 Work at site will involve contact with:  
.1 Substances listed in report in Appendix A.
- 1.9 GENERAL REQUIREMENTS .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns either accepting or requesting improvements.
- .3 Relief from or substitution for any portion or provision of minimum Health and Safety standards specified herein or reviewed site-specific Health and Safety Plan shall be submitted to Departmental Representative in writing.
- .4 Workers and site visitors shall be required to wear appropriate personal safety equipment to reduce risk and ensure health and safety of workers and visitors.
- 1.10 COMPLIANCE REQUIREMENTS .1 Comply with Ontario Occupational Health and Safety Act, R.S.O. 1990 Chapter 0.1, as amended, and the associated regulations made under the Act.
- 1.11 RESPONSIBILITY .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to
-

- 1.11 RESPONSIBILITY (Cont'd)
- .1 (Cont'd)  
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 The Contractor shall assume the role of  
"Constructor", as defined under Ontario  
Regulation 213/91 - Construction Projects  
of Ontario OSHA.
- 1.12 UNFORESEEN HAZARDS
- .1 Should any unforeseen or peculiar  
safety-related factor, hazard, or  
condition become evident during  
performance of Work, immediately stop  
work and advise Departmental  
Representative verbally and in writing.
  - .2 Follow procedures in place for Employees  
Right to Refuse Work as specified in the  
Occupational Health and Safety Act for  
the Province of Ontario.
- 1.13 POSTING OF DOCUMENTS
- .1 Ensure applicable items, articles,  
notices and orders are posted in  
conspicuous location on site in  
accordance with Acts and Regulations of  
Province of Ontario, and in consultation  
with Departmental Representative.
    - .1 Contractor's Safety Policy.
    - .2 Constructor's Name.
    - .3 Notice of Project.
    - .4 Form 1000 - "Registration of  
Constructors and Employees engaged in  
construction for all contractors,  
sub-contractors, consultants or employers  
working at the site.
-

- |                                       |     |  |
|---------------------------------------|-----|--|
| 1.13 POSTING OF DOCUMENTS<br>(Cont'd) | .1  | (Cont'd)   |
|                                       | .5  | Occupational Health and Safety Act and Regulations for Construction Projects for Province of Ontario.  |
|                                       | .6  | Address and phone number of nearest Ministry of Labour office.   |
|                                       | .7  | Written emergency Response Plan.   |
|                                       | .8  | Site Specific Safety Plan.   |
|                                       | .9  | Valid certificate of first aider on duty.  |
|                                       | .10 | WSIB "In Case of Injury At Work" poster.   |
|                                       | .11 | Location of toilet and cleanup facilities.   |
| 1.14 CORRECTION OF NON-COMPLIANCE     | .1  | Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.   |
|                                       | .2  | Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.  |
|                                       | .3  | Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.   |
| 1.15 BLASTING                         | .1  | Blasting or other use of explosives is not permitted.  |
| 1.16 WORK STOPPAGE                    | .1  | Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.  |
|                                       | .2  | Assign responsibility and obligation to Competent Supervisor to stop or start Work when, at Competent Supervisor's discretion, it is necessary or advisable for reasons of health or safety. |
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1.16 WORK STOPPAGE .2 (Cont'd)  
(Cont'd) Departmental Representative may also stop  
Work for health and safety  
considerations.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not used.



## PART 1 - GENERAL

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|---------------------------------------|----|---|
| <u>1.1 DEFINITIONS</u>                | .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. |
| <u>1.2 REFERENCES</u>                 | .1 | U.S. Environmental Protection Agency (EPA)<br>.1 EPA Method 1311 Toxicity Characteristic Leaching Procedure.  |
| <u>1.3 MEASUREMENT<br/>PROCEDURES</u> | .1 | Measurement for Payment for soil testing shall be measured by each.   |
| <u>1.4 SUBMITTALS</u>                 | .1 | Submittals: in accordance with Section 01 33 00.  |
|                                       | .2 | Prior to commencing construction activities or delivery of materials to site, submit Environmental Protection Plan for review and approval by Departmental Representative. Environmental Protection Plan is to present comprehensive overview of known or potential environmental issues which must be addressed during construction.   |
-

1.4 SUBMITTALS  
(Cont'd)

- .3 Address topics at level of detail commensurate with environmental issue and required construction tasks.
- .4 Environmental protection plan: include:
  - .1 Names of persons responsible for ensuring adherence to Environmental Protection Plan.
  - .2 Names, qualifications and documentation of persons responsible for manifesting hazardous waste to be removed from site.
  - .3 Names, qualifications and documentation of persons responsible for training site personnel.
  - .4 Descriptions of environmental protection personnel training program.
  - .5 Erosion and sediment control plan which identifies type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.
  - .6 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 Control Plan: including procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.



