LESSARD WELDING

RESOURCE ACCESS BRIDGES
Single Lane – Four Stringer Type – 16’ wide

- **Designed for Low Volume Roads**
  CL-625 Ontario Truck Design - CHBDC CAN / CSA-S6-14
- **Design meets the 2008 MNRF Crown Land Bridge Management Guidelines**
- **Economical bridge solution - ideal for longer span crossings**

INFORMATION GUIDE

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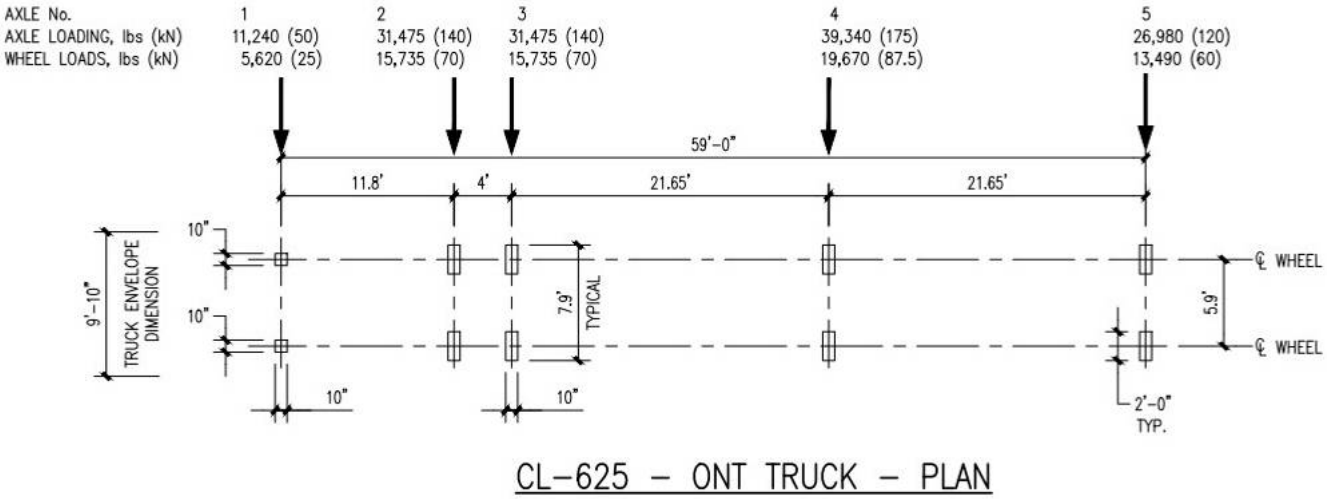
What are these bridge superstructures designed and certified for?

Our Stringer Bridge Superstructures are designed and certified for the Ontario CL-625 vehicle wheel loading as required by the Canadian Highway Bridge Design Code (CHBDC) CAN/CSA-S6-14. In accordance with code, the design is sealed by two professional engineers, verifying compliance with the CHBDC.



CL–625 – ONT TRUCK – PLAN

This product is designed for ease of installation and use on low volume roads. This product is also certified to meet the standards identified in the Ministry of Natural Resources and Forestry (MNRF) "2008 Crown Land Bridge Management Guidelines".

Can Lessard bridge superstructures be used for temporary and/or permanent applications?

Our bridges comply with both the Canadian Highway Bridge Design Code (CAN/CSA-S14) and the Ministry of Natural Resources and Forestry 2008 "Crown Land Bridge Management Guidelines" and can be used for as either a temporary or permanent bridge crossing.

What do I need to know about the bridge substructure (abutments/cribbing)?

Lessard Stringer Bridges are generally compatible for use with all MNRF standard wooden crib substructures. On Crown Land, The Ministry of Natural Resources and Forestry may require a professional Engineer to submit a sealed plan with specifications of any substructure to be used. Likewise, a professional Engineer may be required to certify the installation of a new Lessard Stringer Bridge product being installed on an existing MNRF substructure. The Ministry may also require the Engineer to submit a detailed condition evaluation of the existing substructure as part of their approval.

All bridge substructures must provide 24" (600 mm) of continuous support under the bridge at each end of the bridge. We also offer custom fit solutions to fit the Lessard Stringer Bridges between **existing abutments**, however, the same requirements to engage an Engineer (as noted above) to inspect and certify the existing abutments would be required. Exact measurements are required and must be submitted at the time of order.

How does the Lessard Bridge Superstructure's design make life easier?

a) SAFE AND DURABLE DESIGN

Lessard Stringer Bridge Superstructures are professionally designed with safety in mind. Our heavy-duty design consists of individually shipped steel stringers, connecting diaphragms, and diagonal bracing for even greater stability. All structural steel used in Lessard Welding bridges is certified to be NEW.

