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**Supporting Documentation**

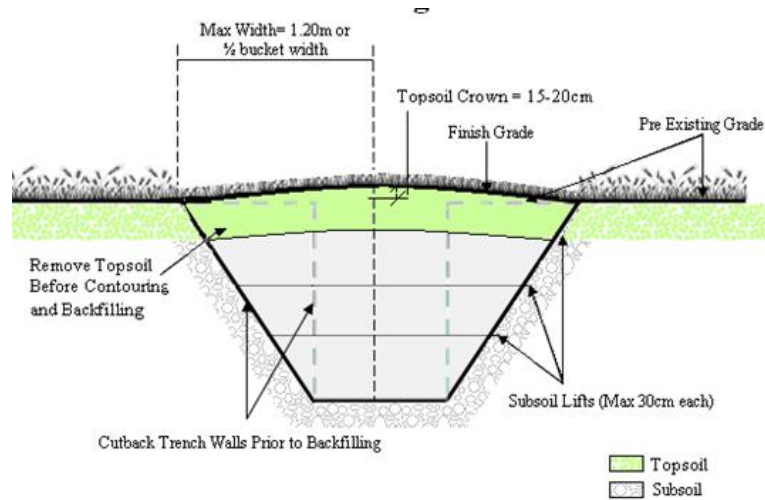
- Photos of the Main Lagoon
- Photos of the Rider Lagoon

**END OF SECTION**

## **Part 1**      **SUMMARY OF WORK**

### **1.1**            **WORK COVERED BY CONTRACT DOCUMENTS**

- .1      Work of this Contract is comprised of tasks at the former Agriculture Canada Suffield Pasture in Suffield, Alberta. Refer to the other specification sections for more detail. There are two (2) lagoons (pits) to be decommissioned for AAFC/DND at the former AAFC Suffield Pasture located in Suffield, Alberta. The lagoons are known as Main Lagoon 1 and Rider Lagoon 2. Task to include at a minimum:
  - .1      Submit 7 days before mobilization to site the following: work plan including schedule, Health and Safety Plan, Spill Response Plan, permits, certificates.
  - .2      Remove and dispose of all the fencing material (including posts and pipes on ground) from the two (2) lagoons to a licensed off-site waste disposal facility.
  - .3      The existing lagoons are to be in-filled using the existing bermed material on site as well as clean off-site material sourced to be similar to in-situ and approved by DND as follows: The two sources include the Subsoil pile at Steep Rock just outside of Dunmore to the south west at the bottom of the pit and the Topsoil Screened pile at LMT between Medicine Hat and Dunmore on the west side of the Highway.
  - .4      Backfill in 0.3 m lifts using clean material to be approved by DND Representative and compact by running heavy equipment over each lift.
  - .5      Ensure each lift is bucket or track packed once per lift to reduce air pockets and large clumps which will result in less settling and greater soil horizon variation.
  - .6      Repeat track/bucket packing in 30cm lifts up to the previously identified topsoil/ A-horizon where topsoil will be backfilled in one lift and track/ bucket packed to reduce wind and water erosion.
  - .7      Figure below demonstrates that it is acceptable for the backfilled excavation to have a crown at the surface as natural settling will occur, however if the surface is recessed then more topsoil will be required to achieve a flat surface at a minimum.



- .8 Restore site with 0.1m depth topsoil to existing grade.
- .9 Mound 150 mm of topsoil over existing grade to allow for compaction.
- .10 Restore both areas with seed and fertilizer as specified by AAFC.

#### Suffield Pasture Main Lagoon 1

- The main lagoon is located on the east side of the yard
- The lagoon aerial measurements are approx. 21.0m x 10.4m and approximately 3.5m deep.
- There is a partial fence that is 10.4m long that extends across the entire west side of the lagoon connected to two 10.4m long fences that extend along each of the north and south side of the lagoon
- The east half of the lagoon does not have fence
- The lagoon is mostly dry and weed covered with the exception of a small area on the west side of the lagoon that is approx. 2.0m x 3.0m and has standing water approx. 0.3m deep.
- There is a spoil pile located on the east end of the lagoon that at the base measures approx. 9.0m x 3.0m and is approx. 3.0m high
- There is evidence that some of the original spoil pile has been removed
- There may be enough material to fill approx. 30% of the lagoon.

