

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

1. Section 31 23 10 Earth Excavation and Backfilling.

1.2 REFERENCES

1. Transportation and Dangerous Goods Act (1999).
2. Ontario Environmental Protection Act and related Regulations, including O. Reg. 387/04 for Water Taking; O.Reg. 347 – General Waste; O.Reg 153 – Record of Site Condition, or other as may be applicable.
3. Canadian Environmental Protection Act.
4. Environmental Guide for Erosion and Sediment Control During Construction of Highway Projects, Ministry of Transportation Ontario.
5. Ontario Provincial Standard Specification for Temporary Erosion and Sediment Control; the Management of Excess Material or other as may be applicable.
6. Canadian Council of Ministers of the Environment guidelines and procedures.
7. City of Ottawa Sewer Use By-law (No. 2003-514).
8. United States Environmental Protection Agency, Environmental Protection Technology Series. Guidelines for Erosion and Sediment Control Planning and Implementation.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

1. Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
2. Submit, prior to start of work, with sufficient time (a minimum of two weeks) to allow review before site work is initiated, the following plans to Engineer for review and approval prior to initiation of site work:
 1. Erosion and Sediment Control Plan.
 2. Surface Water and Groundwater Management Plan.
 3. Site layout showing construction areas, areas of controlled access, areas related to Contractor's approved Health and Safety Plan.
 4. Soil Removal and Management Plan, including equipment decontamination and soil tracking plan (note that control of equipment access to contaminated excavation area is acceptable as part of the decontamination plan).
 5. Dust and Particulate Control Plan.
 6. Site Specific Health and Safety Plan.
 7. Emergency Preparedness and Spill Response Plan.
3. As work progresses, submit the following documentation of site activities:
 1. Copies of transport manifests, trip tickets, and disposal receipts for waste materials removed from work area.

2. Weekly copies of site entry and work area logbooks with information on worker and visitor access.
3. Traffic management measures with control of ingress and egress from work area at contaminated soil excavation.
4. Documentation of regular inspection of equipment and materials storage and staging and environmental protection measures.

1.4 REGULATORY REQUIREMENTS

1. Provide erosion and sediment control in accordance with federal and provincial regulations to ensure that no solids are transmitted to waterways or to a clean area of the site.
2. Comply with federal, provincial, and local anti-pollution laws, ordinances, codes, and regulations when disposing of waste materials, debris, and rubbish. In particular, the Contractor shall ensure that no contamination, waste or other substances which may be detrimental to aquatic life or quality of water shall enter the watercourse as either direct or indirect result of construction.

1.5 SEQUENCING AND SCHEDULING

1. Do not commence Work involving contact with potentially contaminated materials until site layout and all protection plans are approved by Engineer.

1.6 REGULATORY REVIEW

1. Various regulatory agencies having jurisdiction over the project and area may request access to the site during construction and the Contractor shall provide easy access and meet the requirements of those agencies without delay.

1.7 SOIL STOCKPILING FACILITIES

1. Where possible, avoid requirement for soil stockpiling and manage excavation to ensure stockpiles are not required for long duration. Provide, maintain, and operate storage/stockpiling areas as required, in manner consistent with Erosion and Sediment Control Plan and Dust Control and Air Monitoring Plan.
2. Incorporate liners into proposed stockpile locations to prevent contact between stockpile material and ground. Equip facility with tarps capable of covering stockpiled material until material can be removed off site.

1.8 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 Engineer; transport and dispose of at appropriate off-site disposal facility. Clean access roads as required.
 2. Engineer 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 NCC.

1.9 DUST AND PARTICULATE CONTROL

1. Prepare Dust and Particulate Control Plan for submission and approval by NCC to document how Contractor will execute Work to minimize raising dust from construction operations.
2. Implement and maintain dust and particulate control measures at all times during construction and in accordance with 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 Engineer'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 or causing nuisance to users of the area during construction.
7. Engineer will stop work at any time when Contractor's control of dust and particulates is inadequate for wind conditions present at site.
8. If Contractor's dust and particulate control is not sufficient for controlling dust and particulates into atmosphere, stop work. Contractor must discuss 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 dust or particulates.