- |                                |    |   |
|--------------------------------|----|---|
| 1.4 SUBMITTALS<br>(Cont'd)     | .4 | <p>Environmental protection plan:(Cont'd)</p> <p>.10 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.</p> <p>.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.</p> <p>.12 Contaminant prevention plan that: identifies potentially hazardous substances to be used on job site; identifies intended actions to prevent introduction of such materials into air, water, or ground; and details provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.</p> <p>.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.</p> |
| 1.5 SOIL SAMPLE TESTING (TCLP) | .1 | <p>Contractor to collect soil samples from top 50 mm of soil and submit soil samples to approved laboratory for Standard Toxicity Characteristic Leaching Procedure (EPA Method 1311). Analysis will be used to assist in waste characterization of soil for disposal purposes.</p>   |
|                                | .2 | <p>Laboratory subject to the approval of the Department Representative.</p>   |
|                                | .3 | <p>Soil sample locations subject to the approval of the Department Representative.</p>  |
| 1.6 FIRES                      | .1 | <p>Fires and burning of rubbish on site is not permitted.</p>   |

1.7 DISPOSAL OF  
WASTES

- .1 Do not bury rubbish and waste materials on site.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- .3 Do not discharge wastes into streams or waterways.
- .4 Separate and dispose of accumulated waste materials off-site in accordance with RRO 1990, Reg. 347 General Waste Management, to MOE approved disposal facilities or approved transfer stations, including, but not limited to, the following:
  - .1 Debris including excess construction material.
  - .2 Non-contaminated litter and rubbish.
- .5 Disposal/recycling of other waste generated during the project shall be done in compliance with Ontario waste regulations and the facilities used will be approved by Transport Canada and in accordance with Section 01 11 06.

1.8 EQUIPMENT  
DECONTAMINATION

- .1 Commence Work involving equipment contact with potentially contaminated material only after Equipment Decontamination Pads are operational.
- .2 Decontaminate equipment after working in potentially contaminated work areas and prior to subsequent work or travel on clean areas.
- .3 Perform equipment decontamination on Contractor-constructed equipment decontamination pad to prevent cross contaminating unimpacted areas.
- .4 Equipment Decontamination Pads to include pad, potable wash water system, and a lined, dyked containment area with a water collection

1.8 EQUIPMENT  
DECONTAMINATION  
(Cont'd)

- .4 (Cont'd)  
sump. Equipment decontamination pads shall be removed prior to conclusion of the project.
- .5 At minimum, perform following steps during equipment decontamination: mechanically remove packed dirt, grit, and debris by scraping and brushing without using steam or high-pressure water to reduce amount of water needed and to reduce amount of contaminated rinsate generated. Use high-pressure, low-volume, hot water or steam supplemented by detergents or solvents as appropriate and as approved by Departmental Representative. Pay particular attention to tire treads, equipment tracks, springs, joints, sprockets, and undercarriages. Scrub surfaces with long handle scrub brushes and cleaning agent. Rinse off and collect cleaning agent. Air dry equipment in Clean Zone before removing from site or travelling on clean areas. Perform assessment as directed by Departmental Representative to determine effectiveness of decontamination.
- .6 Each piece of equipment will be inspected by Departmental Representative after decontamination and prior to removal from site and/or travel on clean areas. Departmental Representative will have right to require additional decontamination to be completed if deemed necessary.
- .7 Take appropriate measures necessary to minimize drift of mist and spray during decontamination including provision of wind screens.
- .8 Collect decontamination wastewaters and sediments which accumulate on equipment decontamination pad. Transfer wastewaters to designated wastewater storage tank.
- .9 Transfer sediments to a designated area approved by the Departmental Representative.
- .10 Furnish and equip personnel engaged in equipment decontamination with protective

1.8 EQUIPMENT  
DECONTAMINATION  
(Cont'd)

- .10 (Cont'd)  
equipment including suitable disposable  
clothing, respiratory protection, and face  
shields.
- .11 Provide sufficient pumping equipment, of  
adequate pumping capacity and associated  
machinery and piping in good working condition  
for ordinary emergencies, including power  
outage, and competent workers for operation of  
pumping equipment. Maintain piping and  
connections in good condition and leak-free.

1.9 DRAINAGE

- .1 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.
- .2 Provide temporary drainage and pumping as  
necessary to keep excavations and site free  
from water.
- .3 Do not pump water containing suspended  
materials into waterways, sewer or drainage  
systems.
- .4 Control disposal or runoff of water  
containing suspended materials or other  
harmful substances in accordance with local  
authority requirements.

1.10 SURFACE WATER  
AND GROUNDWATER  
QUALITY

- .1 Materials and equipment shall be operated and  
stored in a manner that prevents deleterious  
substances (e.g. petroleum products, silt,  
etc.) from entering water.
- .2 Impacted groundwater entering excavations  
shall be collected and disposed of at an MOE  
approved facility.

1.11 SITE CLEARING  
AND PLANT  
PROTECTION

- .1 Protect trees and plants on site and adjacent properties where indicated or as directed by the Departmental Representative.
- .2 Wrap in burlap, trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2000 mm.
- .3 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .4 Minimize clearing of vegetation to only those areas necessary for construction and operations.
- .5 Restrict tree removal to areas indicated or designated by Departmental Representative.
- .6 Minimize the removal of terrestrial habitat to the extent possible during clearing.

1.12 VEGETATION

- .1 Protect vegetation that does not have to be removed by fencing/delineating construction working and/or storage areas.
- .2 Operate construction machinery in a manner that minimizes damage to adjacent vegetation.

1.13 WORK ADJACENT  
TO WATERWAYS

- .1 Do not operate construction equipment in waterways.
- .2 Do not use waterway beds for borrow material without Departmental Representative's approval.
- .3 Do not dump excavated fill, waste material or debris in waterways.

