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Part 1 General

1.1 PRECEDENCE

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

1.2 DEFINITIONS

- .1 Parks Canada Agency is referred to as 'PCA'.
- .2 Fort Walsh National Historic Site is referred to as 'FWNHS'.
- .3 'Work' means the provision of all labour, services, material and equipment as necessary for the Contractor to complete and perform their obligations in accordance with the Contract.
- .4 'Consultant' refers to Dillon Consulting Limited (Dillon).
- .5 'Owner' or "Departmental Representative" refers to the Parks Canada Agency (PCA) Project Manager or their duly authorized representative.
- .6 'ESO' refers to a PCA Environmental Surveillance Officer.

1.3 PROJECT LOCATION

- .1 The project is located in the province of Saskatchewan, 55km SW of Maple Creek on Hwy 271.

1.4 BACKGROUND

The perimeter fence is intended to be a barrier to domestic livestock and the general public entering the FWNHS while allowing the movement of shared wildlife species between federal lands at this site and provincially managed and privately owned lands outside the park.

Many years of irregular maintenance and the natural process of vegetation regrowth along the fence line has led to deterioration of the existing fence to the point that it no longer creates an effective barrier to livestock entering into the park.

Part 2 Work Covered By Contract Documents

- .1 The project work consists of approximately 12 km of clearing and replacement of perimeter fencing around the Fort Walsh National Historic Site.
- .2 All requirements noted within the Contract Documents shall be completed by the Contractor unless specifically stated otherwise.
- .3 Without limiting the scope of work, the work of the contract generally comprises the following:
 - .1 Clearing of areas designated in the Contract Documents and in accordance with Section 31 10 00 – Clearing.

- .2 Removal and disposal of existing fencing.
- .3 Supply and installation of new fence as designated in the Contract Documents and in accordance with Section 32 31 26 – Wire Fencing.
- .4 Reinstallation of existing metal gates and installation of new access gates.
- .4 Restore disturbed areas to condition existing at start of construction, including application of topsoil and seeding to vegetated areas. All costs associated with restoration are considered incidental to the Work, and no separate or additional payment will be made.
- .5 In preparation for and during construction of this project, an ‘Environmental Protection Plan’ (EPP) is to be prepared by the Contractor to meet the requirements of with Part 5 – Environmental Procedures outlined for the project to ensure the desired minimal adverse effects are achieved.
- .6 The Contractor’s EPP must be approved by Parks Canada Agency prior to start of construction. The EPP will form part of the Contract and the Consultant and PCA’s Environmental Surveillance Officer (ESO) will refer to the approved EPP in determining compliance with the Contract Documents.

2.2 CONTRACT METHOD

- .1 Construct the work under unit price contract.

2.3 WORK SEQUENCE AND SCHEDULE

- .1 Schedule work progress to allow Departmental Representative unrestricted access to inspect all phase of the Work.
- .2 Maintain fire and emergency access on roadways at all times.
- .3 Construct work in stages to prevent livestock from entering FWNHS.
- .4 Complete all clearing by March 31, 2019.
- .5 Complete all fence installation by June 14, 2019.

2.4 LAYDOWN AREAS

- .1 Arrange operations, delivery schedule and other elements of the Work in order to minimize the laydown area required.
- .2 Make good any damage to laydown areas and restore to conditions existing prior to start of construction.

2.5 CONTRACTOR USE OF PREMISES

- .1 Coordinate use of premises under direction of PCA.

2.6 OWNER OCCUPANCY

- .1 Owner will occupy premises during entire construction period.
- .2 Co-operate with Departmental Representative in scheduling operations to minimize conflict and to facilitate Departmental Representative usage.
- .3 In cooperation with Departmental Representative the Contractor shall ensure landowners adjacent to FWNHS are informed of all work to be performed on their property prior to

construction start up and are provided an outline of schedule of work. Coordinate with Departmental Representative during construction any changes in the schedule that will affect landowners.

Part 3 Quantities

- .1 Estimated quantities are provided in Section 01 11 99 – Quantities.

Part 4 Work Restrictions

4.1 ACCESS AND EGRESS

- .1 Maintain access to adjacent properties and FWNHS at all times.

4.2 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to public and normal use of premises.
- .2 Keep the Site clean and free from accumulation of waste materials and rubbish regardless of source.
- .3 Remove snow as necessary for the performance and inspection of the Work.
- .4 Provide sanitary facilities for work force in accordance with governing regulations and with Part 5 – Environmental Procedures outlined for the project. Post notices and take such precautions as required by local health authorities and keep area and premises in sanitary condition.
- .5 Repair any damage to the Site caused by the Work.
- .6 Do not allow pets to be brought to or kept on Site.