#### Suffield Pasture Rider Cabin Lagoon 2

- The rider cabin lagoon located in the northwest corner of the yard is approximately 8.4 m X 6.4m in aerial extent.
- These measurements were taken on the outside of the chain link fence that surrounds the lagoon
- The lagoon is approx. 3m deep at the center and the banks are a fairly steep slope
- The bottom of the lagoon is dry and overgrown with weeds.
- There is not a spoil pile located near this lagoon so all fill material will have to be

brought in.

## **1.2 CONTRACT METHOD**

- .1 Construct Work under lump sum bid contract with price breakdown.

## **1.3 CONTRACTOR USE OF PREMISES**

- .1 Limit use of premises for Work, for storage, and for access, to allow:
  - .1 Owner occupancy.
  - .2 Work by other contractors.
  - .3 Public usage.
- .2 Co-ordinate use of premises under direction of DND Representative.
- .3 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.
- .4 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

## **1.4 OWNER OCCUPANCY**

- .1 Owner will occupy premises during entire construction period for execution of normal operations.
- .2 Co-operate with DND Representative in scheduling operations to minimize conflict and to facilitate Owner usage.

## **1.5 EXISTING SERVICES**

- .1 Conduct utility locates prior to any work.

## **1.6 DOCUMENTS REQUIRED**

- .1 Maintain at job site, one copy each document as follows:
  - .1 Specifications.
  - .2 Change Orders.
  - .3 Other Modifications to Contract.
  - .4 Field Test Reports / Demonstration Test reports.
  - .5 Health and Safety Plan and Other Safety Related Documents including records of daily safety meetings/tailgate safety meetings etc.
  - .6 WCB notice of project.
  - .7 Inspector reports.
  - .8 Other documents as specified Departmental Representative.

## **2.1 USE OF SITE AND FACILITIES**

- .1 Execute work with least possible interference or disturbance to normal use of premises.
- .2 Contractors may be able to drop off equipment and supplies outside of normal working hours or weekends. It is recommended that no materials be left on site unless protected by security. Discuss with DND Representative.
- .3 Equipment and vehicle staging areas, material storage, waste storage and work space, will be designated prior to work commencing.
- .4 Maintain existing services to site facilities and provide for personnel and vehicle access.
- .5 There are no sanitary facilities on site. Contractor to make own arrangements for sanitary facility use.

## **2.2 EXISTING SERVICES**

- .1 Notify DND of intended interruption of services and obtain required permission.
- .3 Disrupted power must be as minimal and localized as possible. Every effort should be made to de-energize only applicable related equipment.

## **2.3 SPECIAL REQUIREMENTS**

- .1 Ensure that Contractor personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .2 Keep within limits of work and avenues of ingress and egress.

## **2.4 SMOKING ENVIRONMENT**

- .1 Comply with smoking restrictions. Smoking is prohibited within the Work site.

## **Part 3 PROJECT MEETINGS**

### **3.1 PRECONSTRUCTION MEETING**

- .1 Attend a pre-construction meeting within 5 days after award of Contract.
- .2 Departmental Representative, DND Representative, Contractor, major Subcontractors, field inspectors and supervisors will be in attendance.
- .3 Agenda to include:
  - .1 Appointment of official representative of participants in the Work.
  - .2 Submittals schedule.
  - .3 Requirements for temporary facilities 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.

### **3.2 DAILY SITE SAFETY MEETINGS**

- .1 Plan and chair daily safety meeting of all on-site workers during field work on site.