- |  |    |   |
|--|----|---|
| 1.13 WORK ADJACENT<br>TO WATERWAYS<br>(Cont'd) | .4 | Design and construct temporary crossings to minimize erosion to waterways.  |
|  | .5 | Do not skid logs or construction materials across waterways.  |
|  | .6 | Avoid indicated spawning beds when constructing temporary crossings of waterways.   |
|  | .7 | Do not use water from waterways.  |
|  | .8 | Special care shall be exercised while working near water's edge including site-specific erosion and sediment control measures. Silt fences shall be used to minimize sediment transport as well as limited access to watercourses by site personnel.        |
| 1.14 POLLUTION<br>CONTROL                      | .1 | Maintain temporary erosion and pollution control features installed under this contract.  |
|  | .2 | Vehicles and equipment must be maintained in good working condition, equipped with emission controls as applicable to local authorities' emission requirements.   |
|  | .3 | Implement dust abatement measures, as required to control dust.   |
|  | .4 | Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area, by providing temporary enclosures.  |
|  | .5 | Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.   |
|  | .6 | Apply other mitigation measures, as applicable, as per "Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities". Prepared by Cheminfo Service Inc., Construction, and Demolition Multi-Stakeholder Working Group for |

1.14 POLLUTION .6 (Cont'd)  
CONTROL Environment Canada Transboundary Issues Branch  
(Cont'd) (2005).

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- .7 Spills of deleterious substances:  
.1 Immediately contain, limit spread and  
clean up in accordance with provincial  
regulatory requirements.  
.2 Report immediately to Ontario Spills  
Action Centre: 1-800-268-6060.  
.3 Further information on dangerous goods  
emergency cleanup and precautions including a  
list of companies performing this work can be  
obtained from the Transport Canada 24-hour  
number (613) 996-6666 collect.
- .8 Ensure hazardous substances (including fuel)  
are stored, handled and applied in a manner to  
prevent release to the environment.

- 1.15 NOISE CONTROL .1 All construction equipment shall be operated  
with exhaust systems in good repair to  
minimize noise.
- .2 Construction activities that could create  
excessive noise shall be restricted to  
daylight hours and adhere to the municipal  
noise by-law.
- .3 If work is to be undertaken outside the  
specified period in the local noise by-law,  
then approval for an exemption to the by-law  
shall be obtained by the contractor from the  
municipality.
- .4 Ensure that noise control devices (i.e.  
mufflers, silencers) on construction equipment  
are properly maintained.

- 1.16 NOTIFICATION .1 Departmental Representative will notify  
Contractor in writing of observed  
noncompliance with Federal, Provincial or  
Municipal environmental laws or regulations,
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- 1.16 NOTIFICATION (Cont'd)
- 
- .1 (Cont'd)  
permits, and other elements of Contractor's Environmental Protection plan.
  - .2 Contractor: after receipt of such notice, inform Departmental Representative of proposed corrective action and take such action for approval by Departmental Representative.
  - .3 Departmental Representative will 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.
- 1.17 SPECIES AT RISK
- 
- .1 Should a species or its critical habitat be encountered, measures are to be implemented to avoid destruction, injury or interference with the species, its residence and/or its habitat (e.g. through siting, timing of design changes). If the foregoing cannot be avoided the contractor shall cease work and contact the Departmental Representative for advice regarding mitigation measures.
  - .2 In the event that it is determined that the project likely may have unexpected adverse effects on Species at Risk (SAR), the contractor shall notify the Department Representative immediately.
- 1.18 MIGRATORY BIRDS/WILDLIFE HABITAT
- 
- .1 Disturbance and destruction of habitat should be timed outside of breeding season of mid-April to end of July.
  - .2 Ensure all works are in compliance with the Migratory Birds Convention Act.
  - .3 Restrict vehicle movements to construction areas and access roads and avoid harassment of animals.
-



- |                            |    |  |
|----------------------------|----|--|
| 1.19 FISH/ FISH<br>HABITAT | .1 | All materials and equipment used will be operated and stored in a manner that prevents any deleterious substances (e.g. petroleum products, silt, etc.) from entering water course.  |
| 1.20 CEAA<br>Requirements  | .1 | Implementation of mitigation measures contained within the 2012 Oshawa Harbour CEAA report are to be implemented during the work. The checklist entitled "Mitigation Measures to be Adhered to by the Proponent and the Contractor During Project Construction, Operation, Maintenance, or Decommissioning Activities", found within the 2012 CEAA report is to be completed and submitted by the Contractor to the Departmental Representative as part of the work. |

## PART 2 - PRODUCTS

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|--------------|----|-----------|
| 2.1 NOT USED | .1 | Not Used. |
|--------------|----|-----------|

## PART 3 - EXECUTION

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



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## PART 1 - GENERAL

1.1 WORK INCLUDED .1 This section gives supplementary requirements to those given in Section 01 35 43.

1.2 REFERENCES .1 Transportation and Dangerous Goods Act (1999).  
.2 Canadian Council of Ministers of the Environment (CCME) Documentation.

1.3 SUBMITTALS .1 Submittals: in accordance with Section 01 33 00.  
.2 Submit, prior to start of work, plan detailing management of hazardous wastes. Submit written documentation of weekly hazardous waste inspections on a monthly basis.  
.3 Submittals for Progress Meetings: make submittals at least 24 hours prior to scheduled progress meetings as follows:  
.1 Updated progress schedule detailing activities. Include review of progress with respect to previously established dates for starting and stopping various stages of Work, major problems and action taken, injury reports, equipment breakdown, and material removal.  
.2 Copies of air sampling results.  
.3 Copies of transport manifests, trip tickets, and disposal receipts for waste materials removed from work area.  
.4 Weekly copies of site entry and work area logbooks with information on worker and visitor access.  
.5 Weekly results of collected air sampling data, including compliance air monitoring results.

