

LESSARD WELDING

MUNICIPAL BRIDGES Single and Double Lane - Modular Type



- Certified to comply with the *Canadian Highway Bridge Design Code CHBDC CAN / CSA-S6-14*
- Designed for use on Low Volume Roads in Ontario using the CL-625 Ontario Truck
- Certified to meet all requirements of the 2016 MTO standard: "*Exceptions To The Canadian Highway Bridge Design Code, CSA S6-14, for Ontario*"
- Bridge Post Pockets meet the requirements of the MTO TL-1 barrier system
- Design exceeds the 2008 MNRF Crown Land Bridge Management Guidelines

INFORMATION GUIDE

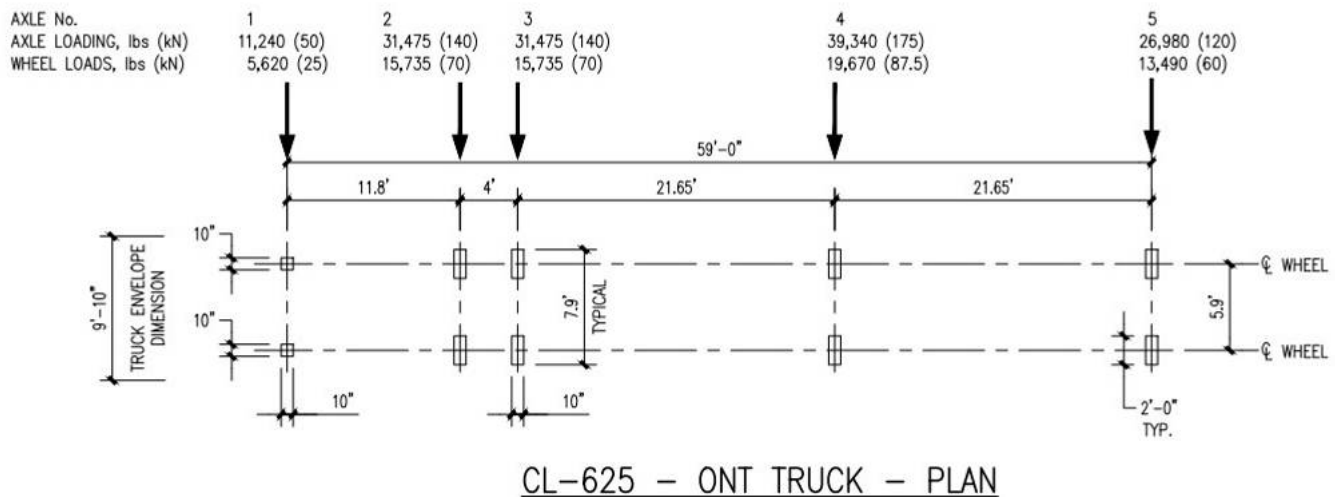
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What are these bridge superstructures designed and certified for?

Lessard's Municipal Modular Bridge Superstructures are designed for use on Low Volume roads and certified for the **Ontario CL-625 design** vehicle wheel loading as required by the **Canadian Highway Bridge Design Code (CHBDC) CAN/CSA-S6-14**. Our detailed design is sealed by two professional engineers (designer & approver) verifying compliance with code requirements.

Our product line of Municipal Modular Bridges also **meets the 2016 MTO standards** identified in the **"EXCEPTIONS TO THE CANADIAN HIGHWAY BRIDGE DESIGN CODE, CSA S6-14, FOR ONTARIO"**.

All Lessard Modular Bridges designed to meet CHBDC requirements are also certified to meet the standards identified in the Ministry of Natural Resources and Forestry (MNRF) "2008 Crown Land Bridge Management Guidelines". These modular bridge superstructures are designed for ease of installation and use on low volume roads.



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

All bridge substructures must provide 12" (300 mm) of continuous support under the bridge at each end of the bridge. On new or existing concrete abutments, steel bearing plates with elastomeric pads are recommended to eliminate steel movement and vibration directly on concrete surfaces

Lessard Welding offers custom fit solutions to fit the Lessard Modular Bridges between **existing abutments**, however, the existing abutment must be inspected by a Professional Engineer and approved prior to installation. Exact measurements are also 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

The Lessard Bridge Superstructures are professionally designed with safety in mind. Our heavy-duty design consists of 2 or 3 separate sections. The girders are reinforced with heavy steel diaphragms which provide lateral support during loading. Bridge decking consists of a 3/8" (10 mm) thick steel checker plate that is supported across all steel stringers by structural channels at 12" (300 mm) centers. The reinforcing prevents checker plate deformation and distributes vehicle loads across each steel stringer. All structural steel used in Lessard Welding bridges is certified to be NEW.



b) SIZE AVAILABILITY AND LOW PROFILE

We offer multiple bridge lengths together with a low structure profile that can be easily transported on a flatbed tractor trailer and are easily handled and installed. Our single lane bridges are available in a 15' 4" width (2 sections of 7' 8" wide) and a 20 ft. width (2 sections of 10 ft. wide). Our standard double lane bridges are assembled using three sections and have a total deck width of 24' 8". Custom deck widths and bridge/pedestrian walkway options are also available - please contact us for more details.

