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Number R.072879.001		2014-09-09

Project Title Thunder Bay, Ontario

Thunder Bay International Airport,
Firefighting Training Area

SPECIFICATIONS FOR DUMPSITE DEBRIS REMOVAL

Project Number R.072879.001

Project Date 2014-09-09

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Appendix A - Draft Technical Memorandum - Thunder Bay International Airport Firefighting Training Area (FTA) Description of Waste and Debris for Removal at Abandoned Dump Site

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Drawings

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C-2: Site Plan
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PART 1 - GENERAL

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| <u>1.1 PRECEDENCE</u> | .1 | For Federal Government projects, Division 01 Sections take precedence over technical specification sections in other Divisions of this Project Manual. |
| <u>1.2 RELATED SECTIONS</u> | .1 | Section 01 11 01: General Instructions Minor Works. |
| | .2 | Section 01 35 29: Health and Safety Requirements |
| <u>1.3 WORK COVERED BY CONTRACT DOCUMENTS</u> | .1 | Work of this Contract is for the excavation and removal of soil and waste debris located at the Thunder Bay International Airport firefighting training area and further identified as the abandoned dump site (see Golder Technical Memorandum - Appendix A). The work comprises clearing of trees and underbrush to gain access to the dump site, construction of a gate for the existing fenced area and grading or construction of an access road beyond the gate. Included in this work is the off-site disposal of non-hazardous and hazardous waste, backfilling, slope stabilization and erosion control, and reinstatement of the excavated area. |
| <u>1.4 COST BREAKDOWN</u> | .1 | Within 48 hours of notification of acceptance of bid furnish a cost breakdown by Section aggregating contract price. |
| | .2 | Show separately cost of equipment purchased exempt from Ontario Retail Sales Tax under your Ontario Sales Tax license number. |
| | .3 | Within 48 hours of acceptance of bid submit a list of subcontractors. |

1.5 CONTRACTOR USE
OF PREMISES

- .1 Contractor shall limit use of premises for Work, for storage, and for access, to allow;
 - .1 Training activities to take place in the current firefighting training area (FTA) at the Thunder Bay International Airport.
- .2 Obtain and pay for use of additional storage or work areas if required, for operations under this Contract.
- .3 Coordinate use of premises under direction of the Departmental Representative and the Thunder Bay International Airport Authority.
- .4 Contractor shall adhere to the Airport Security Requirements and to all security and safety precautions communicated by the Thunder Bay International Airport Authority.
 - .1 The road used to access the fire training area and the area of the dumpsite (northwest of the fenced area) are not considered "Airport Restricted Areas".
- .5 All contractor staff accessing the site must attend a site orientation with the Thunder Bay International Airport Authority.

1.6 OWNER/OPERATOR
OCCUPANCY

- .1 Owner is Transport Canada and the current operator is the Thunder Bay International Airport Authority.
- .2 Owner/operator may occupy the current firefighting training area during the construction period for execution of normal operations.
- .3 Cooperate with the current operator (Thunder Bay International Airport Authority) in scheduling operations to minimize conflict and to facilitate operator usage.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 - EXECUTION

3.1 CANADIAN
ENVIRONMENTAL
ASSESSMENT ACT

- .1 While executing the project, the Contractor must implement the mitigation measures identified in the CEAA (Canadian Environmental Assessment Act) Environmental Assessment (EA) for this project (see Appendix B).
- .2 A copy of the full CEAA EA is available for review at the Departmental Representative's office located at 4900 Yonge Street, 11th Floor, Toronto, Ontario, M2N 6A6.
- .3 The Contractor shall receive an electronic copy of the EA upon contract award.

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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, Ontario Building Code 2012 and any other code of 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 Federal Fire Commissioner, No. 301, Standard for Construction Operations, and No. 302, Standard for Welding and Cutting, June 1982.
 - .4 Treasury Board of Canada Secretariat, Fire Protection Standard, April 1, 2010.
 - .5 Observe and enforce construction safety measures required by National Building Code 2010, Part 8 Safety Measures at Construction and Demolition Sites, Occupational Health and Safety Act and Regulations for Construction Projects, Revised Statutes of Ontario 1990, Chapter O.1 as amended, O. Reg. 213/91 as amended by O. Reg. 631/94, O. Reg. 143/99, O. Reg. 571/99, O. Reg. 145/00, O. Reg. 527/00, R.R.O. 1990, Reg. 834, O. Reg. 278/05 (Asbestos), Workplace Safety and Insurance Board and municipal statutes and authorities.
 - .6 Environmental Protection Act, O. Reg. 102/94, O. Reg. 103/94, O. Reg. 153/04 as amended and O. Reg. 347.