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|--|----|---|
| <u>1.3 SUBMITTALS<br/>(Cont'd)</u>       | .3 | Submittals for Progress Meetings:(Cont'd)<br>.6 Other information required by<br>Departmental Representative or relevant to<br>agenda for upcoming progress meeting.  |
| <u>1.4 REGULATORY<br/>REQUIREMENTS</u>   | .1 | Comply with federal, provincial, and local<br>anti-pollution laws, ordinances, codes, and<br>regulations when disposing of waste materials,<br>debris, and rubbish.   |
|  | .2 | Work to meet or exceed minimum requirements<br>established by federal, provincial, and local<br>laws and regulations which are applicable.<br>.1 Contractor: responsible for complying<br>with amendments as they become effective.   |
|  | .3 | In event that compliance exceeds scope of<br>work or conflicts with specific requirements<br>of contract notify Departmental Representative<br>immediately.   |
| <u>1.5 SEQUENCING AND<br/>SCHEDULING</u> | .1 | Do not commence Work involving contact with<br>potentially contaminated materials until<br>decontamination facilities are operational and<br>approved by Departmental Representative.   |
| <u>1.6 SPILLS<br/>MANAGEMENT</u>         | .1 | A spills management and emergency response<br>plan will be developed and implemented. All<br>workers should be fully aware of the spill<br>prevention and response procedures including<br>notification of the Transfer Canada and MOE<br>Spills Action Centre, 1-800-268-6060. |
|  | .2 | Spill kits will be kept on site during all<br>project phases.   |
-

1.7 DUST AND  
PARTICULATE CONTROL

- .1 Execute Work by methods to minimize raising dust from construction operations.
  - .2 Implement and maintain dust and particulate control measures immediately during construction and in accordance with Province of Ontario regulations.
  - .3 Provide positive means to prevent airborne dust from dispersing into atmosphere. Use potable water for water misting system for dust and particulate control.
  - .4 Use chemical means for water misting system for dust and particulate control only with Departmental Representative's prior written approval.
  - .5 As minimum, use appropriate covers on trucks hauling fine or dusty material. Use watertight vehicles to haul wet materials.
  - .6 Prevent dust from spreading to adjacent property sites.
  - .7 Departmental Representative will stop work at any time when Contractor's control of dusts and particulates is inadequate for wind conditions present at site, or when air quality monitoring indicates that release of fugitive dusts and particulates into atmosphere equals or exceeds specified levels.
  - .8 If Contractor's dust and particulate control is not sufficient for controlling dusts and particulates into atmosphere, stop work. Contractor must discuss with Departmental Representative procedures that Contractor proposes to resolve problem. Make necessary changes to operations prior to resuming excavation, handling, processing, or other work that may cause release of dusts or particulates.
-

- 1.8 WATER CONTROL
- .1 Protect site from puddling or running water.
  - .2 Prevent surface water runoff from leaving work areas.
  - .3 Do not discharge decontaminated water, or surface water runoff, or groundwater which may have come in contact with potentially contaminated material, off site or to municipal sewers.
  - .4 Prevent precipitation from infiltrating or from directly running off stockpiled materials. Cover stockpiled materials with an impermeable liner during periods of work stoppage including at end of each working day and as directed by Departmental Representative.
  - .5 Direct surface waters that have not contacted potentially contaminated materials to existing surface drainage systems.
  - .6 Dispose of water in manner not injurious to public health or safety, to property, or to any part of Work completed or under construction.
  - .7 Provide, operate, and maintain necessary equipment appropriately sized to keep excavations, staging pads, and other work areas free from water.
  - .8 Contain water from stockpiled waste materials. Transfer potentially contaminated surface waters to wastewater storage tanks separate from wastewater from Personnel Hygiene/Decontamination Facility.
  - .9 Have on hand sufficient pumping equipment, machinery, and tankage in good working condition for ordinary emergencies, including power outage, and competent workers for operation of pumping equipment.
-

- 1.9     PROGRESS  
CLEANING
- .1     Maintain cleanliness of Work and surrounding site to comply with federal, provincial, and local fire and safety laws, ordinances, codes, and regulations.
  - .2     Co-ordinate cleaning operations with disposal operations to prevent accumulation of dust, dirt, debris, rubbish, and waste materials.

- 1.10   REMOVAL AND  
DISPOSAL
- .1     Remove surplus materials and temporary facilities from site.
  - .2     Dispose of non-contaminated waste materials, litter, debris, and rubbish off site.
  - .3     Do not burn or bury rubbish and waste materials on site.
  - .4     Do not dispose of volatile or hazardous wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
  - .5     Do not discharge wastes into streams or waterways.
  - .6     Dispose of following materials at appropriate off-site facility identified by Contractor and approved by Departmental Representative:
    - .1     Debris including excess construction material.
    - .2     Non-contaminated litter and rubbish.
    - .3     Disposable PPE worn during final cleaning.
    - .4     Wastewater removed from wastewater storage tank.
    - .5     Wastewater generated from final decontamination operations including wastewater storage tank cleaning.
    - .6     Lumber from decontamination pads.
  - .7     Impacted water sample and analysis.
    - .1     Contractor will perform sampling and analysis of stored wastewater for disposal purposes prior to removal from site.
    - .2     Results of analyses will determine appropriate methods of disposal.
-

1.10 REMOVAL AND DISPOSAL

(Cont'd)

- .7 (Cont'd)
- .3 Upon receipt of analytical results, transfer tank contents without spills or release, as directed by the Departmental Representative, to liquid waste tankers or otherwise as directed by Departmental Representative.
- .4 Following completion of tank complying, decontaminate tank interior with steam or high-pressure water wash supplemented by detergent.
- .5 Dispose of tank decontamination water with tank contents.
- .8 Minimize generation of hazardous waste to maximum extent practicable. Take necessary precautions to avoid mixing clean and contaminated wastes.
- .9 Identify and evaluate recycling and reclamation options as alternatives to land disposal, such as:
- .1 Hazardous wastes recycled in manner constituting disposal;
- .2 Hazardous waste burned for energy recovery;
- .3 Lead-acid battery recycling;
- .4 Hazardous wastes with economically recoverable precious metals.

