

Fanshawe Park Road, London, ON

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In 2017, LDS Consultants Inc. of London, Ontario completed the design of the Fanshawe Park Road project. In the spring of 2019, this project was awarded to CH Excavating (2013). One of the challenging aspects of this project was the requirement to install a large 3.0m diameter maintenance hole in one of the busiest commuter routes into the City. The proposed 3.0m diameter maintenance hole in the roadway required a doghouse-style opening to be placed over top of an existing 2200mm dia. concrete pipe to allow connection for proposed 525mm concrete pipe flowing into the existing storm system.

Coldstream Concrete Ltd., the chosen concrete pipe/precast structures manufacturer, worked with LDS on this project with respect to the required precast concrete structures and reinforced concrete pipe. In reviewing the project requirements, Coldstream Concrete proposed an alternative solution to the specified 3.0m diameter round maintenance hole structure. The alternative solution was primarily driven by the fact that this structure would be placed under one of London's busiest roadways. Ensuring that the required structural capacity with a round structure would be met would be very challenging given the size of the existing concrete pipe.

Coldstream Concrete's solution involved producing a square 3.0m x 3.0m precast concrete box chamber, measuring approximately 3.6m deep, with a stacked chimney consisting of several 1.2m diameter maintenance hole pieces sitting on the box chambers' transitional top slab. This solution provided the most achievable way to successfully rest a doghouse-style structure over the existing concrete pipe and was accepted as the final design for the project. Coldstream Concrete Ltd. provided the structural design, manufacturing, and delivery of this structure.

The precast concrete box chamber was comprised of three pieces (not including the stacked chimney). A base slab, weighing nearly 8,350kg and measuring 3.508m wide by 3.508m long and 0.305m thick was



Custom doghouse structure being lifted into place.

first placed under the existing concrete pipe. After which, a tall standing square riser section was placed over top of the concrete pipe and onto the base slab. The riser weighed in at nearly 26,000kg and stood approximately 3.640m tall – one of Coldstream Concrete's tallest single pieces. A transition slab was placed directly on top of the riser, which allowed for the stacked 1.2m diameter maintenance hole chimney to extend to the top of the roadway. The transition slab was slightly lighter in weight compared to the base slab but had similar dimensions.

In May 2019, Fanshawe Park Road West was closed for approximately one month to allow for sewer upgrades, road widening, and the connection of new

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Doghouse structure in final resting position.

services to a new proposed gas station just west of Hyde Park Road. CH Excavating (2013) successfully placed the large structure pieces under and over top of the existing 2.2m diameter concrete pipe and made the necessary connections and adjustments to the existing storm system. Together Coldstream Concrete Ltd. and CH Excavating (2013) worked hard, diligently, and quickly to get the job done safely and efficiently.

LDS Consultants Inc., with the help of Coldstream Concrete's precast concrete engineering and manufacturing expertise, was able to successfully complete the Fanshawe Park project on time and provide the City of London with infrastructure that is high quality and has a long service life.