

**RAMP CLOSURE GATES - Item No.**  
**CONCRETE IN RAMP CLOSURE GATE SUPPORT FOOTINGS - Item No.**

---

Special Provision No. 799S12

May 2013

---

**CONSTRUCTION SPECIFICATION FOR RAMP CLOSURE GATES**

**TABLE OF CONTENTS**

<b>1.0</b>	<b>SCOPE</b>
<b>2.0</b>	<b>REFERENCES</b>
<b>3.0</b>	<b>DEFINITIONS - Not Used</b>
<b>4.0</b>	<b>DESIGN AND SUBMISSION REQUIREMENTS</b>
<b>5.0</b>	<b>MATERIALS</b>
<b>6.0</b>	<b>EQUIPMENT - Not Used</b>
<b>7.0</b>	<b>CONSTRUCTION</b>
<b>8.0</b>	<b>QUALITY ASSURANCE</b>
<b>9.0</b>	<b>MEASUREMENT FOR PAYMENT</b>
<b>10.0</b>	<b>BASIS OF PAYMENT</b>

**1.0 SCOPE**

This Special Provision covers the requirements for the installation of ramp closure gates and ramp closure gate support footings.

**2.0 REFERENCES**

This Special Provision refers to the following standards, specifications and publications:

**Ontario Provincial Standard Specifications, Construction**

OPSS 501      Compacting  
OPSS 904      Concrete Structures

**Ontario Provincial Standard Specifications, Material**

OPSS 1350      Concrete - Materials and Production  
OPSS 1440      Steel Reinforcement for Concrete

## **CSA Standards**

HA.4-M1980	Aluminum and Aluminum Alloy Plate and Sheet
HA.7-M1980	Aluminum and Aluminum Alloy Drawn Seamless Tube, extruded Seamless Tube, and Seamless Pipe
W59.2-M1991 (R2008)	Welded Aluminum Construction
O80, Series-08	Wood Preservation
O141-05	Softwood Lumber

## **Others**

National Lumber Grade Authority (NLGA)  
Canadian Wood Preservers Bureau (CWPB)

## **4.0 DESIGN AND SUBMISSION REQUIREMENTS**

### **4.01 Submissions**

#### **4.01.01 Shop Drawings and Welding Procedures**

One copy of the manufacturer's shop drawings and welding procedures for each type of gate specified in the Contract Documents shall be submitted to the Contract Administrator. The applicable welding procedures, stamped as approved by the Canadian Welding Bureau, shall be attached to the shop drawings.

Installation of the ramp closure gate shall not commence until the Contract Administrator has received the copies of the shop drawings and welding procedures.

## **5.0 MATERIALS**

### **5.01 Aluminum Gates and Support Posts**

#### **5.01.01 General**

Extruded aluminum tubing for the ramp closure gate shall be 6061-T6 alloy according to CSA HA.7. Aluminum sheet and plate for the ramp closure gate shall be 6061-T6 alloy according to CSA HA.4.

Ramp closure gates shall be manufactured according to the Contract Documents and all joints shall be welded according to CSA W59.2.

#### **5.01.02 Marking of Gates and Support Posts for Identification of Manufacturer**

Identification plates measuring 50 mm high by 75 mm wide shall be tack welded to the outside face of the gate tube 150 mm below the top of the tube, and to the face of the support post 50 mm above base plate. The identification plate shall be made from minimum 1.5 mm thick aluminum sheet according to ASTM B 209. The identification plates shall be embossed with the following information:

- a) Name or trademark of manufacturer;
- b) Address of plant where manufactured; and
- c) Four digit code for year of manufacture and week number (e.g., first week of January 2012 is 1201)

## **5.02                      Wooden Support Posts**

### **5.02.01                  General**

All wooden support posts shall be in dressed sizes and pressure treated with wood preservative as specified in the Contract Documents. Cut ends and field drilled holes shall receive two applications of 2% copper naphthenate wood preservative. Field applied wood preservative that comes in contact with any metal components shall be removed immediately.