1.11 RECORD KEEPING

- .1 Maintain adequate records to support information provided to Departmental Representative regarding exception reports, annual reports, and biennial reports.
- .2 Maintain bills of lading for minimum of 375 days from date of shipment or longer period required by applicable law or regulation.



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## PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

## PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.



PART 1 - GENERAL

- |   |  |
|---|--|
| <u>1.1 SECTION<br/>INCLUDES</u>         | <ul style="list-style-type: none"><li>.1 Office and sheds.</li><li>.2 Parking.</li><li>.3 Sanitary facilities.</li></ul>   |
| <u>1.2 SUBMITTALS</u>                   | <ul style="list-style-type: none"><li>.1 Provide submittals in accordance with Section 01 33 00.</li></ul>   |
| <u>1.3 INSTALLATION<br/>AND REMOVAL</u> | <ul style="list-style-type: none"><li>.1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.</li><li>.2 Identify areas which have to be gravelled to prevent tracking of mud.</li><li>.3 Indicate use of supplemental or other staging area.</li><li>.4 Provide construction facilities in order to execute work expeditiously.</li><li>.5 Remove from site all such work after use.</li></ul> |
| <u>1.4 SITE<br/>STORAGE/LOADING</u>     | <ul style="list-style-type: none"><li>.1 Confine work and operations of employees to areas defined by Contract Documents. Do not unreasonably encumber premises with products.</li></ul>   |
| <u>1.5 CONSTRUCTION<br/>PARKING</u>     | <ul style="list-style-type: none"><li>.1 Parking will be permitted on site provided it does not disrupt performance of Work.</li><li>.2 Provide and maintain adequate access to project site.</li></ul>  |
-

1.5 CONSTRUCTION  
PARKING  
(Cont'd)

- .3 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractors' use of roads.
- .4 Clean construction runways and taxi areas where used by Contractor's equipment.

1.6 SECURITY

- .1 Pay for responsible security personnel to guard site and contents of site after working hours and during holidays.

1.7 OFFICES

- .1 Provide office heated to 22°C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table.
- .2 Provide a clearly marked and fully stocked first-aid case in a readily available location.
- .3 Subcontractors may provide their own offices as necessary. Direct location of these offices.

1.8 EQUIPMENT,  
TOOL AND MATERIALS  
STORAGE

- .1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.

1.9 SANITARY  
FACILITIES

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

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.



PART 1 - GENERAL

- |                                       |    |  |
|---------------------------------------|----|--|
| <u>1.1 SECTION INCLUDES</u>           | .1 | Barriers.  |
|                                       | .2 | Traffic Controls.  |
|                                       | .3 | Fire Routes.   |
| <u>1.2 INSTALLATION AND REMOVAL</u>   | .1 | Provide temporary controls in order to execute Work expeditiously.   |
|                                       | .2 | Remove from site all such work after use.  |
| <u>1.3 HOARDING</u>                   | .1 | Provide barriers around trees and plants designated to remain. Protect from damage by equipment and construction procedures.   |
|                                       | .2 | Erect temporary site enclosure using modular freestanding fencing: galvanized, minimum 1800 mm high, chain link or welded steel mesh, pipe rail. Provide two lockable truck entrance gates and at least one pedestrian door as directed and conforming to applicable traffic restrictions on adjacent streets. Equip gates with locks and keys. Maintain fence in good repair. |
| <u>1.4 GUARD RAILS AND BARRICADES</u> | .1 | Provide secure, rigid guard rails and barricades around deep excavations.  |
-

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.



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Region Project	EXTENSION	Page 1
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## PART 1 - GENERAL

1.1 MINIMUM STANDARDS	.1	Execute work to meet or exceed Ontario Water Resources Act, R.R.O. 1990, Regulation 203 - WELLS.
	.2	All work must be completed by a well technician licensed in the Province of Ontario.
1.2 MEASUREMENT PROCEDURES	.1	Measurement for Payment for supply and installation of monitoring well extensions shall be measured by each.
1.3 MONITORING WELL EXTENSION	.1	The extension of monitoring wells shall be according to the monitoring well extension detail presented in the Drawings.

## PART 2 - PRODUCTS

2.1 MATERIALS	.1	As indicated on drawings.
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## PART 3 - EXECUTION

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

1.1 SECTION  
INCLUDES

- .1 Methods for removal of existing broken asphalt and gravel.
- .2 Temporary removal and reinstallation of existing wooden steps and chain link fence.
- .3 Removal and disposal of chain link fence.
- .4 Disposal of removed asphalt and gravel.

