

**Part 1            The General**

**1.1                PRODUCTS IMPLEMENTED ONLY UNDER THE TERMS OF THIS SECTION**

- .1        This section treats relative requirements of the supply and stockpile of base courses materials.

**1.2                RELATED SECTIONS**

- .1        Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .2        Section 31 05 16 - Aggregate Materials.

**1.3                MEASUREMENT PROCEDURES**

- .1        Measure granular base materials in metric tons of material accepted by the departmental representative. The price must include supply, loading and transportation to the airport and stockpiling the material at the location designated by the departmental representative.

**1.4                TICKET WEIGHED**

- .1        Provide a ticket weighed in triplicate copies with each delivery of granular base materials to site.
- .2        Provide a copy of the certificate of conformity that the weight scale used meet the requirements of Statutes of Canada, Chapter 36, Weights and Measures Act 1970-71-72 and subsequent amendments.

**1.5                REFERENCES**

- .1        LC testing method of Transport Quebec laboratory.

**1.6                DELIVERY, STORAGE, AND HANDLING**

- .1        Delivering aggregates as and when they are needed in order to avoid creating piles on site.

**1.7                WASTE MANAGEMENT AND DISPOSAL**

- .1        Divert unused granular material as approved by the departmental representative.

**Part 2            Products**

**2.1                MATERIALS**

- .1        Granular base: material in accordance with Section 31 05 16 - Aggregate Materials and following requirements:
  - .1        Crushed stone or gravel.
  - .2        Gradations to be within limits specified when tested to LC 21-040. Gradation curve plotted on a semi-logarithmic diagram must be progressive and continue.
    - .1        Gradation to:

	Sieve Designation	% Passing MG 20 (MTQ)
	31,5 mm	100
	20 mm	90 – 100
	14 mm	68 – 93
	5 mm	35 – 60
	1,25 mm	19 – 38
	0,315 mm	9 – 17
	0,080 mm	2 – 7
.3	Intrinsic characteristic to following test :	
.1	* Methylene blue (LC 21-255) : $\leq 0,20$	
.2	Los Angeles (LC 21-400) : $\leq 50$	
.3	Micro-Deval (LC 21-070) : $\leq 35$	
.4	MD + LA : $\leq 80$	
.5	*Organic material (LC 31-228) : $\leq 0,8$	
	*for aggregates from sand or gravel pit.	

### Part 3 Execution

- .1 Stockpiling of the material must be done according to the requirements of section 31 05 16 – Aggregate materials.

**END OF SECTION**

**Part 1 General****1.1 SECTION INCLUDES**

- .1 Requirements for the repairs of wire and plastic fencing, gates, wood and steel posts used in the construction of wire fences.

**1.2 RELATED SECTIONS**

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

**1.3 MEASUREMENT PROCEDURES**

- .1 Fence repairs works description;
  - .1 Theses works consist in re-plumbing of rounded post, replacement of 'T' post driven into the soil, re-driving into the ground of 'T' post, the consolidation and repairs of wooden fence, the replacement of mesh section, the re-tie of mesh on the different frames and the rehabilitation of the barbed wire on all the perimeter fence of the airports
- .2 The fence repairs will be paid on an hourly rate controlled expenses tendered for the repairs crew,
  - .1 Repairs of existing wire fence, wooden fence and chain link fence will be measured and paid an hourly rate. The hourly rate must include a team of three men (fence installers), one foreman and all necessary tolls, vehicles, 4 wheels VTT, trailer, machineries and equipment required to the achievement of the works including cost for transportation, handling, administration fees and profit.
  - .2 The fences repairs works will be executed under the instructions and directives of the departmental representative. The contractor will prepare and submit for approval and signature of the departmental representative a daily detailed work order. Only the authorised works accompanied with a signed by the departmental representative work order will be taken into consideration in the calculation for payment.
- .3 The required materials for the repairs of fence are described inside the following list. The buying of theses materials will be paid as a lump sum. The must include the cost for transportation, handling, administration fees and profit

List of materials required for the fence repairs works.

Item No.	Unit of measure	Description
1	300 un.	Supply of galvanized 'T' post, heavy style for wire fence, length of 12', minimum weight of 1.43 lbs per feet.
2	20 un.	Supply of stiffening post; pipe diam. 88.9mm (3-1/2") x 12'-6" long , Schedule 40, wall of 0.216" galv.
3	20 un.	Supply of line post; pipe diam. 63mm (2-3/8") x 12'-6" long , Schedule 40, wall of 0.216" galv.
4	30 un.	Supply of top rail; pipe diam. 43mm (1-7/8") x 10'-6" long , wall of 0.145" galv.
5	25 un.	Supply of barbed wire arm for post diam. 88.9mm (3-1/2").
6	50 un.	Supply of barbed wire arm for post diam. 63mm (2-3/8").
7	200 un.	Supply of T-post piece barbed wire arm.
8	6 un.	Supply of wired fence game type, cal.12.5, vertical wire every 6'', in roller of 100m length, 72 inch height.
9	20 un.	Supply of tie for wire fence link fence on 'T' post, pack of 100 unit.
10	20 un.	Supply of tie for chain link fence, pack of 100 unit.
11	3 un.	Supply of barbed wire; 2 strand, 12.5ga class III, roller of 400m.
12	75 un.	Supply of 2"x4"x8 feet treated wood.
13	9 kg	Supply of galvanised twisted nail 3-1/2in. lenght.
14	50 un.	Single rail end diam.48.3mm (1-7/8")
15	30 m.	Bottom wire 5mm diam. galvanised
16	5 un.	Galvanised wire tie for bottom wire, pack of 100 unit
17	15 un.	Top rail sleeve for 48.3mm diam. pipe (1-7/8").
18	50 un.	Brace bands 88.9mm (3-1/2") diam.
19	50 un.	Brace bands 63mm (2-3/8") diam.
20	1 un	Double gate including complete industrial hinge, drop latch, latch catch and retaining chain. Total wide of the gate 4.87m x 1.8m height plus 0.3m for 3 rows of barbed wire = 2.1m total height.