1.2 AUTHORITIES
HAVING JURISDICTION

- .1 The Federal Fire Commissioner is the sole authority having jurisdiction over this project with regards fire standards.
- .2 Fire Testing requirements are for ULC or WHI listed and labelled products.
- .3 Substitution of ULI or other Fire testing reports for required ULC and WHI testing is acceptable to the Departmental Representative only if the issuing organization is accredited and listed in the "Directory of Accredited Certification Organizations (CAN-P-1505C), 1993" published by the Standards Council of Canada, 1-800-267-8220. Testing shall be to the Canadian standards and the tested products shall bear the appropriate label approved by the Federal Fire Commissioner.

- .4 Submit 3 copies of test reports under the letterhead of the accredited organization to the Departmental Representative.

1.3 ROAD
LOAD RESTRICTIONS

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- .1 Within the City of Thunder Bay, the year round maximum load restrictions are posted.
- .2 Comply with posted restrictions. Acquire and submit Departmental Representative copies of all necessary permits.

1.4 TAXES

- .1 Pay applicable Federal, Provincial and Municipal taxes.
- .2 The Contractor waives in favour of Her Majesty his right to the refund of the Federal Sales Tax paid by the Contractor on the articles and materials purchased for use in the construction of the work and undertakes, upon request by the Departmental Representative, to execute such further documents as may be necessary to fully effect the provisions of this paragraph and to enable Her Majesty to claim and recover such refund.

1.5 FEES, PERMITS,
CERTIFICATES AND
LETTERS

- .1 Provide authorities having jurisdiction with information requested.
- .2 Pay fees and obtain certificates, permits and letters required.
- .3 Furnish certificates, permits and letters when requested.

1.6 EXAMINATION

- .1 Examine existing conditions and determine conditions affecting work.
- .2 Notify Departmental Representative in writing of any discrepancies between contract documents and site conditions within 48 hours and prior to doing any work on the affected work item.

1.7 DOCUMENTS

- .1 Keep one copy of contract documents and drawings on the site.

1.8 ELECTRONIC
SUBMITTALS

- .1 Submit number of hard copies specified for each type and format of submittal and also submit in electronic format as pdf files. Forward pdf, NMSEdit Professional spp, MS Word, MS Excel, and Autocad dwg files; on USB compatible with PWGSC encryption requirements or through email or alternate electronic file sharing service such as ftp, as directed by Departmental Representative. Pdf files will be unlocked and editable by the Departmental Representative.

1.9 CONTRACTOR'S
AS-BUILT DRAWINGS
AND SPECIFICATIONS

- .1 As work progresses, neatly record significant deviations from the Contract drawings and specifications 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 each title and number of drawing 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, schedules and specifications for as-built drawing and specification purposes.
 - .1 Drawings are in Autocad.
 - .2 Specifications are in Adobe PDF format.
 - .3 Amendments and addenda are in MS Word.
- .4 Record following significant deviations:
 - .1 Field changes of dimension.
- .5 Turn one set, paper copy and electronic copy, of AS-BUILT drawings and specifications over to Departmental Representative on completion of work. Submit pdf files on USB compatible with PWGSC encryption requirements, through email or alternate electronic file sharing service such as ftp.
- .6 If project is completed without significant deviations from Contract drawings and specifications submit to Departmental Representative one set of drawings and specifications marked "AS-BUILT".

1.10 CONSTRUCTION
PHOTOGRAPHS

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

1.11 DESIGN DATA,
TEST REPORTS,
CERTIFICATES,
MANUFACTURER'S
INSTRUCTIONS,
MANUFACTURER'S
FIELD REPORTS

- .1 Prior to submission check and certify as correct each submission. Issue to Departmental Representative each submission at least 14 days before reviewed submission will be needed.
- .2 Submit 3 white print copies of each item requested.
- .3 For products bearing the 'Ecologo' of the Environmental Choice Program, Environment Canada, Canadian Environmental Protection Act, Environmental Choice Product Guidelines:
 - .1 Submit two copies of the licensing criteria statements and the verification of compliance with Sections 3(a) and 3(b) of the ECP to the Departmental Representative. For adhesives, paints, primers and sealants, cleaners and degreasers, floor polishes, water borne surface coatings, indicate VOC in g/l.
 - .2 Alternatively, material in original containers bearing the 'Ecologo' or products bearing the 'Ecologo' will satisfy this requirement.
- .4 Responsibility for errors, omissions or deviations from requirements of Contract Documents is not relieved by Departmental Representative's review of submittals.