1.2 MEASUREMENT  
PROCEDURES

- .1 Measurement for payment for removal of existing broken asphalt and gravel over work area (50 mm deep) shall be measured in square metres. Payment under this item shall include operations involved in removing pavement and gravels as indicated on drawings.
- .2 Measurement for payment for removal of additional broken asphalt and gravel beneath asphalt cap area (250 mm deep) shall be measured in square metres. Payment under this item shall include operations involved in removing pavement and gravels as indicated on drawings.
- .3 Measurement for payment for removal and reinstallation of chain link fence shall be measured by the linear metre.
- .4 Measurement for payment for removal and disposal of chain link fence shall be measured by the linear metre.
- .5 Measurement for payment for disposal of broken asphalt and gravel shall be by the weight of that material in tonnes, rounded to one decimal place.
- .6 Measurement for payment for disposal of broken asphalt and gravel shall only be made for those materials indicated for removal on

1.2 MEASUREMENT  
PROCEDURES  
(Cont'd)

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- .6 (Cont'd)  
the drawings and as otherwise directed by the  
Departmental Representative.
- .7 The material shall be weighed by means of  
weigh scales. Only loads certified by the  
Departmental Representative as being disposed  
of in an acceptable facility shall be included  
in measurement for payment.
- .8 Removal and reinstallation of wooden steps  
shall be measured by each.

1.3 WASTE  
MANAGEMENT AND  
DISPOSAL

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- .1 Separate waste materials for reuse and  
recycling where recycling options are  
available.
- .2 Divert unused asphalt materials from landfill  
to local facility approved by Departmental  
Representative.

PART 2 - PRODUCTS

2.1 STAMPED SURVEY  
PLANS

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- .1 Provide stamped survey plans from a licensed  
surveyor for the following:
    - .1 Area of broken asphalt and gravel  
removal (50 mm deep).
    - .2 Area of broken asphalt and gravel  
removal (250 mm deep).
  - .2 Plans shall also indicate elevations of the  
site after completion of asphalt and gravel  
removal. Elevations shall be provided on a  
10 m x 10 m grid.
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### PART 3 - EXECUTION

<u>3.1 PREPARATION</u>	.1	Prior to beginning removal operation, inspect and verify with Departmental Representative areas, depths and lines of broken asphalt and gravel to be removed.
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<u>3.2 PROTECTION</u>	.1	Protect existing pavement not designated for removal, buildings, fences and monitoring wells from damage. In event of damage, immediately replace or make repairs to approval of Departmental Representative at no additional cost.
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<u>3.3 REMOVAL AND DISPOSAL</u>	.1	Remove existing broken asphalt and gravel to lines and grades as indicated.
	.2	Prevent contamination of removed asphalt pavement by topsoil, underlying gravel or other materials.
	.3	Provide for suppression of dust generated by removal process.
	.4	Dispose of broken asphalt and gravel at an acceptable facility which is subject to the approval of the Departmental Representative.

<u>3.4 FINISH TOLERANCES</u>	.1	Finished surfaces in areas where asphalt pavement has been removed to be within +/-10 mm of grade specified but not uniformly high or low.
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3.5 WOODEN STEP  
REMOVAL AND  
REINSTALLATION

- .1 Carefully remove existing wooden steps indicated on drawings.
- .2 Reinstall wooden steps at completion of work.
- .3 In event of damage, immediately replace or make repairs to approval of Departmental Representative at no additional costs.

3.6 CHAIN LINK  
FENCE REMOVAL AND  
REINSTALLATION

- .1 Carefully remove chain link fence indicated on drawings.
- .2 Reinstall chain link fence at completion of work.
- .3 In event of damage, immediately replace or make repairs to approval of Departmental Representative at no additional cost.

3.7 CHAIN LINK  
FENCE REMOVAL AND  
DISPOSAL

- .1 Carefully remove chain link fence indicated on drawings.
- .2 Dispose of chain link fence.

PART 1 - GENERAL

- |                             |    |  |
|-----------------------------|----|--|
| <u>1.1 WORK INCLUDED</u>    | .1 | Placement and grading of imported granular A material.   |
|                             | .2 | Installation of silt fence and straw berms.  |
| <u>1.2 RELATED SECTIONS</u> | .1 | Section 01 35 29.06 - Health and Safety.   |
|                             | .2 | Section 01 33 00 - Submittal Procedures.   |
|                             | .3 | Section 02 41 13.14 - Asphalt Paving Removal.  |
| <u>1.3 REFERENCES</u>       | .1 | American Society for Testing and Materials International (ASTM)  |
|                             | .1 | ASTM D698-07e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft <sup>3</sup> ) (600kN-m/m <sup>3</sup> ). |
|                             | .2 | ASTM D751-06(2011) Standard Test Methods for Coated Fabrics.   |
|                             | .3 | ASTM D4355-07, Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc Type Apparatus.                              |
|                             | .4 | ASTM D4491-99a(2009), Standard Test Methods for Water Permeability of Geotextiles by Permittivity.   |
|                             | .5 | ASTM D4533-11, Standard Test Method for Trapezoid Tearing Strength of Geotextiles.   |
|                             | .6 | ASTM D4632-08, Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.  |
|                             | .7 | ASTM D4751-04, Standard Test Method for Determining Apparent Opening Size of a Geotextile.   |
|                             | .8 | ASTM D5034-09 Standard Test Method for Breaking Strength and Elongation of Textile Fabrics (grab test).  |
-

### 1.3 REFERENCES (Cont'd)

- .2 Ontario Provincial Standard Specifications (OPSS)/Ontario Ministry of Transportation
  - .1 OPSS 182, Nov. 2000, Ontario Provincial Standard Specification, General Specification for Environmental Protection for Construction in Waterbodies and on Waterbody Banks (Reissued 2010-11).
  - .2 OPSS 577, Nov. 2006, Ontario Provincial Standard Specifications, Construction Specification for Temporary Erosion and Sediment Control Measures.
  - .3 OPSS 1004 November 2006, Ontario Provincial Standard Specification, Material Specification for Aggregates - Miscellaneous.
  - .4 OPSS 1010 April 2004, Ontario Provincial Standard Specification, Material Specification for Aggregates - Base, Subbase, Select Subgrade, and Backfill Material.
- .3 U.S. Environmental Protection Agency (EPA)/ Office of Water
  - .1 EPA 833-R-06-004, May 2007, Developing Your Stormwater Pollution Prevention Plan - A Guide for Construction Sites.
- .4 Canadian Council of Ministers of the Environment (CCME).
  - .1 PN 1340 Guidelines for Compost Quality (2005).