Stringer bridges have modular decking consisting of 3/8" (10 mm) thick steel checker plate supported by small structural 'I' beams at approx. 9" (233mm) centers. This deck reinforcing prevents checker plate deformation and distributes vehicle loads across each steel stringer.

The prefabricated deck panels come in deck surface widths of either 13'-4" (single lane - 3 stringer bridge) or 16' (single lane wide - 4 stringer bridge). The deck panels are 8' long and include steel curbs and post pockets for guide rail (not included).

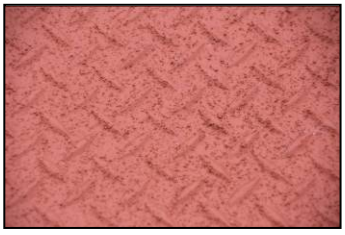
b) SIZE AVAILABILITY

Our stringer bridges are available in multiple bridge lengths. The components are shipped individually making them easy to transport, handle and install.

Superstructure Dimensions for a Typical Four Stringer Type Bridge – 16' wide						
Length	40 ft.	48 ft.	56 ft.	64 ft.	72 ft.	80 ft.
Height	35"	38"	41"	44"	47"	52"

c) HIGH PERFORMANCE COATING AND ANTI-SLIP SURFACE

To ensure proper adhesion of paint and non-slip coatings, all main stringer beams are cleaned and shot blasted in accordance with SSPC-SP 6 industry standard. We also apply a high-performance red oxide primer to the entire structure including underneath the bridge. In addition, as part of the painting process, a dense grit product is added to help prevent workers from slipping and falling during construction and provides additional tire traction after installation.



If the bridge is to be installed in a corrosive (mining, mineral processing) environment other additional protective coating options should be considered. We are prepared to work with clients on a one-on-one basis to determine the coating options available to meet their needs.

d) DECKING

Our modular bridge decking is designed to ensure a level and uniform surface between bridge sections. Compared to a timber deck, a steel deck offers significant savings in maintenance (labor and wood) over the lifecycle of the bridge. With proper substructure planning, heavy traffic moves smoothly across the structure. Impact loading caused by uneven surfaces can significantly reduce the lifespan of bridge stringers. An even surface will also minimize or eliminate damage caused by plowing and grading operations. Since the sections are fabricated with precision, the gap in between the two sections is very small (+- 1/8") and will reduce or eliminate road materials from entering the water body below or collecting on lower flanges of the center beams.

e) STRUCTURAL GRADE BOLTS

These are included with every bridge. Light oil or a product like "Never Seize" should be applied to the bolts during installation to ensure long term maintenance.

f) POST POCKETS

When required, our 8 x 8 guard rail post pockets are bolted to the structural curb member to provide better performance and reduced maintenance costs. The pockets are spaced in accordance with OPSD requirements for posts for guiderail (if required).

g) STRUCTURAL STEEL CURBS

The Occupational Health and Safety Act identifies (R.R.O. 1990 Regulation 851, Section 118) requires the installation of a curb on all haul roads with a minimum height of not less than 15cm. Our unique modular deck sections include a structural steel curb - thereby eliminating the installation and maintenance costs of a conventional wooden curb. This allows our bridge superstructures to be used in uncontrolled traffic areas.

h) EASY TO INSTALL

Installation of a Lessard Stringer Bridge is simple and straightforward. All components shipped are clearly marked/identified by part numbers that must be installed in correct sequence. When receiving the bridge, sort the parts by part type and sequential part number, this will be useful later in correctly installing the bridge.

Once the substructure has been completed, connect the diaphragms (hand tight - to allow some movement) to the interior stringer(s) using the structural bolts provided and lift and place the stringer(s) into position. Block/brace the interior stringer(s) and then lift and place each of the exterior stringers. Connect the end diaphragms (hand tight - to allow some movement) at each end between the interior and exterior stringers.

Following stringer installation, modular deck panels can be temporarily installed and used as work platforms to install the diagonal stiffeners. After all structural members have been installed, tighten and torque all connecting bolts. All modular deck sections are numbered and must be installed in numbered sequence for the best possible fit. Once the main superstructure has been completed in its entirety - we recommend carrying out a final check and retightening of all structural bolts to ensure they are snug. After completing the superstructure installation, all guide posts, barriers and signs (as per site specific engineering design) must be installed.

i) PRE-ASSEMBLED IN SHOP

As part of the fabrication process and quality control, our stringer bridges are shop assembled before shipping to ensure each section is an exact match and that assembly in the field is hassle free.