1.10 POLLUTION CONTROL

1. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious toxic substances and pollutants produced by construction operations. Document methods in Emergency Preparedness and Spill Response Plan that is submitted to Engineer and approved prior to initiating site work.
2. Be prepared to intercept, clean up, and dispose of spills or releases (including fuel, concrete, grout, sediment, construction water, waste materials, etc.) that may occur whether on land or water. Maintain materials and equipment required for cleanup of spills or releases readily accessible on site. Do not conduct work at times when conditions, such as high water flows, storms or floods may increase the potential for spills or releases.
3. Promptly report spills and releases potentially causing damage to environment to:
 1. Ontario the Ministry of Environment Spills Action Centre (1-800-268-6060) and any authority having jurisdiction or interest in spill or release including conservation authority, water supply authorities, drainage authority, road authority, and fire department.
 2. Owner of pollutant, if known.
 3. Person having control over pollutant, if known.
 4. NCC 24 Hour Emergency Communication Service at 613-239-5353..
4. Contact manufacturer of pollutant if known and ascertain hazards involved, precautions required, and measures used in cleanup or mitigating action.

5. When safe to do so, take immediate action using available resources to contain and mitigate effects on environment and persons from spill or release.
6. Provide spill response materials including, containers, adsorbent, shovels, and personal protective equipment. Make spill response materials available at all times in which hazardous materials or wastes are being handled or transported. Spill response materials: compatible with type of material being handled.

1.11 EQUIPMENT DECONTAMINATION

1. Prior to commencing work involving equipment contact with potentially contaminated materials, include decontamination procedures in Soil Removal and Management Plan to ensure that contaminants are not tracked beyond the excavation area. This may include, control of equipment that enters the excavation area, equipment washing areas, truck tire washing and dust control on local access routes.
2. Provide, operate, and maintain suitable equipment and labour to ensure plan is effectively implemented.
3. Decontaminate equipment after working in potentially contaminated work areas and prior to subsequent work or travel on clean areas.
4. 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 water generated. Use water or steam for decontamination as appropriate and as approved by Engineer. 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 away from contaminant excavation, in designated area before removing from site or travelling on clean areas.
5. Take appropriate measures necessary to minimize drift of mist and spray during decontamination including provision of wind screens.
6. Collect decontamination wastewaters and sediments which accumulate from equipment decontamination and dispose of in accordance with municipal regulations and permits, as applicable.
7. Furnish and equip personnel engaged in equipment decontamination with protective equipment including suitable disposable clothing, respiratory protection, and face shields, in accordance with the Contractors Site-specific Health and Safety Plan.

1.12 WATER CONTROL

1. Prepare and submit a Surface Water and Groundwater Management Plan for review and approval by NCC. Plan must consider contaminants identified in soil and groundwater at Richmond Landing, as documented in Environmental Reports provided by NCC.
2. Prevent surface water runoff from puddling in the work area and from leaving work areas. Grade site to drain in manner described in Erosion and Sediment Control Plan.
3. Do not discharge decontamination water, or surface water runoff, or groundwater which may have come in contact with potentially contaminated material, off site or to municipal

sewers except in accordance with permits.

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 when inclement weather is forecast.
5. Direct surface waters that have not contacted potentially contaminated materials to existing surface drainage systems.
6. Control surface drainage including ensuring that gutters are kept open, water is not directed across or over pavements or sidewalks except through approved pipes or properly constructed troughs, and runoff from unstabilized areas is intercepted and diverted to suitable outlet.
7. Dispose of water in manner not injurious to public health or safety, to property, or to any part of Work completed or under construction.
8. Provide, operate, and maintain necessary equipment appropriately sized to control water in work areas.

1.13 DEWATERING

1. Design doesn't require dewatering of excavation. If dewatering is required based on construction methods, apply for, obtain and follow a Permit to Take Water issued by the Ministry of the Environment and Climate Change and any other acts and regulations.