1.12 ADDITIONAL
DRAWINGS

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

1.13 PROTECTION

- .1 Protect existing work from damage.
- .2 Replace damaged existing work with material and finish to match original.
- .3 Ensure the protection of all existing monitoring wells at the site, including wells installed with flush mount and stick-up protective casings.
- .4 Protect existing trees and plants on site that are not required to be cleared to allow for access to the dumpsite and for removal of waste materials.

1.14 EXISTING SERVICES

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

1.15 TEMPORARY FACILITIES AND SERVICES

- .1 Provide and maintain temporary facilities and services required to carry out work.
- .2 Remove temporary facilities and services on completion of work.

1.16 VEHICULAR ACCESS AND PARKING

- .1 Coordinate access to the site with the Thunder Bay International Airport Authority prior to work and confirm specific access and usage restrictions.
- .2 Provide and maintain access roads, ramps etc, as may be required for access to work.
- .3 Arrange access through fenced area and keep fence closed and secured at all times to prevent movement of wildlife from the forested portion of the site to the active portions of the airport.
- .4 Provide necessary materials and construct required structures to access the forested portion of the site and abandoned dumpsite, via the fence. No gate access is currently available.
- .5 Maintenance and Use:
 - 1. Immediately scrape up debris or materials which may be hazardous as determined by the Departmental Representative: transport and place into designated area approved by the Departmental Representative.
 - 2. Vehicles/equipment shall be in good

working order and not be leaking any fuel or fluids.

3. During site activities, designated fuelling area(s) will be established.

4. Refueling of vehicles and equipment shall not be conducted near watercourses.

1.17 METRIC SIZED MATERIALS

- .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. 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.

1.18 CO-ORDINATION AND CO-OPERATION

- .1 Site may be occupied during execution of work.
- .2 Work area will not be occupied during execution of work.
- .3 Execute work with minimum disturbance to public and normal use of site.

1.19 ALTERATIONS TO EXISTING SITE

- .1 Modifications of existing structures will be required:
 1. To provide access through the fenced area (no gate available)

- .2 Temporary roads, ramps and brush and tree cutting may be required to access portions of the work area, see section 01 35 43.
- .3 Improvements to the work area will include grading, filling, planting, temporary roads, erosion control and other measures appropriate to specific conditions, see section 31 00 00.01.

1.20 INSPECTION AND TESTING

- .1 When initial tests and inspections reveal work not to contract requirements, 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 assess the work completed by the Contractor.

1.21 SCHEDULING

- .1 On award of contract submit bar chart construction schedule for work, indicating anticipated progress stages within time of completion. When schedule has been reviewed by the Departmental Representative take necessary measures to complete work within scheduled time. Do not change schedule without notifying Departmental Representative.
- .2 Ensure detailed construction schedule includes the minimum milestones and activities as follows:
 - 1. Notice of Award
 - 2. Permits
 - 3. Mobilization
 - 4. Clearing and excavation
 - 5. Waste removal and disposal
 - 6. Soil Removal and Disposal
 - 7. Backfilling and slope stabilization measures
 - 8. Demobilization

1.22 CLEANING

- .1 Maintain project free of accumulated waste and rubbish.
- .2 Final cleaning:
 - .1 Remove temporary protection.
 - .2 Restore fence to original condition.

1.23 DESIGNATED
SUBSTANCES

- .1 If during work existing designated substances are discovered, stop work and immediately notify Departmental Representative.

1.24 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 labeling and the provision of material safety data sheets acceptable to HRSDC - Labour Program.

1.25 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.

1.26 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>.

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 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 O. Reg. 490/09, Designated Substances.
 - .3 Workplace Safety and Insurance Act, 1997.
 - .4 Municipal statutes and authorities.
- .2 Treasury Board of Canada Secretariat (TBS):
 - .1 Treasury Board, Fire Protection Standard April 1, 2010
www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=17316§ion=text.