## **Part 4 CONSTRUCCION PROGRESS SCHEDULE**

### **4.1 PROJECT SCHEDULE**

- .1 Ensure detailed Project Schedule includes activity types as follows:
  - .1 Award.
  - .2 Pre-construction meeting.
  - .3 Mobilization.
  - .4 Fence Removal/Backfill.
  - .5 Compaction.
  - .6 Site restoration.

## **Part 5 SUBMITTAL PROCEDURES**

### **5.1 ADMINISTRATIVE**

- .1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .4 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .5 Verify field measurements and affected adjacent Work are coordinated.
- .6 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .7 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .8 Keep one reviewed copy of each submission on site.

## **5.2 PROGRESS PHOTOGRAPHS**

- .1 Submit progress photographs for all stages of work completed, to be submitted at completion of the work.

## **5.3 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 Quantity: Provide sufficient number of photographs to adequately describe the work activities carried out during the reporting period. A minimum of two photographs taken from two viewpoints are to be provided for each clean-up/construction activity.
- .4 Submit final photographs prior to final invoice submission.

## **5.4 FEES, PERMITS AND CERTIFICATES**

- .1 Apply and pay for all required permits and certificates.
- .2 Contractor to provide a Notice of Project to the Alberta WCB.
- .3 Provide authorities having jurisdiction with information requested.
- .4 Furnish certificates and permits to Departmental Representative 5 days prior to site mobilization.

# **Part 6 HEALTH AND SAFETY REQUIREMENTS**

## **6.1 SUBMITTALS**

- .1 Submit site-specific Health and Safety Plan: Within 7 days prior to commencement of Work.
- .2 Submit copies of reports or directions issued by Federal and Provincial health and safety inspectors.
- .3 Submit copies of incident and accident reports within 24 hours of occurrence

## **6.2 REGULATORY REQUIREMENTS**

- .1 Do Work in accordance with Regulatory Requirements.

## **6.3 RESPONSIBILITY**

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.

- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

#### **6.4 COMPLIANCE REQUIREMENTS**

- .1 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

#### **6.5 UNFORSEEN HAZARDS**

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

#### **6.6 HEALTH AND SAFETY CO-ORDINATOR**

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Coordinator. Health and Safety Coordinator must:
  - .1 Have site-related working experience specific to activities associated with project.
  - .2 Have working knowledge of occupational safety and health regulations.
  - .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
  - .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

#### **6.7 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 Alberta, and in consultation with Departmental Representative.

#### **6.8 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.

#### **6.9 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.



**Part 7 ENVIRONMENTAL PROCEDURES**

**7.1 DEFINITIONS**

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

**7.2 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.

**7.3 DRAINAGE**

- .1 Do not pump water containing suspended materials or contaminants into waterways, sewer or drainage systems.
- .2 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

**7.4 SITE CLEARING AND PLANT PROTECTION**

- .1 Minimize stripping of topsoil and vegetation.

**7.5 WORK ADJACENT TO WATERWAYS**

- .1 Do not operate construction equipment in waterways.
- .2 Do not dump excavated fill, waste material or debris in waterways.

**7.6 POLLUTION CONTROL**

- .1 Prevent extraneous materials from contaminating air and waterways beyond application area, by providing temporary enclosures.
- .2 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.

**7.7 UNANTICIPATED SOIL CONTAMINATION**

- .1 Should unanticipated soil contamination occur or be discovered:

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

## **7.8 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 Work 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.

## **Part 8 REGULATORY REQUIREMENTS**

### **8.1 REFERENCES AND CODES**

- .1 Perform Work in accordance with the Canadian Council of Ministers of the Environment (CCME-PN1326-2004) including amendments up to tender closing date and other regulations of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply, as well as best practices.
- .2 Meet or exceed requirements of:
  - .1 Contract documents.
  - .2 Specified standards, codes and referenced documents.
  - .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS). Material Safety Data Sheets (MSDS).
  - .4 Transport Canada (TC). Transportation of Dangerous Goods Act, 1992 (TDGA), c. 34.
  - .5 Canada Occupational Health and Safety Regulations (O.C. 2012-005);
  - .6 Canadian Labour Code (C.R.C., c. 986; 2013),
  - .7 American Society for Testing and Materials (ASTM).
  - .8 The Canadian Environmental Protection Act (CEPA 1999).