Our modular bridge products are available in lengths up to 60 ft as per the table below.

Typical Superstructure	20 ft.	30 ft.	40 ft.	50 ft.	60 ft.
Height	18"	22"	25"	28"	31"
Actual Length (tip to tip)	20' 8"	30' 8"	40' 8"	50' 8"	60' 8"

c) TAPERED OR SQUARE ENDS

Our bridges are manufactured with either a tapered or square end at no additional cost.



Tapered Ends

Tapered end bridges are excellent for use in temporary installations where gravel can be tapered up and onto the bridge and prevents exposed ends that could be damaged during snow plowing operations.

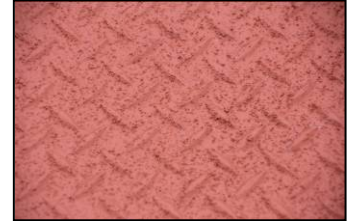
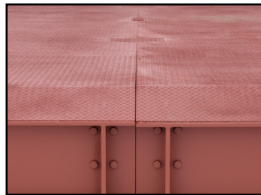
Square end bridges are best suited for use on permanent installations with abutments where an exact elevation match is required. They are also well suited for municipal and urban settings where roads are currently paved.



Square

d) 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 provide increased tire traction after installation.

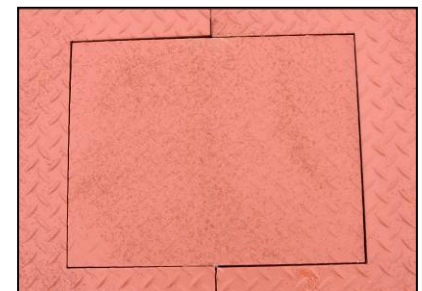
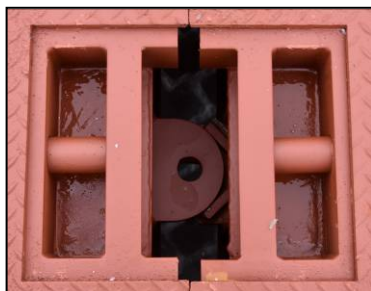
**e) DECKING – STEEL CHECKER PLATE**

Our modular bridge decking is designed to ensure a level and uniform surface between bridge sections. 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 bridge sections are fabricated together 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.

**f) DECKING ACCESS POINTS AND WEIGHTED COVER PLATES**

There are access points or "cut outs" in the surface of the decking to allow installers to bolt the two sections together. Weighted Cover Plates are provided to ensure all openings are well covered and that the deck surface remains level and flush. We recommend using high strength construction adhesive to secure the cover plates following installation. Cover plates and cutouts are uniform in size and are interchangeable.



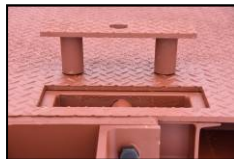
g) PULLING LUGS

There are (8) Pulling Lugs pre-welded to each end of each section for a total of (16). These lugs are reinforced to provide safe lifting and pulling locations for easy bridge installation.



h) LIFTING LUGS

There are (4) recessed Lifting Lugs welded within the deck surface. We also provide (4) Load Rated Lifting Slings for your convenience. These lifting locations are ideal for loading, offloading and bridge installation.



i) TIE DOWNS AND TIE DOWN GUIDES



The Tie Downs are used to align and connect bridge sections together. The Tie Down Guides are small pieces of angle welded to the top of the Tie Downs of section #1 (as shown in photo) to ensure quick and easy alignment with the adjoining bridge section. When aligning both sections together, we recommend using a larger steel pull/crow bar to align the holes perfectly and to keep hands away from the connection while moving bridges. Once aligned, Tie Downs are easily and safely access by hand from the bridge deck - simply insert a bolt into the predrilled hole.

j) NUT LOCKING BARS



Once the bolts are inserted into the holes of the tie downs, simply position the nut underneath the tie down and start tightening the bolt by hand with 1 complete turn. Once the bolt has been started the locking bar will hold it in position - allowing it to be tightened to the required torque using a socket on the bolt top from above the deck.

k) 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.



l) BOLTED POST POCKETS – Field Installation Required

Our guard rail post pockets are bolted to the superstructure to provide better performance and maintenance (replacement). They also meet the anchoring requirements of the TL1 Barrier standard identified in the 2016 "Exceptions To The Canadian Highway Bridge Design Code CSA S6-14, For Ontario". The pockets are spaced in accordance with OPSD requirements for posts for curbs and/or guiderail (if required). The post pockets can be installed in a matter of minutes. We recommend installing the post pockets prior to bridge placement when they are easily accessed on the ground or on the delivery truck. Installing them before installation eliminates the need to suspend and install them over open water.



m) EASY TO INSTALL

Installation of a Lessard Modular Bridge is simple. Each bridge section is clearly identified by "Section" as either “Section 1” or “Section 2”. Bridge sections are typically delivered to the site one on top of each other with guard rail pocket fastening locations on each section on different sides of the trailer. This small loading detail allows the installer to offload the superstructures and assemble them without having to rotate them 180° into position.