4.3 HOURS OF WORK

- .1 Work in FWNHS is permitted during daylight hours, seven (7) days per week unless indicated otherwise.
- .2 Work will not be permitted during the period of any Saskatchewan statutory holiday long weekend.
- .3 Any variance that may be approved by the Departmental Representative under this Section may be revoked at any time for any reason and is provided on the presumption that no additional costs or delay will result from the variance. No claims for additional costs, delays, schedule impacts, loss of productivity or other extra work resulting from a variance will be entertained.

4.4 WORK CONDUCTED OVER OR ADJACENT TO WATERWAYS

- .1 All components of the Work shall be conducted in accordance with Part 5 – Environmental Procedures, outlined for the project.
- .2 All components of the Work shall be conducted without equipment entering into water bodies or wetlands.

- .3 All waste materials and sediment from the Work shall be contained and collected in a manner to prevent any contact with water bodies or wetlands.

4.5 UTILITIES

- .1 Become familiar with all Utilities adjacent to the Work and be responsible for cost of repair of any damage resulting from the Work.
- .2 Establish and maintain direct and continuous contact with the Departmental Representatives and operators of any Utilities which may interfere with the Work. Cooperate with them at all times and in all places of Work. Keep the Consultant informed of all communications with the Utility companies and authorities.
- .3 Notify the Consultant and the Utility companies at least seven (7) days in advance of any activities which may interfere with the operation of such Utilities.
- .4 Whenever working in the vicinity of Utilities, locate such Utilities and expose those that may be affected by the Work, using hand labour or other special means as required.
- .5 Assess the possible impact of the Work on all Utilities that may be affected by the Work and in consultation with Utility owner(s), protect, divert, temporarily support or relocate, or otherwise appropriately treat such Utilities to ensure that they are preserved.
- .6 Immediately report any damage to Utilities to the Consultant and to the Utility company or authority affected and promptly undertake such remedial measures as are necessary at no additional cost to the Owner.

4.6 SURVEY OF EXISTING CONDITIONS

- .1 Contractor is not responsible for boundary survey and demarcation. The fence line shall be replaced on the existing line. Contact the Departmental Representative for instructions in the event that any part of the new fencing cannot be constructed along the existing line.

4.7 PROTECTION OF PERSONS AND PROPERTY

- .1 Comply with all applicable safety regulations including, but not limited to, the Saskatchewan Employment Act, Occupational Health and Safety Regulations and General Safety Regulations.
- .2 Within the Site, the Contractor has all the responsibilities of an “employer” under the Workers Compensation Act and the Occupational Health and Safety Regulation and is designated as the “Prime Contractor”.
- .3 Comply with Canada Labour Code and Canada Occupational Safety and Health Regulations.
- .4 Take all reasonable and necessary precautions and measures to prevent injury or damage to persons and property on or near the Site.
- .5 Promptly take such measures as are required to repair, replace or compensate for any loss or damage caused. Alternatively, and if PCA so directs, promptly reimburse to PCA the costs incurred by them as a result of such loss or damage.

4.8 USE OF PUBLIC AREAS

- .1 Materials and equipment may be hauled on roads within FWNHS using standard highway trucks only, not exceeding legal highway load limits.
- .2 Ensure that vehicles and equipment do not cause nuisance in public areas. All vehicles and equipment leaving the Site and entering public roadways shall be cleaned of mud and dirt clinging to the body and wheels of the vehicle.
- .3 Load and unload vehicles arriving at or leaving the Site in a manner that will prevent dropping of materials or debris on the roadways. Where contents may otherwise be blown off during transit, cover such loads using tarpaulins or other suitable covers.
- .4 Immediately remove or clean spills of materials in public areas.

4.9 WASTE DISPOSAL

- .1 All waste materials shall be removed from the site and properly disposed of outside FWNHS.
- .2 Deposition of any construction debris or sediment into any waterway is strictly forbidden.
- .3 Cost for Waste Disposal shall be considered incidental to the Unit Price items and no separate or additional payment will be made.

4.10 WORK STOPPAGE

- .1 Give precedence to safety and health of public and site personnel and protection of the environment over cost and schedule considerations for Work.