1.2 SUBMITTALS

- .1 Make submittals in accordance with Section 01 11 01.
- .2 Submit site-specific Health and Safety Plan: Within 5 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operations found in the work plan.
 - .3 Measures and controls to be implemented to address identified safety hazards and risks.
 - .4 Site and operator-specific hazards, controls and procedures relating to working at an active airport communicated by the Thunder Bay International Airport Authority.
 - .4 Provide a Fire Safety Plan, specific to the work location, in accordance with the applicable standards to commencement of work. The plan shall be coordinated with, and integrated into, the existing Thunder Bay International Airport Authority's Emergency Procedures and Evacuation Plan in place at the site.
 - .5 Contractor's and Sub-contractors' Safety Communication Plan.
 - .6 Contingency and Emergency Response Plan addressing standard operating procedures

specific to the project site to be implemented during emergency situations. Coordinate plan with existing Thunder Bay International Airport Authority Emergency Response requirements, and procedures provided by Departmental Representative.

- .3 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 3 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 3 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, weekly.
- .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.
- .10 Submit Material Safety Data Sheets (MSDS).
- .11 Submit Workplace Safety and Insurance Board (WSIB)- Experience Rating Report.

1.3 FILING OF NOTICE

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

1.4 WORK PERMIT

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

<u>1.5 SAFETY ASSESSMENT</u>	.1	Perform site specific safety hazard assessment related to project.
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<u>1.6 MEETINGS</u>	.1	Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.
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<u>1.7 REGULATORY 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.

<u>1.8 PROJECT/SITE CONDITIONS</u>	.1	Work at site will involve contact with: 1. Non-hazardous soil mixed with waste debris within the abandoned dumpsite as identified in Appendix A. 2. Metal drums potentially containing fuel, oils, lubricants, paints and fire extinguishing agents as described in Appendix A.
	.2	Uneven terrain.

<u>1.9 GENERAL REQUIREMENTS</u>	.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.

<u>1.10 COMPLIANCE REQUIREMENTS</u>	.1	Comply with Ontario Occupational Health and Safety Act, R.S.O. 1990 Chapter 0.1, as amended.
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<u>1.11 RESPONSIBILITY</u>	.1	Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
	.2	Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.
	.3	Where applicable the Contractor shall be designated "Constructor", as defined by Occupational Health and Safety Act for the Province of Ontario.

<u>1.12 UNFORESEEN HAZARDS</u>	.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.

<u>1.13 HEALTH AND SAFETY CO-ORDINATOR</u>	.1	Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must: <ul style="list-style-type: none"> .1 Have site-related working experience specific to activities associated with the excavation and removal of non-hazardous soil, solid and liquid hazardous waste, and of debris/waste materials. .2 Have working knowledge of occupational safety and health regulations. .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
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- .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
- .5 Be on site during execution of Work and report directly to and be under direction of the site supervisor.

1.14 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province of Ontario, and in consultation with Departmental Representative.
 - .1 Contractor's Safety Policy.
 - .2 Constructor's Name.
 - .3 Notice of Project.
 - .4 Name, trade, and employer of Health and Safety Representative or Joint Health and Safety Committee members (if applicable).
 - .5 Ministry of Labour Orders and reports.
 - .6 Occupational Health and Safety Act and Regulations for Construction Projects for Province of Ontario.
 - .7 Address and phone number of nearest Ministry of Labour office.
 - .8 Material Safety Data Sheets.
 - .9 Written Emergency Response Plan.
 - .10 Site Specific Safety Plan.
 - .11 Valid certificate of first aider on duty.
 - .12 WSIB "In Case of Injury At Work" poster.
 - .13 Location of toilet and cleanup facilities.

1.15 CORRECTION OF NON-COMPLIANCE

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

1.16 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 the Health and Safety Coordinator or Competent Supervisor to stop or start Work when, at the Health and Safety Coordinator's or Competent Supervisor's discretion, it is necessary or advisable for reasons of health or safety. Departmental Representative may also stop Work for health and safety considerations.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not used.

----- END -----

PART 1 - GENERAL

1.1 DEFINITIONS

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

1.2 SUBMITTALS

- .1 Submittals: in accordance with Section 01 11 01.
- .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 the work program.
- .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 and qualifications of persons responsible for manifesting hazardous waste, if identified, to be removed from site.
 - .3 Names and qualifications of persons responsible for training site personnel.
 - .4 Descriptions of environmental protection personnel training program.
 - .5 Erosion and sediment control plan which identifies type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and

regulations.

.6 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 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.

.10 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.

.11 Hazardous solid and liquid waste disposal plan identifying methods and locations for disposal.

.12 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, do not become air borne and travel off project site.

.13 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.

.14 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, if required.