Shorter span structures (20ft to 30ft) can be easily lifted into position one at a time with either a small crane or medium sized track excavator. After the first section is placed, the second section is lined up with the first and nudged into position until the bolt holes from the Tie Downs line up. Supplied connection bolts are then used to join both sections. After connections have been made, the bridge can be adjusted slightly to ensure correct orientation and square with substructure bearing.



Bridge Specifications

A single lane bridge (15' 4" wide) consists of two (2) sections. The table below provides overall dimensions and weights for each section. Please contact us for detailed information on 20 ft. wide single lane and double lane bridges.

Dimensions and Weight per Section for a Single Lane Bridge (15' 4" wide)				
Bridge Span	Actual Length (from tip to tip)	Width	Height	Weight (lbs)
20 ft.	20' 8"	7' 8"	18"	6,500
30 ft.	30' 8"	7' 8"	22"	11,200
40 ft.	40' 8"	7' 8"	25"	17,360
50 ft.	50' 8"	7' 8"	28"	24,800
60 ft.	60' 8"	7' 8"	31"	34,350

n) **PRE-ASSEMBLED IN SHOP**

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

o) **PRE-DRILLED ANCHOR HOLES**

Each bridge section has pre-drilled anchor holes at each corner of the end beams. 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. We recommend fastening each corner of each section to the bridge substructure. Anchor bolts are NOT supplied since the size and anchoring type are specified by the bridge design engineer.



p) UNIQUE IDENTIFICATION NUMBER

Every Lessard Modular bridge has its own unique identification number for easy record keeping purposes. During fabrication, an identification plate is welded to the outside stringers of each bridge section. The ID plate provides a unique bridge identification number, the section no. and the weight of the bridge section. 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.



q) INTERNAL QUALITY CONTROL INSPECTION

In accordance with our high-quality control standards, every bridge fabricated by Lessard Welding is thoroughly inspected to ensure completeness and adequacy of fabrication in accordance with the sealed drawings.

r) BRIDGE DOCUMENTATION

Customers receive bridge documentation for each individual bridge.

1. Sealed General Arrangement Drawing

All customers receive sealed general arrangement drawings that provides basic measurements and assembly information for the product purchased.

2. Certificate of Conformance

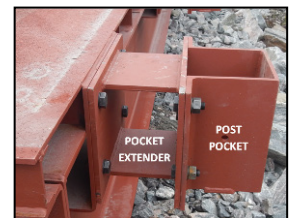
All customers receive a certificate of conformance for their specific bridge. An engineer performs a certified inspection to ensure completeness and adequacy of fabrication in accordance with the detailed drawing as designed and approved by the bridge designer.

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.

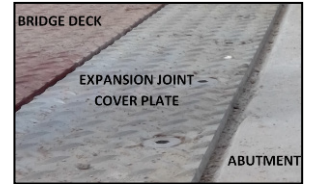
a) POST POCKET EXTENSIONS

Post pocket extensions are used in cases where clients want to take advantage of the full bridge deck width - but want to use a standard timber, blocking and flex beam guiderail configuration. The pocket extenders move the post position away from the bridge by 11", thereby ensuring that when blocking and guide rail are added they do not encroach onto the bridge deck.



b) EXPANSION JOINTS

Our bridge superstructures can be fabricated to accommodate standard MTO expansion joints. Contact us with your specific requirements for more information on this option.

**c) 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.

d) 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 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.
- Logging trailers with pickets are acceptable, however, please note, that pickets will need to be removed by the driver on the one side. Please note that you may not be able to put the pickets back into place afterwards due to where the bridge pockets line up on the trailer.
- Please know that it is possible to ship more than one bridge on one truck depending on the quantity and spans ordered.

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.
- Please know that it is possible to ship more than one bridge on one truck depending on the quantity and spans ordered.



MUNICIPAL BRIDGES

Single and Double Lane - Modular Type

Tel: 705-855-3480 Toll Free: 888-234-3687

What are the maintenance requirements?

Simple maintenance can dramatically extend the lifespan of a Lessard Modular 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 portable bridges horizontally 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 a modular portable bridge. 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.
- Periodic sandblasting and painting of bridges in storage is also 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 - Municipal modular superstructure is designed for a 75 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 45 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 Modular 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.



ISO 9001
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Contact Information

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

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