Part 5 Environmental Procedures

5.1 Parks Canada Environmental Information and Mitigation Measures

- .1 Parks Canada Agency (PCA) has provided the following documentation to be reviewed and followed in preparation of an Environmental Protection Plan (EPP):
 - .1 Best Management Practices (BMPs) for Roadway, Highway, Parkway and Related infrastructure.
 - .2 Environmental Protection Plan
 - .1 Prior to any construction or on-site work activities, the Contractor shall provide PCA with an EPP which has been written and certified by a Qualified Environmental Professional (QEP) for PCA approval.
 - .2 Allow 7 calendar days for PCA to review EPP.
 - .3 PCA may request that subsequent revisions are made to the EPP in the event the document does not sufficiently address all required environmental concerns or mitigations.
 - .3 Start-up and Environmental Briefing
 - .1 Prior to any on-site work, all contractors and subcontractors, as well as their employees who may be involved with on-site activities, shall attend a briefing

conducted by the PCA Environmental Surveillance Officer (ESO) relating to their individual and collective responsibilities upon project start-up.

- .2 Employees of other services or material providers who may visit the worksite must be apprised of their duty not to cause adverse environmental impacts.
- .3 The PCA ESO will regularly visit the site to monitor construction activity for conformance with the EPP. Although the ESO has the authority to enforce National Parks Act violations, direction to the Contractor will be the duty of the PCA Project Manager.

Part 6 Cleaning

6.1 PROJECT CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris.
- .2 Remove waste materials from site at regularly scheduled intervals and dispose of them properly.
- .3 Do not burn waste materials on site.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Dispose of waste materials and debris off site.

Part 7 Closeout Procedures

7.1 ADMINISTRATIVE REQUIREMENTS

- .1 Acceptance of Work Procedures:
 - .1 Contractor's Inspection
 - .1 Contractor to conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .2 Notify Departmental Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
 - .3 Request Departmental Representative's inspection.
 - .2 Departmental Representative's Inspection
 - .1 Departmental Representative and Contractor to inspect Work together and jointly identify defects and deficiencies.
 - .2 Contractor to correct any defects and deficiencies noted.
 - .3 Completion Certificate
 - .1 Submit written certification that tasks have been performed as follows:
 - .1 Work completed and inspected for compliance with Contract Documents.
 - .2 Defects and deficiencies corrected.
 - .3 Equipment and systems tested and fully operational.

.4 Final Inspection

- .1 When completion tasks are done, request final inspection of Work by Departmental Representative and Contractor.
- .2 When Work incomplete according to Departmental Representative, complete outstanding items and request re-inspection.

Part 8 Warranty Period

8.1 WARRANTY PERIOD

- .1 Conduct one (1) year warranty inspections, measured from time of acceptance, in conjunction with Departmental Representative.
- .2 Respond in timely manner to oral or written notification of required construction warranty repair work. Written notification to follow oral notification.
- .3 Failure to respond will be cause for PCA to proceed with action against Contractor.

END OF SECTION

PART 1 General

1.1 QUANTITIES

- .1 Except as specified below, Bidders are responsible for confirming all quantities required to prepare a complete and accurate Tender.
- .2 Quantities shown in the table below cannot be confirmed by Bidders prior to Tender.
 - .1 For these items of work, Tenders shall be based on the estimated quantities shown below.
 - .2 After contract award, unit prices corresponding to these quantities will be requested from the Contractor.
 - .3 Contract Price will be adjusted by Change Order to suit the actual quantities for these items using the unit pricing information provided.

Item	Total Estimated Quantity
Clearing	13.00 ha
Remove and Dispose of Existing Fence	12,000 m
New Fence – Supply and Install	12,000 m

- .3 Final payment to the Contractor will be made only for the actual quantities of Work performed in accordance with the Plans and Specifications as determined by measurements made by the Departmental Representative.

END OF SECTION

Part 1 General

1.1 DEFINITIONS

- .1 Clearing consists of cutting trees and brush vegetation down to within 100 mm of the ground and properly disposing of felled trees, previously fallen trees, stumps, and other vegetation or woody debris.

1.2 PERMITS AND REGULATIONS

- .1 Obtain applicable permits and follow applicable regulations and requirements of the Government of Saskatchewan and other authorities having jurisdiction.