1.3 FIRES

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

1.4 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 water ways.
- .4 Separate and dispose of accumulated waste materials off-site in accordance with R.R.O. 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.
 - .3 Disposable PPE worn during final cleaning.
 - .4 Water infiltrating excavations having evidence of contamination.
 - .5 Non-hazardous material.
 - .6 Hazardous material, including drums and pails containing fire extinguishing agents.
- .5 Pails and drums found to contain liquid or solids will be considered hazardous material. Empty drums will be considered non-hazardous material.
- .6 Appropriate procedures shall be implemented for handling, temporary storage, transport and disposal of soil intermixed with waste during all phases of the project. Refer to Land Disposal Restrictions in O.Reg. 347 - General Waste Disposal under Ontario EPA and MOE Fact Sheet "Summary of Land Disposal Restrictions, Treatment and Notification Requirements for Waste Generators". Off-site disposal will be by licensed haulers to a MOE-approved disposal facility.
- .7 Dispose of all non-hazardous and hazardous waste in accordance with applicable provincial regulations.
- .8 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 the Departmental Representative.
- .9 Submit proof that all non-hazardous and hazardous waste materials and soil is being disposed of at appropriate licensed landfill sites or waste transfer sites. A copy of the disposal/waste transfer site's license and a letter verifying that said landfill site will accept the waste must be supplied to Departmental Representative prior to removal of waste from the demolition site.

1.5 VEHICULAR ACCESS AND PARKING

- .1 Maintenance and Use:
 - .1 Prevent contamination of access roads. Immediately scrape up debris or material on access roads which is suspected to be contaminated as determined by

Departmental Representative; transport and place into designated area approved by Departmental Representative. Clean access roads at least once per shift.

.2 Departmental Representative may collect soil samples for chemical analyses from traveling surfaces of constructed and existing access routes prior to, during, and upon completion of Work. Excavate and dispose of clean soil contaminated by Contractor's activities at no additional cost to Departmental Representative.

- .2 Vehicles/equipment shall be in good working order and not be leaking any fuel or fluids.
- .3 Restrict access of vehicles from creek banks to protect slope stability.
- .4 During construction designated fuelling area(s) will be established.
- .5 Refuelling of vehicles and equipment shall not be conducted within 30 meters of watercourses.
- .6 Traffic management measures (such as 'flag man') shall be implemented if required at site access points to direct traffic.

1.6 DRAINAGE

- .1 Provide erosion 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 allow water containing suspended materials to enter 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.
- .5 Do not direct water flow in a manner which would cause erosion to existing areas.

1.7 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.) as defined by the Fisheries Act from entering surface water.
- .2 Impacted groundwater entering excavations shall be collected and disposed of at an MOE-approved facility.

1.8 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 Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .3 Minimize stripping of topsoil and vegetation.
- .4 Restrict tree removal to areas indicated or designated by Departmental Representative.
- .5 Minimize clearing of vegetation to only those areas necessary for construction and operation.
- .6 Minimize the removal of terrestrial habitat to the extent possible during clearing.
- .7 Cleared vegetation and trees shall be processed (mulched or other) and removed from the site if contaminated. Clean mulch may be used as fill upon the direction of the Departmental Representative.

1.9 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.

1.10 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.
- .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 limit access to watercourses by site personnel.

1.11 POLLUTION 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 Control emissions from equipment and plant to local authorities' emission requirements.
- .5 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.
- .6 Ensure hazardous substances (including fuel) are stored, handled and applied in a manner to prevent release to the environment and in a legal manner in accordance with hazardous waste regulations.
- .7 Secure all materials at non-productive times (night and shut-down).
- .8 Vehicles shall be shut off when not in use. No vehicle idling on-site.
- .9 Store hazardous or toxic substances in a designated area.
- .10 Comply with requirements of WHMIS regarding use, handling, storage and disposal of hazardous materials; and regarding labelling and provision of MSDS acceptable to Labour Canada.

1.12 SPILLS OR
RELEASE OF
DELETERIOUS
SUBSTANCES

- .1 Immediately contain, limit spread and clean up in accordance with provincial regulatory requirements.
- .2 All workers shall be fully aware of the spill prevention and response procedures including notification of Departmental Representative.
- .3 The Ontario Ministry of Environment Spills Action Centre must be notified immediately by law at 1-800-268-6060.
- .4 The Departmental Representative shall be immediately informed of all spills that occur onsite.
- .5 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.
- .6 Spill kits will be kept on-site during all project phases.
- .7 Contractor shall take due care to ensure no deleterious materials including sediment-laden runoff leave the worksite, or enter any: surface water, storm water, or sanitary sewers at or near the worksite.
- .8 Equipment fuelling or lubricating shall occur in a designated area with proper controls to prevent the release of deleterious substances, and shall be conducted away from any surface water drains or collection points.
- .9 Any equipment remaining on site overnight shall have appropriately placed drip pans.
- .10 Protect the roadways from tracking of mud, soil, and debris throughout the work.
- .11 Prevent discharges containing asphalt, grout, concrete or other waste materials from reaching storm drains or the marine environment. This includes, but is not limited to:
 - .1 Minimizing the washing of sand or gravel from new asphalt, debris from drilling or cutting or other materials into storm drains and the marine environment by sweeping.
 - .2 Application of fog seals, tack coats or other coatings, if required, during periods when rainfall is unlikely to occur during application.
 - .3 Cleaning equipment off site.
 - .4 Protection of drainage structures with filter fences if required.