The tolerance on the cross-sectional dimensions of all wooden posts shall be  $\pm 2$  mm.

### **5.02.02                  Wood Preservative**

Wood preservative shall be according to CAN/CSA-O80, Series-08. Wood preservative treatment shall be according to UC 4.1.

### **5.02.03                  Marking of Wood for Identification of Grade and Species**

All wooden posts shall be stamped for species and grading according to CAN/CSA-O141 by an approved agency authorized by the NLGA. The stamp shall be visible after installation at least 1.8 m from the bottom of the post.

### **5.02.04                  Marking of Wood for Identification of Preservative Treatment**

All wooden posts shall be stamped for wood preservative treatment using a certification mark authorized by the CWPB. The wood preservative stamp shall be visible after installation at least 1.8 m from the bottom of the post.

## **5.03                      Fittings and Accessories**

All required fittings and accessories shall be made of aluminum unless otherwise specified in the Contract Documents.

Ramp closure gate latches and the steel chain to secure the double gate in the closed position shall be suitable for the use of padlocks with a 5/16" shaft which can be attached and operated from either side of the gate.

Padlocks will be supplied by the Owner.

## **5.04                      Concrete**

Concrete shall be according to OPSS 1350 with a nominal minimum 28-Day compressive strength of 30 MPa.

## **5.05                      Reinforcing Steel**

Reinforcing steel shall be Grade 400W according to OPSS 1440 and the Contract Documents.

## **7.0                        CONSTRUCTION**

### **7.01                      General**

Ramp closure gates, ramp closure gate support footings, and posts shall be installed according to and at locations specified in the Contract Documents.

## **7.02 Site Preparation**

Prior to the erection of the ramp closure gate, any debris shall be removed and ground undulations shall be corrected to obtain a smooth, uniform gradient.

Trees, stumps, and brush shall be cut off at ground level and any overhanging branches that would interfere with the operation of the gate shall be removed.

## **7.03 Post Installation**

Wooden support posts shall be installed plumb and set to the alignment and grade at the locations specified in the Contract Documents, regardless of the material encountered.

Acceptable material from post hole excavation shall be used as backfill around posts and compacted according to OPSS 501. Any excess materials not designated to be incorporated as backfill shall be managed as specified in the Contract Documents.

Wooden support post tops shall be cut to the height specified in the Contract Documents.

## **7.04 Ramp Closure Gate Support Footing**

The reinforced concrete footing shall be constructed as specified in the Contract Documents, regardless of the material encountered. Concrete shall be placed, cured, and finished according to OPSS 904.

In porous or crumbly soil, forms shall be used to prevent contamination of the concrete. Forms may be left in place or removed.

Earth backfill and granular materials shall be compacted according to OPSS 501.

## **7.05 Ramp Closure Gate Vertical Clearance**

The vertical clearance above the pavement shall be according to the Contract Documents.

## **7.06 Signs**

Signs shall be supplied by the ministry and shall be attached to the gates according to the Contract Documents using stainless steel hardware.

## **7.07 Management of Excess Material**

Management of excess material shall be as specified in the Contract Documents.

## **8.0 QUALITY ASSURANCE**

The Contract Administrator may request documentation and obtain and test components to ensure compliance with this specification.

The Contract Administrator may perform a visual inspection to determine conformance with the workmanship, design, and dimensional requirements of this specification, including but not limited to the following:

- a) All posts shall be true to alignment and plumb; and
- b) Gates shall move freely.

Material not in compliance shall be removed from the work area and replaced.

## **9.0 MEASUREMENT FOR PAYMENT**

### **9.01 Ramp Closure Gates Concrete in Ramp Closure Gate Support Footings**

Measurement is by Plan Quantity for the number of complete gates and gate support footings installed. The unit of measure is each.

## **10.0 BASIS OF PAYMENT**

### **Ramp Closure Gates – Item Concrete in Ramp Closure Gate Support Footings – Item**

Payment at the contract price for the above tender items shall be full compensation for all labour, equipment and material necessary to do the work.