### 1.4 QUALITY ASSURANCE/REGULATORY REQUIREMENTS

- .1 Shore and brace excavations, protect slopes and banks and perform work in accordance with Provincial and Municipal regulations whichever is more stringent.
- .2 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 29.06.

### 1.5 EXISTING CONDITIONS

- .1 Examine soil report included in Appendix A, titled Detailed Site-Specific Risk Assessment and Remedial Options Analysis, West Wharf South - Oshawa Harbour, Ontario (DFRP #67590)



1.5 EXISTING CONDITIONS (Cont'd)	.1	(Cont'd) R.032459.003, dated November 2010 by Genivar Consultants LP.
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1.6 MEASUREMENT PROCEDURES	.1	Measurement for Payment for grading and compaction of subgrade to 98% Standard Proctor Density shall be measured in square metres.
	.2	Measurement for Payment for supply and placement of geotextile fabric on subgrade shall be measured in square metres of area covered.
	.3	Measurement for payment of supply, placement and compaction of granular A material shall be by the weight of that material in tonnes, rounded to one decimal place.
	.4	Granular A shall be weighed by means of weigh scales. Only loads certified by the Department Representative as being placed in the works at the required locations shall be included in measurement for payment.

## PART 2 - PRODUCTS

2.1 MATERIALS	.1	Granular material: to Ontario Provincial Specification 1010 for: .1 Granular A.
	.2	Geotextile Fabric (placed on subgrade and used for silt fence): .1 Geotextile Fabric. .1 Synthetic fibre: rot-proof, unaffected by action of oil or salt water and not subject to attack by insects or rodents. .2 Fabric: non-woven construction supplied in rolls of minimum 3800 mm width, 130,000 mm length, minimum thickness of 0.5 mm and minimum weight of 160 g/m <sup>2</sup> .

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- |                             |             |   |
|-----------------------------|-------------|---|
| 2.1 MATERIALS<br>(Cont'd)   | .2 (Cont'd) |   |
|                             | .1 (Cont'd) |   |
|                             | .3          | Seams: sewn or overlapped in accordance with manufacturer's recommendations.  |
|                             | .4          | Physical properties:  |
|                             | .1          | Breaking load and elongation: to ASTM D5034-09 Grab Test Method 25 mm square jaws, constant rate of travel 300 mm per minute.   |
|                             | .2          | Stronger principal direction, 800 N.  |
|                             | .3          | Elongation minimum 22 percent.  |
|                             | .4          | Bursting strength: to ASTM D571, using diaphragm bursting tester 1500N.   |
|                             | .5          | Permeability: 22 x 10.  |
|                             | .2          | Stakes (for silt fence):  |
|                             | .1          | Sharpened wood, approximately 50mm square, protruding below bottom of geotextile to allow minimum 600 mm embedment; post spacing 2300 mm maximum.                           |
| 2.2 STAMPED SURVEY<br>PLANS | .1          | Provide stamped survey plans from a licensed surveyor for:  |
|                             | .1          | Area of grading and compaction of subgrade to 98% Standard Proctor Density.   |
|                             | .2          | Area of geotextile on subgrade.   |
| 2.3 AS-BUILT SURVEY<br>PLAN | .1          | Provide stamped as-built survey plan from a licensed surveyor of completed earthworks. As-built survey shall provide finished grades for entire site on a 10 m x 10 m grid. |
-

### PART 3 - EXECUTION

- |  |         |  |
|--|---------|--|
| 3.1 TEMPORARY<br>EROSION AND<br>SEDIMENT CONTROL | <u></u> |  |
|  | .1      | Utilize geotextile fabric for silt fence.  |
|  | .2      | Install silt fence around trees to be protected as indicated on plans.   |
|  | .3      | Provide erosion and sediment control plan that identifies type and location of erosion and sediment controls to be provided, and, at a minimum, meets the requirements of OPSS 182 Nov. 2000 and OPSS 577 Nov. 2006 "Construction Specifications for Temporary Erosion and Sediment Control Measures" and EPA 833-R-06-004 or requirements of authorities having jurisdiction, whichever is more stringent. 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. |
|  | .4      | 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 erosion and sediment control plan.  |
|  | .5      | Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.  |
|  | .6      | Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.  |
| 3.2 PREPARATION<br>PROTECTION                    | <u></u> |  |
|  | .1      | Protect excavations from freezing.   |
|  | .2      | Keep excavations clean, free of standing water, and loose soil.  |
-

- 3.2 PREPARATION PROTECTION (Cont'd)
- .3 Where soil is subject to significant volume change due to change in moisture content, cover and protect to Departmental Representative approval.
  - .4 Protect natural and man-made features required to remain undisturbed. Unless otherwise indicated or located in an area to be occupied by new construction, protect existing trees from damage.
  - .5 Protect buried services that are required to remain undisturbed.
- 3.3 EQUIPMENT
- .1 Trucks:
    - .1 Clean meticulously between loads of potentially contaminated soil and clean fill.
    - .2 Clean meticulously at end of Work.
    - .3 Cover truck bodies with tarpaulins during transportation.
- 3.4 GRADING
- .1 Finished grade to be as indicated on drawings. Establish natural contours and eliminate uneven areas and low spots, ensuring positive drainage.
  - .2 Remove existing broken asphalt and gravel as indicated.
  - .3 Fill and grade site to achieve finished subgrades as indicated and compact to 98% Standard Proctor Density (to ASTM D698).
  - .4 In areas where compaction cannot be achieved due to in-situ subgrade conditions remove subgrade material and replace with granular A materials as directed by Departmental Representative.
  - .5 Place geotextile fabric on subgrade and provide overlap in accordance with manufacturer's specifications.
-