### **8.2 BUILDING SMOKING ENVIRONMENT**

- .1 Smoking is prohibited on the work site.

## **Part 9 QUALITY CONTROL**

## **9.1 INSPECTION**

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

## **9.2 ACCESS TO WORK**

- .1 Allow inspection/testing agencies access to Work.
- .2 Co-operate to provide reasonable facilities for such access.

## **9.3 PROCEDURES**

- .1 Notify appropriate agency and Departmental Representative 72 hours in advance of requirement for tests, in order that attendance arrangements can be made.

## **9.4 REJECTED WORK**

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.

# **Part 10 TEMPORARY UTILITIES**

## **10.1 INSTALLATION AND REMOVAL**

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

## **10.2 EXISTING UTILITIES**

- .1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and/or building occupants.
- .2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

## **10.3 FIRE PROTECTION**

- .1 Provide and maintain temporary fire protection equipment during performance of Work

required by governing codes, regulations and bylaws.

- .2 Burning rubbish and construction waste materials is not permitted on site.

## **Part 11 CONSTRUCTION FACILITIES**

### **11.1 INSTALLATION AND REMOVAL**

- .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.
- .2 Indicate use of supplemental or other staging area.
- .3 Remove from site all such work after use.

### **11.2 SITE STORAGE/LOADING**

- .1 Confine work and operations of employees within approved work area. Do not encumber premises with products.
- .2 Do not load or permit to load any part of Work with weight or force that will endanger Work.

### **11.3 CONSTRUCTION PARKING**

- .1 Parking will be permitted on site provided it does not disrupt performance of Work and site operation.
- .2 Provide and maintain adequate access to project site.

### **11.4 SECURITY**

- .1 Site security is Contractor's responsibility.
- .2 Provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays.

### **11.5 CONSTRUCTION SIGNAGE**

- .1 No other signs or advertisements, other than warning signs, are permitted on site.
- .2 Signs and notices for safety and instruction in both official languages Graphic symbols to CAN/CSA-Z321.
- .3 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Departmental Representative.

### **11.6 PROTECTION AND MAINTENANCE OF TRAFFIC**

- .1 Provide access and temporary relocated roads as necessary to maintain traffic.

- .2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Departmental Representative.
- .3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs
- .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. Contractor: responsible for repair of damage to roads caused by construction operations.
- .7 Construct access and haul roads necessary.
- .8 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .9 Dust control: adequate to ensure safe operation at all times.
- .10 Provide snow removal during period of Work.

#### **11.7 CLEAN-UP**

- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Clean dirt or mud tracked onto paved or surfaced roadways.

### **Part 12 EXAMINATION AND PREPARATION**

#### **12.1 EXISTING SERVICES**

- .1 Before commencing work, establish location and extent of service lines in area of Work and notify Departmental Representative of findings.
- .2 Remove abandoned service lines within 2m of structures. Cap or otherwise seal lines at cut-off points.

#### **12.4 SUBSURFACE CONDITIONS**

- .1 Promptly notify Departmental Representative in writing if subsurface conditions at Place of Work differ materially from those indicated in Contract Documents, or a reasonable assumption of probable conditions based thereon.
- .2 After prompt investigation, should Departmental Representative determine that conditions do differ materially, instructions will be issued for changes in Work as provided in Changes and Change Orders.

**Part 13**        **CLEANING**

**13.1**            **PROJECT CLEANLINESS**

- .1        Maintain Work in tidy condition, free from accumulation of waste products and debris, other than that caused by Owner or other Contractors.
- .2        Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site, unless approved by Departmental Representative.
- .3        Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4        Provide on-site containers for collection of waste materials and debris.
- .5        Store volatile waste in covered metal containers, and remove from premises at end of each working day.