- .12 Concrete wash water or concrete from trucks shall not enter any surface water or storm water system. Concrete pour or grouting should not be performed if significant precipitation is expected within 72 hours. If concrete leachate is generated within 72 hours of concrete pouring or grouting, measures shall be taken to ensure the leachate does not enter the surface or storm water systems.

1.13 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.

1.14 HISTORICAL/ ARCHAEOLOGICAL CONTROL

- .1 Identify procedures to be followed if historical archaeological, cultural resources, biological resources and wetlands not previously known to be onsite or in area are discovered during construction.
- .2 Plan: include methods to assure protection of known or discovered resources and identify lines of communication between Contractor personnel and Departmental Representative.
- .3 If archaeological deposits are discovered during the project work shall stop immediately and the Departmental Representative shall immediately be notified.
- .4 Archaeologically significant material, if found on the property, remains the property of the Crown and shall not be removed from the site.
- .5 Management of the archaeological materials will be coordinated through Departmental Representative.

1.15 NOTIFICATION

- .1 Departmental Representative will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.
- .2 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.

1.16 SPECIES AT
RISK

- .1 Should a species at risk or its critical habitat be encountered, such as the monarch butterfly and milkweed and nectaring flowers and common nighthawk, 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 or design changes). If the foregoing cannot be avoided Contractor should cease work and contact 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.

1.17 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.

1.18 FISH/ FISH
HABITAT

- .1 All materials and equipment used will be operated and stored in a manner that prevents any deleterious substance (e.g., petroleum products, silt, etc.) as defined by the Fisheries Act from entering the surface water.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

----- END -----

PART 1 - GENERAL

1.1 WORK INCLUDED

- .1 Excavation and backfilling activities for the removal of soil, waste and debris located at the abandoned dumpsite (sloped area) at the former firefighting training area.
- .2 Removal and disposal of abandoned metal drums observed at locations beyond the abandoned dump site.
- .3 Temporary and final erosion control measures for the excavated sloped area.

1.2 REFERENCES

- .1 ASTM International
 - .1 ASTM D698-12, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft²) (600kN-m/m²).
 - .2 ASTM D2487-11, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
- .2 Ontario Provincial Standard Specifications (OPSS)/Ontario Ministry of Transportation
 - .1 OPSS 401 November 2010 (formerly 514), Ontario Provincial Standard Specification, Construction Specification for Trenching, Backfilling, and Compacting.
 - .2 OPSS 1004 November 2006, Ontario Provincial Standard Specification, Material Specification for Aggregates - Miscellaneous.
 - .3 OPSS 1010 April 2004, Ontario Provincial Standard Specification, Material Specification for Aggregates - Base, Subbase, Select Subgrade, and Backfill Material.
- .3 Ontario Ministry of the Environment (MOE), Ontario Regulation 153/04. Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 2011.
- .4 Canadian Council of Ministers of the Environment (CCME). Soil Quality Guidelines for the Protection of Environmental and Human Health.

1.3 ADMINISTRATIVE
REQUIREMENTS

- .1 Co-ordination: arrange with authority having jurisdiction for relocation of buried services that interfere with execution of work.
 - .1 Pay costs of relocating services.
 - .2 Before commencing work verify location of buried services on and adjacent to site.
 - .3 Arrange with appropriate authority for relocation of buried services that interfere with execution of work: pay costs of relocating services.
 - .4 Remove obsolete buried services within 2 m of foundations: cap cut-offs.
- .2 Examine Golder Technical Memorandum (Appendix A) and drawings.