1.14 EROSION AND SEDIMENT CONTROL

1. Plan and execute construction by methods to control surface drainage from cuts and fills, from stockpiles, staging areas, and other work areas to be implemented and maintained at all times. Prevent erosion and sedimentation in accordance with approved Sediment and Erosion Control Plan. A copy of the Erosion and Sediment Control Plan shall be present on site at all times.
2. Sediment and Erosion Control Plan shall indicate how the Contractor intends to provide for securing the site against erosion and siltation for the full duration of the construction period. The Contractor shall not proceed with the excavation until approval of the Erosion and Sediment Control Plan is provided. The Plan must include the following:
 1. Methods reflective of construction activities to minimize amount of bare soil exposed at one time. Stabilize disturbed soils as quickly as practical. Strip vegetation, regrade, or otherwise develop to minimize erosion. Remove accumulated sediment resulting from construction activity from adjoining surfaces, drainage systems, and water courses, and repair damage caused by soil erosion and sedimentation as directed by Engineer.
 2. Sediment control measures during construction which may include, silt fences, hay or straw bales, ditches, geotextiles, drains, berms, terracing, riprap, temporary drainage piping, sedimentation basins, vegetative cover, dikes, and other construction required to prevent erosion and migration of silt, mud, sediment, and other debris off site or to other areas of site where damage might result, or that might otherwise be required by Laws and Regulations.
 3. Methods that are proven to be effective in the conditions anticipated by this contract (e.g. work adjacent to a watercourse that will extend over the winter). Plan must include description of materials and products and installation methods

- to support claims of effectiveness.
4. Construction procedures to avoid damage to work or equipment encroachment onto water bodies or drainage ditch banks. In event of damage, promptly take action to mitigate effects. Restore affected bank or water body to existing condition.
 5. Training of all workers, including sub-contractors on the importance of the erosion and sediment control measures and enforcement of consequences of the failure to comply with the plan and regulatory requirements.
3. The Contractor shall exercise reasonable care to ensure that sediment run-off does not enter the watercourse. Berms, silt fences and other best management practices, as determined by the Contractor's methods shall be incorporated into the plan and implemented over the duration of the Work.
 4. Installation:
 1. Construct temporary erosion control items as indicated in the Plan and in accordance with manufacturer instructions and proven techniques. Changes required by field conditions are to be approved by the Engineer.
 2. Check erosion and sediment control measures in accordance with documented inspection as defined in the Plan and at a minimum, weekly and after each rainfall; during prolonged rainfall check daily.
 3. Measures are to be adjusted throughout the work to reflect areas of activity.
 4. Whenever sedimentation is caused by stripping vegetation, regrading, or other development, remove it from adjoining surfaces, drainage systems, and watercourses, and repair damage as quickly as possible.
 5. Prior to or during construction, Engineer may require installation or construction of improvements to prevent or correct temporary conditions on site. Improvements may include berms, mulching, sediment traps, detention and retention basins, grading, planting, retaining walls, culverts, pipes, guardrails, temporary roads, and other measures appropriate to specific condition. Temporary improvements must remain in place and in operation as necessary or until otherwise directed by Engineer.
 6. Repair damaged components of the plan as soon as possible after discovery.
 7. Remove temporary erosion and sediment control devices upon completion of Work. Materials once removed become property of Contractor.
 5. Do not disturb existing embankments or embankment protection.

1.15 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.

1.16 FINAL DECONTAMINATION

1. Perform final decontamination of construction facilities, equipment, and materials which may have come in contact with potentially contaminated materials prior to removal from site.
2. Remove surplus materials, non-contaminated waste, litter, debris and temporary facilities

from 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. Minimize generation of waste to maximum extent practicable. Take necessary precautions to avoid mixing clean and contaminated wastes.

PART 2 - PRODUCTS

2.1 NOT USED

PART 3 - EXECUTION

3.1 NOT USED

END OF SECTION