**13.2**            **FINAL CLEANING**

- .1        When Work is completed, remove surplus products, tools, construction machinery and equipment.
- .2        Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .6        Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

**Part 14**        **SELECTIVE SITE DECOMMISSIONING/RESTORATION**

**14.1**            **SUBMITTALS**

- .1        Submittals required 7 days before site mobilization shall include:
  - .1        Health and Safety Plan including First Aid Certificates.
  - .2        Spill Contingency Plan.
  - .3        Work Plan including:
    - .1        schedule of work,
    - .2        landfill facilities to be used for both hazardous and non-hazardous goods,
    - .3        list of haulers to be used,
    - .4        backfill source,
    - .5        how and where dangerous goods are to be disposed
- .2        Sequence of work:
  - .1        Submit for approval drawings, diagrams or details showing sequence of work

where required by authorities having jurisdiction.

- .3 Hazardous Materials: provide description of Hazardous Materials and Notification of Filing with proper authorities prior to beginning of Work as required.
- .4 Certificates: submit copies of certified weigh bills from authorized disposal sites and reuse and recycling facilities for material removed from site at completion of work with final invoice.

#### **14.2 QUALITY ASSURANCE**

- .1 Regulatory Requirements: ensure Work is performed in compliance with applicable Municipal, Provincial and Federal Acts and Regulations.
- .2 Site Meeting.
  - .1 Attend pre-construction meeting one week after award to:
    - .1 Verify project requirements.
    - .2 Review site and substrate conditions.
  - .2 Arrange for site visit with DND Representative to examine existing site conditions adjacent to work, prior to start of Work.
  - .3 Ensure key personnel attend.
- .3 Health and Safety.
  - .1 Do construction occupational health and safety in accordance with Provincial and Federal Acts and Regulations.

#### **14.3 DELIVERY, STORAGE AND HANDLING**

- .1 Storage and Protection.
  - .1 Protect existing items designated to remain. In event of damage to such items, immediately replace or make repairs to approval of Departmental Representative and at no cost to Departmental Representative

#### **14.4 SITE CONDITIONS**

- .1 Site Environmental Requirements.
  - .1 Ensure that selective decommissioning/restoration work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.
  - .2 Do not dispose of waste or volatile materials including but not limited to, mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers.
    - .1 Ensure proper disposal procedures are maintained throughout the project.
  - .3 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers or onto adjacent properties.

- .4 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with as directed by Departmental Representative.
- .5 Protect plants and foliage on site and adjacent properties where required.

#### **14.5 SCHEDULING**

- .1 Employ necessary means to meet project time lines without compromising specified minimum rates of material diversion.
  - .1 Notify Departmental Representative in writing when unforeseen delay[s] occur.

#### **14.6 EQUIPMENT**

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

#### **14.7 NO SALVAGE**

- .1 There is to be no salvage.

#### **14.8 PREPARATION**

- .1 Inspect site with DND Representative and verify extent and location of lagoons to be decommissioned.
- .2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.

#### **14.9 REMOVAL OF HAZARDOUS WASTES**

- .1 Remove contaminated or dangerous materials defined by authorities having jurisdiction, relating to environmental protection, from site and dispose of in safe manner to minimize danger at site or during disposal.

#### **14.10 STOCKPILING**

- .1 Label stockpiles, if required, indicating material type and quantity.
- .2 Designate appropriate security resources/measures to prevent vandalism, damage and theft.
- .3 Locate stockpiled materials convenient for use in new construction to eliminate double handling wherever possible.
- .4 Stockpile materials designated for alternate disposal in location which facilitates removal from site and examination by potential end markets, and which does not impede disassembly, processing, or hauling procedures.

#### **14.11 SITE RESTORATION**

- .1 Restore areas and existing works outside areas of demolition to conditions that existed prior to beginning of Work.



- .2 Use soil treatments and procedures which are not harmful to health, are not injurious to plants, and do not endanger wildlife, adjacent water courses or ground water.