j) PRE-DRILLED ANCHOR HOLES

Each main stringer beams have pre-drilled anchor holes at each end. One end has round (fixed) holes and one end has slotted holes that allow for the expansion and contraction of the bridge superstructure caused by heat and cold temperatures. Anchor bolts are NOT provided as it depends on the engineered abutment design required.

k) UNIQUE IDENTIFICATION NUMBER

Every Lessard Stringer Bridge has its own unique identification number for easy record keeping purposes (required by the 2008 OMNRF Crown Land Bridge Management Guidelines). During fabrication, an identification plate is welded to the outside stringers. The ID plate provides a unique bridge identification number and the weight of the bridge component. We maintain an up to date database for all fabricated bridges and can provide owners and customers of fabrication dates, original purchaser, date of purchase and other related information.

What are the upgrades or options available to purchase with the bridges?

All the following upgrades or options come at an extra cost, we would be more than happy to provide you with a cost estimate upon your request.

a) SPECIALTY COATINGS

Mining, mineral production and chemical processing customers may require a different (additional corrosive protection) type of coating than our high-performance red oxide primer. In this case, customers must provide specifications of the coating product they require - so that we may confirm whether we can provide the coating product and what the extra cost would be.

b) BRIDGE DELIVERY

Shipping costs are NOT included in the price of our bridges, but delivery is available for an additional cost. Special MTO permits may be required depending on the bridge dimensions.

If you are PICKING UP your bridge…

- You will need **two trucks** to pick up your Stringer Type Bridge.
- You will need to inform us ahead of time of the date and time you plan on picking up your bridge as we may need to make special lifting arrangements to load the bridges.
- Flatbed trailers are the preferred type of trailer for us to load your bridges. If you don't plan on using a flatbed trailer, we will likely encounter loading challenges and therefore you must communicate with us prior to the shipping date to discuss your plan, otherwise you may risk the possibility of NOT getting loaded at all or having to wait for a crane to come on site which could lead to a loading charge of approximately 1000$.
- Uneven deck type trailers such as goose necks are acceptable but must be equipped with blocks to level off the loaded bridge.

If WE ARE SHIPPING your bridge…

- You will need to inform us ahead of time of the date and time delivery is required.
- You will need to send us by email a site address, map or driving instructions as well as a site contact.

What are the maintenance requirements?

Simple maintenance can dramatically extend the lifespan of a Lessard Stringer Bridge. Recommended maintenance activities include the following:

- Routine visual inspections to confirm that the bridge is fully supported at each end by a level and sound substructure.
- Removing gravel buildup on the steel deck and bearing seats. Gravel by itself is abrasive to painted surfaces and in larger volumes can retain water that will accelerate surface rust.
- Store bridge components horizontally, cover them if possible and elevate them on blocks. The blocking will ensure that the bridge stringers do not come in direct contact with standing water.
- Use only the lifting locations identified to move the bridge and its components. Lifting at other locations may damage flanges, decking and guard rail pockets.
- Power wash bridges in storage to remove accumulated soil materials.
- Store smaller bridge parts (bolts, washers, nuts and plates) in an interior location.
- Greasing or oiling all bolts, washers and nuts is advisable.
- Maintain a bridge file with original bridge drawings and update with maintenance records.

What is the design life of this type of bridge?

Our single lane - Resource Access Stringer Bridge superstructure is designed for a 40 year service life, however poor site design, installation, mishandling, overloading and lack of maintenance may impact it's service life. As well, re-coating of the bridge and/or touch-ups may be required during its service life due to normal wear and tear, excessive use by track based equipment, vehicles with chains, corrosive environments and frequency of flood (overtopping) events. Good record keeping, annual inspections, minor maintenance (removal of loose gravel from deck, replacing signage, repair of curbs or barriers) are all recommended.

What kind of experience does Lessard Welding have?

Established in 1974, Lessard Welding has **over 40 years of experience,** the expertise and the resources to deliver a wide range of high-quality welding products - including bridges. There are over 600 Lessard Bridges currently in service in North America. We also provide custom welding services and products to the mining industry.

We are family owned and operated with a reputation that matches our experience. We also offer bilingual services - from ordering products to continued technical support.

What certifications does Lessard Welding have?

Premier Fabrication Standards and Quality Control are built into every Lessard Stringer Bridge Superstructure. Lessard Welding is certified to CSA Standard W47.1 in Division 2 by the Canadian Welding Bureau and maintains a superior Quality Management System which complies with the requirements of the ISO 9001:2015 standards.

CWB cwbcertification CSA W47.1

Certified System ™ ISO 9001 QMI-SAI Global # 001723

Contact Information

If you have any other questions, please feel free to communicate with us at any time!

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