Part 2 Execution

2.1 PROTECTION

- .1 Prevent damage to trees, natural features, bench marks, watercourses and root systems of trees that remain.
- .2 Repair any damaged items to approval of Departmental Representative.
- .3 If any trees designated to remain are damaged, replace as directed by Departmental Representative.
- .4 Take all necessary measures to ensure that trees do not fall into water bodies, wetlands or outside the clearing limits.
- .5 Do not work within 30 metres of water bodies or wetlands prior to consultation with the ESO and the Departmental Representative.
- .6 Trees inadvertently felled into water bodies, wetlands or outside the clearing limits shall be removed by non-intrusive means so as to not damage the substrate or any standing trees left outside the clearing limits. Machinery shall not go outside the clearing limits or into water bodies or wetlands to retrieve felled trees.
- .7 Convey removed material to temporary storage sites without the spread of debris and without causing damage to other standing trees or landscape resources outside the clearing zone or storage areas.
- .8 Do not skid material through water bodies or wetlands.

2.2 PREPARATION

- .1 Inspect site and verify with Departmental Representative items designated to remain.
- .2 Locate and protect utility lines. Preserve active utilities traversing site in operating condition.
- .3 Notify utility authorities before start of work.
- .4 Notify Departmental Representative immediately if unknown utility lines are encountered or if known utilities are damaged.
- .5 Keep roads and walks free of dirt and debris.

2.3 CLEARING

- .1 Clear within the area shown on Figure 2 and as directed by Departmental Representative.
- .2 Cut off branches overhanging cleared area as shown or as directed by Departmental Representative.
- .3 Cut off unsound branches on trees designated to remain that overhang in the clearing zone.
- .4 Cut branches at 90 degrees to the branch. Take care to not damage the bole of the tree during branch cutting.
- .5 Complete the clearing in such a manner that surrounding vegetation is preserved along the construction limits.
- .6 Cut stumps flush with ground and leave root structure and surrounding vegetative mat undisturbed.
- .7 No allowance will be made for cutting grain, grass, weeds, brush or shrubs within the clearing limits.
- .8 Refer to Best Management Practices “Vegetation Removal Mitigations Module”.
- .9 Keep ground disturbance to a minimum.
- .10 Off-highway mechanical equipment must have tire pressure of 7 psi or lower.

2.4 DISPOSAL

- .1 Material that is small enough to allow mulching shall be mulched and distributed over the cleared area.
- .2 Timber that is too large to mulch shall be salvage and neatly stacked in designated areas determined by the Departmental Representative.
- .3 The Contractor shall cut timber to a max length of 10 feet or as directed by the Departmental Representative.

2.5 CLEANING

- .1 On completion of work, remove surplus materials and excess materials, rubbish, flagging tape, tools and equipment.

Part 3 Measurement and Payment

- .1 Clearing and timber salvage will be measured in hectares based on the horizontal measurements. No allowance will be made for uneven or sloping grounds. Horizontal measurements will be calculated on the basis of the outlined sections as indicated on Figure 2.
- .2 Payment will be made at the unit price bid for “Clearing” and will be full compensation for all clearing and timber salvage operations and all labour, equipment, tools, materials, hauling and incidentals necessary to complete the Work to the satisfaction of the Departmental Representative.
- .3 Cutting grain, grass, weeds, brush and shrubs from within areas to be cleared will be considered incidental to the Work, and no separate or additional payment will be made.

- .4 Clearing of areas additional areas if required to access the Work shall be kept to a minimum and will be considered incidental to the contract. No separate or additional payment will be made for this Work.

END OF SECTION

Part 1 General

1.1 Not Used

Part 2 Products

2.1 MATERIALS

.1 Posts and Braces

- .1 Shall be sound quality fir or pine timber, free from all decay, stakes, splits, multiple crooks or any other defects which would render them structurally unsuitable for the purpose intended.
- .1 Post shall be peeled, pointed and domed before pressure treatment.
- .2 Posts shall comply with the minimum-maximum top diameter as shown on the Drawings. The 'top' of the post shall mean the same as the 'end' of the post. The length of the individual posts shall not vary by more than plus or minus 25 mm from the length specified.
- .3 Knots that are sound, well-spaced, smooth trimmed and which do not impair the strength of the posts or braces will be permitted provided they do not exceed 38 mm in diameter. Posts shall be naturally round and shall have all bark peeled or otherwise removed. Allowable taper in diameter from end to end of post shall not exceed 38 mm.
- .4 Posts and bracing shall be pressure treated using a chromated copper arsenate solution (CCA). Preservative treatment shall conform to the current requirements of CSA Standard 080 with specific attention to O80.1, O80.2 and O80.5.
- .5 Unless otherwise specified, surfacing, cutting and boring of preservative treated wooden posts and braces shall be completed before treatment. If field cutting or field repair of treated material is approved, all cuts and abrasions shall be carefully trimmed and coated with copper naphthenate preservative containing a minimum of 2.0 percent copper metal. The treatment preservative shall be applied according to the product label. Any excess preservative not absorbed by the wood member shall be cleaned from the surface prior to the use of the member.

