1. GENERAL

1.1 RELATED WORK

.1 Section 31 24 13 – Roadway Excavation, Embankment and Compaction.

.2 Section 32 91 00 – Topsoil, Seeding and Sodding.

1.2 MEASUREMENT AND PAYMENT

.1 The supply and installation of wood fence will be measured in lineal metres of wood fence installed, removable panels, and other incidental work, for each height category, as specified within the Bid Forms. The unit price shall include the materials, equipment, tools, labour and supervision require to excavate, dispose of all waste/excess material, prepare the foundation, concrete works and temporary braces, backfilling, as well as the supply and installation of all posts, lumber, preservative, braces, rails, fasteners, hardware, and all other tasks deemed incidental to the Work.

.2 The supply and installation of wood fence gates will be measured in units installed for each type and size of gate, as specified within the Bid Forms. The unit price shall include the materials, equipment, tools, labour and supervision require to excavate, dispose of all waste/excess material, prepare the foundation, concrete works and temporary braces, backfilling, as well as the supply and installation of all posts, lumber, preservative, braces, rails, fasteners, hardware, and all other tasks deemed incidental to the Work.

2. PRODUCTS

2.1 MATERIAL

.1 Washed Rock: granular material with the following gradation:

Sieve Designation	% Passing
25mm	100
10mm	30-55
2.5mm	5-25
0.315mm	0-5

.1 Concrete Mix:
- .1 Portland Cement: to CSA A3000, and shall be Type HS high sulphate-resistant cement.
- .2 Water shall conform to CSA standard A23.1. Water shall be clean and free from injurious amounts of oil, acid, alkali, organic material or other deleterious substances.
- .3 Aggregates: to CSA-A23.1.
- .4 Air Entraining Admixture: to CSA-A23.1.
- .5 Chemical Admixtures: to CSA-A23.1.
- .6 Calcium Chloride: to CSA-A23.1.
- .7 Pozzolonic-Mineral Admixtures: not permitted for use in concrete.
- .8 Fly ash: to CAN/CSA-A3000, A3001 pozzolan type C.
- .9 Minimum compressive strength of 20MPa at 28 Days.
- .10 Maximum aggregate size of 25mm.

.2 Lumber:
  .1 Graded to the Canadian Lumber Standards and marked with a recognized, visible grade stamp.
  .2 Posts: 6" x 6" nominal size, 2.95m in length.
  .3 Rails:
    .1 Top and bottom: 2" x 6" nominal size, 2.4m in length.
    .2 Middle: 2" x 4" nominal size, 2.4m in length.
  .4 Fence boards: 5/4" x 6" x 6' rounded edge, 1. m in length.

.3 Dimension board lumber is to be graded to National Lumber Grades Authority (NLGA) Standard Grading Rules for Canadian Lumber and to CSA 0141-1970 and meet the following:
  .1 Maximum 19% moisture content at time of installation.
  .2 Lumber to be rough sawn to sizes noted on the approved drawings.

.4 Surface applied wood preservative:
  .1 Surface applied Cuprinol-Clear stain or approved equal wood preservative to all wood components.
  .2 Treat surface of components with wood preservative before installation.
  .3 Wherever possible apply preservative after components have been cut and fitted to size.
  .4 Apply preservative by dipping, or by brush or spray to completely saturate and maintain wet film on surface for a minimum three (3) minute soak on lumber.
  .5 Re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of surface applied wood preservative before installation.

.5 Fasteners:
  .1 Rail to post: #8 – 75mm deck screws.
  .2 Rail to fence board:
    .1 Middle rail: #6 – 50mm green deck screws.
    .2 Middle and end fence boards: #6 – 87.5mm deck screws.
  .3 Galvanized nails: galvanized to CSA G164.

3. EXECUTION

3.1 GRADING

.1 Remove debris and correct ground undulations along the fence line to obtain a smooth uniform gradient between posts. Provide a clearance between the bottom of the fence and the ground surface of 50mm.

3.2 CONCRETE FOOTINGS AND POSTS

.1 Excavate post holes to the dimensions shown on the Drawings, along the lines as indicated on the drawing or as directed by the Engineer.

.2 Space posts 2.4m apart on centre, measured parallel to the ground surface

.3 All posts shall be set in concrete and the concrete recessed 100mm below finished grade.

.4 Holes for footings shall be 400mm in diameter and excavated to a depth of 1050mm.

.5 Place washed rock at the bottom of the footing to a compacted depth of 150mm.

.6 Set the post in the concrete footing, plumb and true to line.

.7 Concrete for footings shall be 800mm in depth, shall be consolidated by interval vibrator or by rodding, and shall be allowed to set sufficiently before erecting the fence, a minimum of five (5) Days.

3.3 ERECTION OF FENCE

.1 Erect the fence along the lines as indicated on the Drawing or as directed by the Engineer.

.2 Excavate post holes to the dimensions shown on the Drawings.

.3 All work to be fabricated and finished as shown on Drawings.

.4 Members shall fit close and accurately together.

.5 Verify all dimensions on site prior to proceeding with fabrication.

.6 Whenever possible, members shall be precut prior to treatment. Site cuts are to be treated with two (2) coats preservative brushed in.

.7 Allow preservative to cure prior to erecting members.

.8 Ensure all fasteners are installed flush to fence slats.

.9 The wood fence shall provide a firm continuous structure. Finished unit should not utilize any cracked or damaged timber panels or posts.

.10 Height of fence panels to remain constant above grade.

.11 Difference in height of fence panel in relation to next panel due to grade change to be taken up at fence post between panels.

3.4 SITE CLEANUP

.1 Clean and trim any areas disturbed by operations. Dispose of surplus material.

END OF SECTION