

Township Rebuilds one of Canada's Oldest Structural Plate Corrugated Steel Arches

"Wood Bridge" is an unfortunate name for an historic Structural Plate Corrugated Steel Arch (SPCSA). It was named, as most bridges were at the time, not for its material or construction style but for the adjoining landowner. Herbert A. Wood died in 1933 and the bridge was built the next year. William Wood took over his father's farm and, as was the practice at the time, became responsible for maintaining the adjoining road and the bridge.

This is the second time that CSPI has reported on this bridge. A photo of the bridge, taken in 1934, triggered both reports. Most recently, Janice Hughes, an antique hunter and long time CSPI member, found a photo of the bridge in a second hand shop. Initially she resisted but was drawn back to buy the photo. The asking price of \$50.00 was negotiated down to \$12.00 due to the cracked glass. She has since sold the photo to a collector for an undisclosed amount.

The "Wood Bridge" was built in 1934. This year marked the toughest times of the Great Depression when money and jobs were in short supply. The original wooden bridge at the site was found to be in poor condition and the road required realignment. (The Ontario Unemployment Relief Fund had offered the township \$1,125.00 to stimulate employment. This money was to cover two thirds of the total costs of roadwork budgeted for the year. The Ontario Department of Highways committed to pay 40% of the balance leaving the township responsible for \$337.50).

Tenders were called with an August 31st closing for a new concrete bridge. "By 1920 at least a half dozen companies in Wellington were building concrete arch bridges." *. The bids came in at \$5.50 to \$8.50 per cubic yard for concrete with the rate for a man, mixer and forms being \$20.00 per day and supervision at \$2.20 per hour. All bids were found to be too high and rejected.



SEVENTY YEAR OLD "WOOD BRIDGE" PRIOR TO RECONSTRUCTION

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On September 21, 1934 at a Special Meeting the township council decided to build the bridge by contract. They purchased, a recently introduced product, Structural Plate Corrugated Steel Arch, from Canada Ingot Iron Company Ltd. of Guelph. Records and notes on the photo suggest they paid \$800.00 for a turnkey installation that was completed within a month. Consulting engineers "Wynne-Robert & McLean were paid \$39.40 for inspecting, plans and specifications for the bridge."

Although no newspaper account of the bridge was found, the November 1, 1934 Fergus News Record reported that a 15 year project to pave all of highway 6 from Port Dover to Owen Sound was now complete. It also reported that the stretch from Guelph to Arthur, not far from the bridge site, was heavily traveled at the time.

Originally owned by Eramosa Township the bridge was transferred to The Township of Centre Wellington as part of the amalgamations that occurred in 1999. It is one of 104 bridge structures in the township. Director of Public Works, Ken Elder, reports that he suspects that he has more bridges than any other township in Canada. Many are at the end of their design service life, some are closed and many have historical significance. It will take \$34,000,000.00 (2003 dollars) to bring all of them up to today's standards. Innovation and economy in bridge building is as critical today in Centre Wellington as it was 70 years ago.

Unfortunately the historical significance of "The Wood Bridge" was lost in the municipal amalgamation. Had the Township of Centre Wellington known the historical significance, the old arch may have been extended rather than replaced.

Economics and proven performance made replacement of the existing arch with a new SPCSA a logical decision. The new arch is the same span as the original but lon-



AS BUILT PHOTO FROM 1934



ORIGINAL INKED LETTERING STILL LEGIBLE ON PLATE

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ger at 16.5 metres with ends beveled at a 1 to 1 slope. The new steel is 4mm thick compared to the original 7mm material. Years of experience, better backfill materials, equipment and standards show this to be a safe, durable and practical design. Low traffic volumes and reasonable detour alternatives made it possible to close the road for demolition and construction. Total demolition eliminated the need to protect the original steel and footings and allowed heavier, more efficient equipment to be used for the rock excavation needed for the longer concrete footings. The old steel arch was sold for recycling into new steel. New headwalls and slope protection were constructed using geo-textiles and rock filled Gabion baskets, which should be easier than reinforced concrete to move should a wider road and SPCSA extension be needed in the next 75 years. (or so)

	Jas. Calder, tiles for road 3	44.74
	Jas. Calder, tiles for road 4	14.93
	Jas. Calder, tiles for road 6	16.44
	Jas. Calder, tiles for road 8	3.15
	Jas. Calder, tiles for road 8	31.43
	John E. Alton, road 6 repairing	4.00
	J. J. Tone, road 7, repairing	2.00
	D. McDougall, road 4 repairing	4.30
		\$ 649.03
	Bridges	
Jan. 8	D. Gray, Erin boundary line adj.	\$.17
Aug. 13	A. B. Root, road 11, nails	.50
31	A. Currie, road 11, repairing	.99
Sept. 10	Storey & Duffield, road 11, planks	40.31
Dec. 10	Wynne-Roberts, Son & McLean, road 15, inspecting, plans and specifications for bridge	39.40
15	Ingot Iron Co., road 15	\$00.00
		\$ 881.28
	Ditching and Widening Road	
Mar. 16	Thos. Gallagher, road 4, relief	\$ 5.00
	H. Graham, road 4, relief	7.00
	E. Brain, road 4, relief	7.00
	A. Currie, road 4, relief	7.00
	Geo. Robertson, road 4, relief	7.00
	R. Hewat, road 4, relief	7.00
	Wm. Plummer, road 4, relief	5.77
	R. Harris, road 4, relief	3.50

FROM ERAMOSA TOWNSHIP MINUTES FOR 1934



RECONSTRUCTED "WOOD BRIDGE" 2005