.2 Two Strand Barbed Wire

- .1 Two strand barbed wire shall conform to the requirements of the current ASTM Standard A121 "Standard Specification for Metallic-Coated Carbon Steel Barbed Wire", Type Z, Grade 1 and shall consist of two strands of 2.5 mm thickness wire, twisted with four-point, 2.0 mm thickness round barbs spaced not more than 152 mm apart.
- .2 Each spool delivered to the job site shall be legibly marked showing the mass, linear measure, thickness and name or mark and address of the Manufacturer.

- .3 Two Strand Plain Wire
 - .1 Two strand plain wire shall conform to the requirements of the current ASTM Standard A641 “Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire”, and shall consist of two strands of 2.5 mm thickness wire, twisted together. High tensile wire shall not be used.
 - .2 Each spool delivered to the job site shall be legibly marked showing the mass, linear measure, thickness and name or mark and address of the Manufacturer.
- .4 Brace Wire
 - .1 Brace wire shall be 3.66 mm thickness [9 ga] soft galvanized wire and the weight of 30.5 m of wire shall not be less than 2.5kg (5.5lb/100ft).
- .5 Staples
 - .1 Wire staples shall be standard 40 mm long staples, manufactured from 3.66 mm thick galvanized wire. There shall be approximately 140 staples per kilogram.

Part 3 Execution

3.1 GENERAL

- .1 Fencing shall consist of supply and erection of wire fence, wire gates and related appurtenances in accordance with these specifications and in conformance with the dimensions, details and requirements shown on the Drawings.

3.2 REMOVALS

- .1 Completely remove the existing fence and properly dispose of offsite.
- .2 Salvage and reinstall all existing metal gates and associated hardware.

3.3 CONSTRUCTION

- .1 Erect new perimeter fence along the lines of the existing perimeter fence alignment.
- .2 Leave no openings in the perimeter fence outside of working hours.
- .3 Remove trees, brush and other obstacles which may interfere with the construction of the fence prior to commencing fence construction. Refer to Section 31 11 00 – Clearing.

3.4 POSTS

- .1 For posts that are not pointed, driven post shall be installed with the smaller diameter end down.
- .2 Post must be set perpendicular to ground (right angles to the fence wires).
- .3 Posts shall be driven in a manner that produces a satisfactory, uniform, undamaged product, and with the post firmly implanted into the soil to the depths indicated on the Drawings. If, in the opinion of the Departmental Representative, the results obtained from the proposed driving process are not satisfactory then the method shall be revised until satisfactory results are achieved.
- .4 Sharpening of post will not be permitted after the post has been pressure treated.

- .5 Intermediate bracing panels shall be erected in conformance with the maximum spacing requirements as shown on the Drawings and at such additional locations as directed by the Departmental Representative.

3.5 WIRE

- .1 All fence wire shall be pulled tight with hand stretchers, or tensioning apparatus capable of adjustment. The use of tractors or trucks for tightening the fence wire will not be permitted, unless the pull is controlled by adjustable tensioning apparatus.

3.6 GATES

- .1 Gates widths shall be between 3.65 meters (min) to 4.90 meters (max). If existing gates are outside of the min/max consult the Departmental Representative for preferred width.
- .2 Install new wire gates at existing gate locations. Approximate locations are identified on Figure 3.
- .3 Salvage and reinstall metal gates (and cattle guards, where applicable) at the existing locations.
- .4 All other gate locations shall be replaced with the same width of opening and constructed as shown on the Drawings.
- .5 The exact location and width of the new gate location will be as directed by the Departmental Representative.

3.7 CLEANING

- .1 Upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 11 00 – Summary of Work, Part 6.

Part 4 Measurement and Payment

4.1 REMOVE AND DISPOSE OF EXISTING FENCE

- .1 Payment will be made at the unit price bid per metre for “Remove and Dispose of Existing Fence”. This payment will be full compensation for removing and properly disposing of the fence and for all equipment, tools, labour and incidentals necessary to complete the Work.

4.2 NEW FENCE - SUPPLY AND INSTALL

- .1 Payment will be made at the unit price bid per metre for “New Fence – Supply and Install”, completed in place and including the construction and/or re-installation of gates. This payment will be full compensation for supplying all materials, constructing the fence and for all equipment, tools, labour and incidentals to complete the Work.

END OF SECTION