

## Our Grandfather's Roads

In Southwest Ontario, the Municipality of Chatham-Kent has a long history in agriculture and trade. The Chatham dockyards (est.1790) supplied food stocks and implements to the British Navy's Lake Erie fleet and Tecumseh's large tribal confederacy throughout the War of 1812. It was here on Oct 5, 1813 at the Battle of the Thames that Tecumseh was killed while waiting for reinforcements to come by road from distant Fort Burlington. The road was poor, the reinforcements didn't come and our history took a turn. During the same period Colonel Thomas Talbot organized the development of the Region. He stipulated that all persons who received land must construct and maintain a road in front of their farm within three and a half years of settlement. By the late 1820s he had linked the roads and organized the completion of a 480 km long good quality road, the Talbot Trail, running from Lake Ontario to the Detroit River. This helped to make the Talbot Settlement the most prosperous part of Ontario. Since then the roads have improved. Two hundred years later Chatham Kent continues to find innovations in road construction and to produce high quality meats, fish, fruits, maple syrup and vegetables that are shipped by road to markets throughout North America.

As agriculture and roads have modernized Chatham-Kent industries have not only kept up but have lead the way with new developments. In 1878 E.S.Hubbell, a young tin-smith, established a hardware and metal fabricating business in Thamesville. The business thrived and continues to support farming and road-building into the fifth generation of Hubbells. In E.S.'s time, roads were corduroy and bridges were simple wooden structures. Culverts were typically of wood stave construction. In the early 1930's his sons embraced the modern technology of corrugated steel pipe (CSP) and established a steel culvert manufacturing facility. Early CSP was made by hand riveting galvanized and corrugated sheets together.



GLEN A HUBBELL WITH 9.75 M LONG RIVETED CSP (CIRCA 1949)

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Today the company produces high volume, high quality spiral pipe on modern equipment in a variety of corrugations and coatings.

Some of the oldest corrugated steel pipe in Canada was installed in Chatham-Kent as culverts and bridges were replaced on the development roads. An extensive network of drainage canals created the need for many crossings as they allow farmers to work this flat fertile land early in the season. As this is the most southerly part of Canada, high heat units coming early in the season means crops from here are the first to appear in the market each year.

Intense farming, fertilizers, flat terrain, standing water, road salt on paved roads and general growth in the Region have all created unique challenges for road designers and builders. Many of the early roads, culverts and bridges are reaching the next phase of their natural service life and must be upgraded or replaced. The replacements however must safely handle larger farm equipment, heavier and faster trucks and considering the significant investment and complexity of new infrastructure must be sustainable over a longer period of time.

One of the ways that Chatham-Kent has met the demands is by embracing new technologies in CSP. Deeper corrugations and thicker steels have made it possible to construct economical wide span and low profile box culvert shapes that fit the challenges of flat terrain and heavy loads. Polymer laminates and polymer coatings on steel have dramatically increased the service life of culverts often affected by fertilizers and salt.

In the winter of 2009-2010 five structures along a scenic stretch of the Talbot Trail (HWY 3 from Blenheim to Eatonville) required replacement having reached the end of their life cycle. The commencement of bridge projects is typically subject to the receipt of approvals from the Department of Fisheries and Oceans (DFO), Coast



**POLYMER COATED STRUCTURAL PLATE 5890 SPAN X 3710 MM  
PIPE-ARCH UNDER THE TALBOT TRAIL**



**POLYMER COATED STRUCTURAL PLATE 3730 SPAN X 2290MM  
RISE PIPE-ARCH**



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Guard, Conservation Authority and other agencies to ensure the overall interests of the community are identified. All permits and approvals were met for this project and as DFO required that all "in water work" must be complete by March 15, 2010 a precise and rapid construction plan that could be implemented in winter, was necessary. Large diameter polymer laminated corrugated steel pipe (CSP) and polymer coated structural plate corrugated steel pipe (SPCSP) were selected for the replacement structures largely for their installed economy. The contract for the five structures which was largely funded by the citizens of Chatham-Kent was in fact awarded at a price 31% lower than the engineers estimate. All structures are expected to still be performing when the Talbot Trail celebrates its 300th Birthday several more generations from now.

A road is not static but changes and evolves reflecting the times, needs and values of those who pass along it.



NATURAL GRAVEL IN-FILL OF POLYMER COATED STRUCTURAL PLATE PIPE-ARCH



LARGE 3000 MM DIAMETER POLYMER LAMINATED CORRUGATED STEEL PIPE ON MCKAY DRAIN