- |                         |    |   |
|-------------------------|----|---|
| 3.4 GRADING<br>(Cont'd) | .6 | Place and compact granular A in 150 mm lifts. Compacted to 98% Standard Proctor Density (to ASTM D698). |
|-------------------------|----|---|
- 
- |                              |    |   |
|------------------------------|----|---|
| 3.5 FIELD QUALITY<br>CONTROL | .1 | Testing of materials and compaction of fill will be carried out by testing laboratory designated by Departmental Representative.  |
|                              | .2 | Not later than one week before backfilling or filling, provide to designated testing agency, samples of backfill as described in PART 1 - SUBMITTALS.                       |
|                              | .3 | Do not begin filling operations until material has been approved for use by Departmental Representative.  |
|                              | .4 | Not later than 48 hours before filling with approved material, notify Departmental Representative so that compaction tests can be carried out by designated testing agency. |
- 
- |              |    |  |
|--------------|----|--|
| 3.6 CLEANING | .1 | On completion and verification of performance of work, remove surplus materials, excess materials, rubbish, tools and equipment. |
|--------------|----|--|



## PART 1 - GENERAL

- 1.1 REFERENCES
- .1 American Society for Testing and Materials International, (ASTM)
    - .1 ASTM D698-07e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)).
  - .2 Ontario Provincial Standard Specifications (OPSS)
    - .1 OPSS 310-November 2012, Construction Specification for Hot Mix Asphalt.
    - .2 OPSS 1103-November 2012, Material Specification for Emulsified Asphalt.
    - .3 OPSS 1150-November 2010, Material Specification for Hot Mix Asphalt.
- 1.2 SAMPLES
- .1 Submit samples in accordance with Section 01 33 00.
  - .2 Submit to Departmental Representative, samples of material for sieve analysis at least 4 weeks before beginning Work.
  - .3 Submit samples of following materials proposed for use at least 4 weeks prior to beginning work.
    - .1 One 5 L container of asphalt cement.
    - .2 90 kg of hydrated lime.
- 1.3 MEASUREMENT PROCEDURES
- .1 Measurement for payment for asphalt concrete paving shall be measured in square meters of surface actually applied to the half width of the tapered edges, including application of tack coat along concrete asphalt interface, for the following:
    - .1 40 mm thick HL4.
    - .2 60 mm thick HL8.
-

<u>1.3 MEASUREMENT PROCEDURES (Cont'd)</u>	.2	Tack coat is considered included in the 60 mm thick HL8 and 40 mm thick HL4 and will not be measured separately for payment.
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<u>1.4 WASTE MANAGEMENT AND DISPOSAL</u>	.1	Remove from site and dispose of all packaging materials at appropriate recycling facilities.
	.2	Divert unused asphalt from landfill to facility capable of recycling materials.

## PART 2 - PRODUCTS

<u>2.1 MATERIALS</u>	.1	Asphalt concrete: to OPSS 1150.
	.2	Tack coat: SS-1 to OPSS 1103.

<u>2.2 STAMPED SURVEY PLANS</u>	.1	Provide stamped survey plans from a licensed surveyor for the following: .1 Area of 40 mm thick HL4 asphalt measured to the half width of the tapered edges. .2 Area of 60 mm thick HL8 asphalt measured to the half width of the tapered edges.
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<u>2.3 AS-BUILT SURVEY PLAN</u>	.1	Provide stamped as-built survey plan from a licensed surveyor of completed asphalt. As-built survey shall provide finished grades of asphalt on a 10 m x 10 m grid.
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PART 3 - EXECUTION

3.1 FINE GRADING .1 Fine grade gravel surface to within 10 mm of elevations and cross sections indicated. Add or remove gravel as required. Compact to 100% Standard Proctor Density in accordance with ASTM D698 or as directed by Departmental Representative.

3.2 PAVEMENT THICKNESS .1 Pavements:  
.1 Base course: 60 mm HL8.  
.2 Top course: 40 mm HL4.

3.3 PAVEMENT CONSTRUCTION .1 Construction of asphalt concrete: OPSS 310.

3.4 TACK COAT .1 Application of tack coat: OPSS 310.



PART 1 - GENERAL

- |                                   |    |   |
|-----------------------------------|----|---|
| <u>1.1 REFERENCES</u>             | .1 | OPSS 506 November 2011, Construction Specification for Dust Suppressants.                                   |
| <u>1.2 MEASUREMENT PROCEDURES</u> | .1 | Work of this section shall fall under the Lump Sum arrangement, and not be measured separately for payment. |

PART 2 - PRODUCTS

- |                      |    |   |
|----------------------|----|---|
| <u>2.1 MATERIALS</u> | .1 | Water: to OPSS 506 to Departmental Representative's approval. |
|----------------------|----|---|

PART 3 - EXECUTION

- |                        |    |  |
|------------------------|----|--|
| <u>3.1 APPLICATION</u> | .1 | Apply water with equipment to OPSS 506 approved by Departmental Representative when directed by Departmental Representative. |
|------------------------|----|--|