## **Part 15 TOPSOIL PLACEMENT AND GRADING**

### **15.1 MATERIAL SUPPLIED BY CONTRACTOR**

- .1 Contractor will supply a minimum 15 cm thickness of topsoil to job site to compensate for settlement and to maintain a lowest measurement of  $\geq 10\text{cm}$ .

### **15.2 MEASUREMENT PROCEDURES**

- .1 Measure, supply, place and spread topsoil in cubic meters.

### **15.3 REFERENCES**

- .1 Agriculture and Agri-Food Canada
  - .1 The Canadian System of Soil Classification, Third Edition, 1998.

### **15.4 TOPSOIL**

- .1 Topsoil for seeded areas: mixture of particulates, micro-organisms and organic matter which provides suitable medium for supporting intended plant growth.
  - .1 A locally sourced topsoil with soil texture of clay or silty clay and colour of gray based on The Canadian System of Soil Classification.
  - .2 Topsoil is not to contain petroleum hydrocarbons (BTEX, PHC Fractions F1 to F4) at concentrations in excess of the Canadian Council of Ministers of the Environment (CCME) *Canadian Environmental Quality Guidelines* (2007), Tier I guidelines for Residential land use, fine-grained soils.
  - .3 Topsoil is not to contain metals (including mercury) at concentrations in excess of the CCME EQG, Tier 1 guidelines for Commercial land use, fine-grained soils.
  - .4 Finished surface free from:
    - .1 Debris and stones over 50 mm diameter.
    - .2 Course vegetative material, 10 mm diameter and 100 mm length, occupying more than 2% of soil volume.
  - .5 Consistence: friable when moist.

### **15.5 SOURCE QUALITY CONTROL**

- .1 Advise Departmental Representative of sources of topsoil and manufactured topsoil to be utilized within a minimum 1 week prior to backfilling for approval. Topsoil must be clean and free of weeds/weed seeds.
- .2 Contractor is responsible for amendments to supply topsoil as specified.

### **15.6 Preparation Of Sub-Grades**

- .1 Verify that grades are correct.
  - .1 If discrepancies occur, notify Departmental Representative and do not commence work until instructed by Departmental Representative.

- .2 Grade soil, eliminating uneven areas and low spots, ensuring positive drainage.
- .3 Remove debris, roots, branches, stones in excess of 50 mm diameter and other deleterious materials.

**15.7 Placing And Spreading Of Topsoil/planting Soil**

- .1 Place topsoil after DND Representative has accepted subgrade.
- .2 Spread topsoil in uniform layers not exceeding 0.1m using on-site equipment for compaction, as directed by Departmental Representative.
- .3 Spread topsoil to 0.15m (i.e. to grade) with an additional 150 mm to allow for settling for seeded areas (i.e. 15 cm total depth of topsoil)

**15.8 Finish Grading**

- .1 Grade to eliminate rough spots and low areas and ensure positive drainage.
  - .1 Prepare loose friable bed by means of cultivation and subsequent raking.
  - .2 Leave surfaces smooth, uniform and firm against deep foot printing.

**15.9 ACCEPTANCE**

- .1 DND Representative will inspect and test topsoil in place and determine acceptance of material, depth of topsoil and finish grading.

**15.10 Cleaning**

- .1 Upon completion, remove surplus materials, rubbish, tools and equipment barriers.

**Part 16 MECHANICAL SEEDING**

**16.1 Measurement And Payment**

- .1 Payment for seeding will be in square meters.

**16.2 Action And Informational Submittals**

- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for seed, and erosion control.
- .3 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .4 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.

**16.3 Grass Seed**

- .1 DND Representative to review and approve grass seed mixture before seeding.

- .1 Grass seed mixture composition to be 8 to 12 grass species with both warm and cool season species and both early and late seral plant types.
- .2 A copy of the seed certificates for all seed imports is required to be submitted to the Departmental Representative before seeding for review and approval.
- .2 Free of impurities that would inhibit germination and growth.
- .3 Supplied by Contractor at designated source.