1.4 ACTION AND
INFORMATIONAL
SUBMITTALS

- .1 Submit in accordance with Section 01 11 01.
- .2 Submit a work plan to the Thunder Bay International Airport Authority, a minimum of 2 days prior to the planned work at the Thunder Bay International Airport firefighting training area, containing the following information:
 - .1 Description, exact location and duration of work and/or individual tasks.
 - .2 Planned number of staff carrying out the work
 - .3 List of equipment to be used and maximum operating height based on the planned use.
- .3 Slope Stability and Erosion Control Plan: submit slope stability and erosion control plan to PWGSC and Departmental Representative, 5 days prior to excavation work, describing measures to be taken to maintain slope stability during excavation activities and slope stability and erosion control methods implemented in order to prevent erosion of the sloped area once site work is completed.
- .4 Provide closeout submittals as follows:
 - .1 Provide documentation that verifies that waste and debris have been sent to site(s) authorized to receive the type(s) of waste removed.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 For backfill:
 - 1. Imported soil used for backfilling the excavation shall meet the following environmental quality requirements at the contractor's expense:
 - 1. Meets the environmental soil standards for bulk concentrations of the "Canadian Council of Ministers of the Environment (CCME). Soil Quality Guidelines for the Protection of Environmental and Human Health [Residential/Parkland Property Use, coarse-textured soil]" and Ministry of the Environment "Table 3: Full Depth Generic Site Condition Standards in a Non-potable Water Condition [Residential/Parkland/Institutional Property Use, coarse-textured soil]" of the "Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 2011
 - 2. Imported soil used for backfill from the excavation or other sources, approved by Departmental Representative, for use intended, shall be unfrozen and free from rocks larger than 75 mm, cinders, ashes, sods, refuse or other deleterious materials and meets the above soil standards.
- .2 Topsoil, material free of toxic elements and capable of supporting good vegetative growth and suitable for use in top dressing, landscaping and seeding. Material shall be reasonably free from subsoil, clay lumps, brush, objectionable weeds, and other litter, and free from cobbles, stumps, roots, and other objectionable material larger than 25 millimeters in any dimension, pH 5.5 to 7.5.
- .3 Grass seed Certified Canada No. 1 Grade to Government of Canada, Seeds Regulations, 50% Kentucky Blue grass, 45% Creeping Red Fescue, 5% Norlea perennial rye; 75% germination, 97% purity.
- .4 Geotextile: woven synthetic fibre fabric, supplied in rolls.
 - .1 Composed of: minimum 85% by mass of polypropylene or polyester able to resist deterioration by ultra violet exposure.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Evaluation and Assessment:
 - .1 Examine Golder Technical Memorandum (Appendix A) and drawings.
 - .2 Comply with all Thunder Bay International Airport Security Requirements as communicated by airport authority representative.
 - .3 Before commencing work verify locations of buried services on and adjacent to site.

3.2 PREPARATION

- .1 Temporary erosion control:
 - .1 Provide temporary erosion control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent areas, according to requirements of the Slope Stability and Erosion Control Plan described herein.
 - .2 Inspect, repair, and maintain erosion control measures during construction.
 - .3 Remove erosion controls and restore and stabilize areas disturbed during removal.
- .2 Protection of in-place conditions:
 - .1 Keep excavations clean, free of standing water, and loose soil.
 - .2 Where soil is subject to significant volume change due to change in moisture content, cover and protect to Departmental Representative's approval.
 - .3 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 that are to remain from damage.
 - .4 Protect buried services that are required to remain undisturbed.
- .3 Removal:
 - .1 Remove trees, stumps, logs, brush, shrubs, bushes, vines, undergrowth, rotten wood, dead plant material, exposed boulders and debris within areas where excavation is required.
 - .2 Vegetation and boulders shall be disposed of on-site, as directed by the Departmental Representative and the Thunder Bay International Airport Authority.

3.3 EXCAVATION AND

- .1 Excavate and removal all topsoil, waste debris, organic matter and associated soil within the

REMOVAL OF WASTES

abandoned dumpsite and, other metal barrels or pails indicated on the Drawings and any additional visible debris or waste identified at ground surface in the area bounded by the fence and the Neebing River, to the extent and limits as directed by the Departmental Representative.

1. Waste debris and associated soil within the abandoned dumpsite are to be excavated to a depth at which waste is no longer visible, as determined by the Departmental Representative.

2. The approximate lateral extent and depth to which waste materials were previously observed within the abandoned dumpsite are indicated on the Drawings and Appendix A.

