# NEW STANDARDS FOR ELECTRIC VEHICLE CHARGING STATION (EVCS) CONSTRUCTION PROJECTS

### 1. INTRODUCTION/OBJECTIVES

Morrison Hershfield has developed all-new standards for electric vehicle charging station (EVCS) construction projects for the Ministry of Transportation Ontario (MTO) for use in public parking lots. These standard drawings and specifications have been designed with the intent to one day become Ontario Provincial Standard Drawings (OPSDs) and Ontario Provincial Standard Specifications (OPSSes).

Ontario has become one of the first jurisdictions to develop standard construction drawings and specifications for the installation of public electric vehicle charging stations and associated infrastructure.

The objective of these standards is to assist in the detail design of all future MTO EVCS projects to come. Benefits to setting standards include:

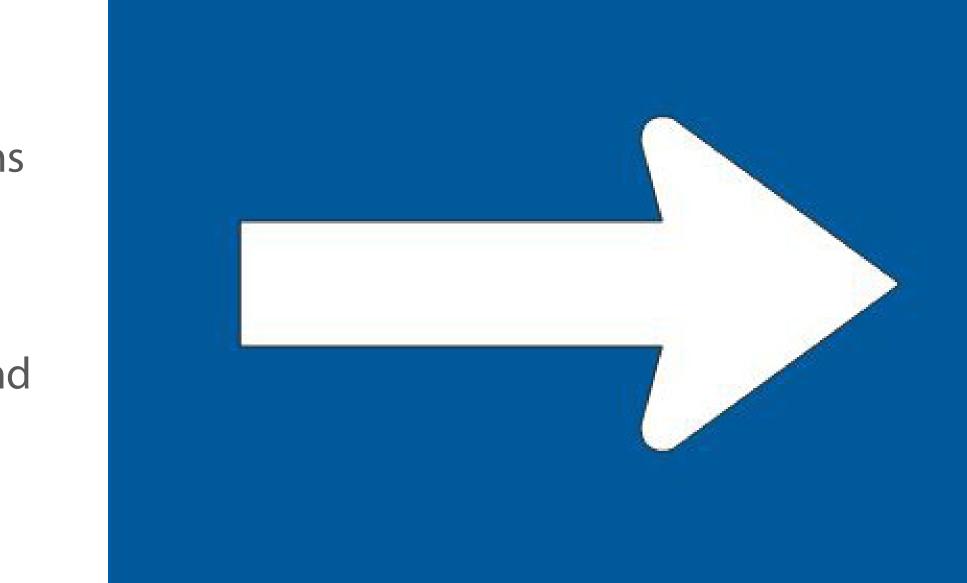
- Reduction in design and construction administration efforts for installing public charging stations province-wide.
- Provide a set of quality standards for manufacturers to conform to.

Conformance with the purchasing and construction standards by manufacturers will improve:

- Product fairness
- Industry competitiveness
- Cost

Importantly, developing a set of standards details and specifications will improve project schedules, allowing for accelerated EVCS projects to accommodate the growing electric vehicle market and combat climate change.





### 2. ASSESSMENT CRITERIA/METHODOLOGY

To develop the standard details and specifications, Morrison Hershfield has approached electric vehicle industry leaders, charging station manufacturers and project stakeholders for input and expertise. Morrison Hershfield has performed examinations of existing EVCS installations and has reviewed previous contract documents to determine what has worked and what has needed refinement in the new standards. The primary focus was on criteria such as:

- Robustness
- Flexibility
- Safety
- Maintainability

## 3. SUMMARY/RESULTS

To date the new EVCS standards have been successfully used to simplify and accelerate several carpool lot charging station construction projects.



- Protective bollards
- Efficient equipment layout for maintenance and snow removal.
- Flexibility to allow for many arrangements and styles of charging stations.
- Specification of strong reporting, payment, and interface features.





Grounding Electrode (Typ.)

Primary ducts and cables as

per power supply authority standards



SECTION C-C

Metering Cabinet

1000 (Typ.)

# 4. CONCLUSIONS, FUTURE DIRECTIONS, ACKNOWLEDGMENTS

Having undergone this exercise, we can conclude that standardization of electric vehicle charging station infrastructure may assist in the fast and consistent deployment of vehicle charging stations province-wide. Reduction in greenhouse gas emissions by encouraging electric vehicle use is a critical step in an effort to curb the effects of climate change.

In the future, it would be beneficial to have jurisdictions such as municipalities to develop their own or adopt standards for electric vehicle infrastructure.

We would like to acknowledge the MTO for their contributions and for retaining Morrison Hershfield in this project.