**1.4****TOOLS AND MACHINERY**

- .1 The contractor shall provide all the necessary tools and machinery for the advancement and completion of the work.
- .2 The contractor must provide a chain saw and a clearing saw (bushman) to remove some bushes and shrubs in the route of the fence.

**1.5 SUBMITTALS**

- .1 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Manufacturer's Instructions:
  - .1 Submit manufacturer's installation instructions.

**1.6 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal, and with Waste Reduction Workplan.
- .2 Place materials defined as hazardous or toxic waste in designated containers.
- .3 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .4 Separate steel, metal and plastic for recycling and dispose of it in accordance with Waste Management Plan.
- .5 Handle and dispose of hazardous materials in accordance with Regional and Municipal regulations.
- .6 Divert unused concrete materials from landfill to local quarry or facility as approved by Departmental Representative.
- .7 Do not dispose of preservative treated wood through incineration.
- .8 Do not dispose of preservative treated wood with other materials destined for recycling or reuse.
- .9 Dispose of treated wood, end pieces, wood scraps and sawdust at sanitary landfill approved by the municipality.

**Part 2 Products****2.1 MATERIALS**

- .1 Wire fence:
  - .1 Farm-field type: to CSA G42, standard.
  - .2 Barbed wire: to CAN/CGSB-138.2, 2.5 mm diameter zinc or aluminum coated steel wire.
  - .3 stiffening and angle post; pipe diam. 88.9mm (3-1/2") x 12'-6" long , Schedule 40, wall of 0.216" galv Post.
  - .4 Line post; pipe diam. 63mm (2-3/8") x 12'-6" long , Schedule 40, wall of 0.216" galv.
- .2 Gates:

- .1 Frame: to ASTM A53, galvanized steel pipe, standard weight, 45mm outside diameter pipe for outside frame, 35mm outside diameter pipe for interior bracing.
- .2 Size: as indicated.
- .3 Joints: electrically welded.
- .3 Timber components: ACQ pressure-treated timber.
- .4 Timber posts:
  - .1 Sound, seasoned wood, 6" x 6"x12'.
  - .2 Bottom, top and middle rail 2"x4"x8'.
  - .3 Straight, free from splits, shakes and excessive knots.
  - .4 Existing knots trimmed flush with surface.
  - .5 Posts to be treated in accordance with CSA-O80.2 Series categories UC4.1.
- .5 Steel posts:
  - .1 Corner, end, gate and intermediate posts, projection arm with clips, corner and gate post braces, gate posts as indicated.
  - .2 Galvanizing: zinc coating, minimum 92 g/m<sup>2</sup> of surface area.
  - .3 Paint: to CAN/CGSB-1.69.
- .6 Gates: to CAN/CGSB-138.4.
- .7 Gate frames: to ASTM A53/A53M, galvanized steel pipe, standard weight 45 mm outside diameter pipe for outside frame, 35mm outside diameter pipe for interior bracing.
  - .1 Fabricate gates as indicated with electrically welded joints, and hot-dip galvanized after welding.
  - .2 Furnish gates with galvanized malleable iron hinges, latch and latch catch with provision for padlock which can be attached and operated from either side of installed gate.
  - .3 Furnish double gates with chain hook to hold gates open.
- .8 Touch-up; organic zinc-rich coating: to CAN/CGSB-1.181.

### **Part 3 Execution**

#### **3.1 FENCE REPAIRS**

- .1 Wire fence on 'T' post ;
  - .1 Replacement of damaged existing post installed in concrete base; remove the existing post, dig the hole to the deepening specified by the departmental representative, install the new post and backfill with granular material MG-20 and compact by pounding the gravel by layer of 100mm, keep the post levelled.
  - .2 Replacement of existing post driven into the ground; remove the existing post and drive into the ground a new one at the same location.
  - .3 Mesh section to be replaced; cut the mesh vertically at the post and install a new section and tie it to the post.
  - .4 Attach the mesh to the frame with tie.

- .5 Replace the broken and missing barb arm.
- .6 Install barb to the arms, replace missing an damaged section.
- .2 Wooden frame fence;
  - .1 Re-plumb the fences in adding braces and fix-it with piquet's installed into the ground in a manner to consolidate and solidify the fence.
  - .2 Changed the damaged brace by a 2x4 treated wood pieces.
  - .3 Nail the loosen plank to the frame.
- .3 Chain link fence;
  - .1 Replacement of installed in concrete base, damaged and can not be straightened; remove the existing post, dig the hole to the deepening specified by the departmental representative, install the new post and backfill with granular material MG-20 and compact by pounding the gravel by layer of 100mm, keep the post levelled
  - .2 Damaged top rail must be replaced.
  - .3 Straighten crooked post.
  - .4 Repair or replace broken pieces.
  - .5 Attach the mesh to the frame with tie.

### **3.2 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

### **3.3 CLEANING**

- .1 Perform cleaning as soon as possible after installation.
- .2 Clean and trim areas disturbed by operations. The surplus of material buy for the repairs of the fences will be left to the airport manager. Dispose of others surplus material.
- .3 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

**END OF SECTION**