- .2 Shore and brace excavations as required to maintain slope stability, protect slopes and banks and perform work in accordance with Provincial and Municipal regulations whichever is more stringent.
- .3 If temporary storage for sorting is required, store all waste materials in a lined area, as directed by the Department Representative and the Thunder Bay International Airport Authority.
- .4 Prior to, during and after removal of the waste debris and soil, Departmental Representative may require the installation or construction of improvements to the work area to correct temporary and final conditions in the work area.
- .5 Improvements may include grading, filling, planting, temporary roads, erosion control in order to maintain slope stability.
- .6 Notify Departmental Representative when excavations are complete.
- .7 Dispose of waste materials and non-hazardous soil as per section 01 35 43.
- .8 Dispose of hazardous solid and liquid waste materials as per section 01 35 43.

3.4 FIELD QUALITY CONTROL

- .1 Testing of materials and compaction of backfill and topsoil will be carried out by testing laboratory designated by Departmental Representative.
- .2 Backfill: Samples, submit to designated testing agency, [23] kg sample of fill material proposed for use as backfill, no later than [1] week before

backfilling or filling work.

- .3 Test topsoil from source prior to stripping and stockpiling, for clay, sand, silt, nitrogen, phosphorus, potassium, magnesium, soluble salt content and pH value.
 - 1. Collect composite sample and submit 0.5 kg sample of topsoil to testing laboratory.
 - 2. Submit two copies of soil analysis to Departmental Representative.
- .4 Not later than [1] week minimum before backfilling or filling, submit to designated testing agency, samples of backfill and topsoil to be approved by the Departmental Representative.
- .5 Fill or soil that has not been approved by the Department Representative shall not be imported onto the site.
- .6 Do not begin backfilling or filling operations until material has been approved for use by Departmental Representative.

3.5 BACKFILLING

- .1 Remove snow, ice, construction debris, organic soil and standing water from spaces to be filled.
- .2 Fill excavated areas with selected material compacted as specified for fill or re-grading using existing soil at the work site, as instructed by the Departmental Representative.
- .3 Cobbles and boulders excavated as part of the excavation activities may be used in backfilling.
- .4 Compaction densities are percentages of maximum densities obtained from ASTM D698. Compact fill material to 95%.

3.6 GRADING

- .1 Fill and grade site to elevation of surrounding area of slope consistent with the approved slope stability and erosion control plan.

3.7 FINAL EROSION CONTROL MEASURES

- .1 On slopes greater than 3:1, cover graded surface with appropriate erosion control blanket (geotextile)
 - 1. Place geotextile material by unrolling onto graded surface and retain in position with wooden stakes if required.

2. Place geotextile material on sloping surfaces in one continuous length from toe of slope to upper extent of geotextile.

3. Overlap each successive strip of geotextile [600] mm over previously laid strip.

.2 Apply topsoil to a thickness of 150 mm.

.3 Install silt fences along base of excavated and re-graded slope, to prevent damage to existing monitoring wells at the base of the slope by erosional loss of soil.

.4 Apply grass seed Certified Canada No. 1 Grade to Government of Canada, Seeds Regulations, 50% Kentucky Blue grass, 45% Creeping Red Fescue, 5% Norlea perennial rye; 75% germination, 97% purity

.1 Seed in frost-free ground

.2 Sow 1.22 kg/100 m² in one direction and 1.22kg/m² at right angles to first direction.

.3 Rake seed into soil

.4 Rolls surface with light roller

.5 Water to achieve 50 mm moisture penetration into soil

3.8 SHORTAGE AND SURPLUS

.1 Supply necessary fill and topsoil to meet backfilling and grading requirements.

.2 Dispose of surplus material off site.

3.9 RESTORATION

.1 Clean and reinstate areas affected by Work

.2 Protect newly graded areas from erosion and maintain free of trash or debris.

.3 Ensure erosion control measures in place with suitable substrate:

1. To allow for natural regrowth of local vegetation in the work area.

2. To prevent loss of soil due to erosion at the surface of the excavated and re-graded area during rainfall or run-off events.

3.10 CLEANING

.1 Progress Cleaning:

.1 Leave Work area clean at end of each day.

.2 Dispose of cleared and grubbed material off site

daily.

.3 Secure or remove immediately all loose materials which have the potential to interfere with airport activities.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.

.3 Waste Management: refer to Section [01 35 43]

3.11 PROCEDURE FOR
REMOVING MATERIAL
FROM THE
SITE

.1 Co-ordinate trips and counts to maximize efficiency of removal operations and minimize impact on the Thunder Bay International Airport Authority.

.2 The trucks will enter/exit through the gated entrance, as directed by the Thunder Bay International Airport Authority.

.3 Contractor shall remove and dispose of all material stored at the site for the purpose of this work.

----- END -----