**16.4 Fertilizer**

- .1 Use of fertilizers has not been approved for use at Suffield.

**16.5 Erosion Control Blanket**

- .1 Composed of a material that is to be reviewed and approved by the DND representative that does not pose a risk to reptiles (straw matrix netting and weed free hay products are not allowed). Alternative material examples that are acceptable include tackifier and fibre mulch (either paper or wood).

**16.6 Examination**

- .1 Verification of Conditions: verify conditions of substrate previously installed.
  - .1 Visually inspect substrate in presence of DND Representative.
  - .2 Inform DND Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after approval to proceed from DND Representative.

**16.7 Seed Bed Preparation**

- .1 Do not perform work under adverse field conditions as determined by DND Representative.
- .2 Remove and dispose of weeds; debris; stones 50 mm in diameter and larger; and other deleterious materials; in location as directed by DND Representative.
- .3 Verify that grades are correct. If discrepancies occur, notify DND Representative and commence work when instructed by DND Representative.

**16.8 Seed Placement**

- .1 Use manually operated drop seeder (Cyclone type or equivalent).
- .2 Sow seed uniformly at rate of 250 kg/hectare (0.025 kg/m<sup>2</sup>) grass mixture as specified.
- .3 Blend applications 150 mm into adjacent grass areas to form uniform surfaces.
- .4 Sow half of required amount of seed in one direction and remainder at right angles.
- .5 Incorporate seed by light raking in cross directions.

- .6 Consolidate seeded areas with manually operated, water ballast, landscaping type, smooth steel drum roller.

**16.9 Protection**

- .1 Cover seeded area with an erosion control blanket as per manufacturer's directions.
- .2 Erosion control blanket will function to mitigate soil and seed erosion as well as a mulching layer to aid grass establishment.

**16.10 Cleaning**

- .1 Progress Cleaning: clean in accordance with Environmental Procedures.

**16.11 Surplus Material**

- .1 Surplus seed will remain at the site as directed by Departmental Representative.

**16.12 Final Acceptance**

- .1 Seeded areas will be accepted by DND Representative provided that:
  - .1 Area is uniformly seeded
  - .2 Area is properly covered with erosion control.

**END OF  
INSTRUCTION**

### **Suffield Pasture Main Lagoon - Photos**

The main lagoon is located on the east side of the yard

The lagoon measurements are approx. 21.0m x 10.4m and approx. 3.5m deep.

There is a partial fence that is 10.4m long that extends across the entire west side of the lagoon connected to two 10.4m long fences that extend along each of the north and south side of the lagoon

The east half of the lagoon does not have a fence

The lagoon is mostly dry and weed covered, with the exception of a small area on the west side of the lagoon that is approx. 2.0m x 3.0m, and has standing water approx. 1 ft. deep.

There is a spoil pile located on the east end of the lagoon that at the base measures approx. 9.0m x 3.0m and is approx. 3.0m high

There is evidence that some of the original spoil pile has been removed

There may be enough material to fill approx. 30% of the lagoon

**Main1 water at bottom of west side if lagoon looking North West**





**Main5 lagoon looking east**



**Main6 north side of lagoon looking east**





**Main7 east half of lagoon bottom looking south**





Main9 from top of spoil pile looking west



**Main11 looking North West at south end of spoil pile**





**Main 13 looking north east**



### **Suffield Pasture Rider Cabin Lagoon - Photos**

The rider cabin lagoon located in the North West corner of the yard is Approx. 8.4 m X 6.4m

These measurements were taken on the outside of the chain link fence that surrounds the lagoon

The lagoon is approx. 3m deep at the center and the banks are a fairly steep slope

The bottom of the lagoon is dry and over grown with weeds.

There is not a spoil pile located near this lagoon so all fill material will have to be brought in.

Rider2 facing west





Rider6 bottom looking south





Rider7 bottom looking west





Rider9 looking north west



Rider10 looking north west

