

**City of Edmonton
City Operations**

Project Name: Developer Funded Traffic Signal

Scope of Work / Specifications

Project

Construction Year

New Traffic Signal Location:

20__

1.0 Executive Summary

1.1 This project involves the installation of a _____

2.0 Project Overview

The Developer shall be responsible for constructing a new traffic signal. All construction must be completed as per the attached City of Edmonton signal design plans and as per the City of Edmonton Traffic Signals Construction and Maintenance Specifications manual.

2.1 The Scope of Work for the installation of this signal is as follows:

- Poured-in-place concrete pole bases
- Underground traffic conduit and cable
- Galvanized traffic signal poles with arms
- Installation of (# traffic loops) or (over head detection)
- Traffic fixtures and pushbuttons
- Pushbutton signs to be installed by COE
- Contractor is responsible for contacting EPCOR Distribution & Transmission (D&T) to coordinate connection of power source, as per plan
- Install pre-cast concrete traffic cabinet base
- M – cabinet will be provided by contractor
- Install traffic cabinet and wiring
- Back fill all excavations as per specifications in the City of Edmonton Design and Construction Standards
- Landscape restoration back to the original state, including black dirt and grass seed
- The new signal is to be put on amber flash mode for three business days, prior to going into full operation.

2.2 Repair to Damaged Infrastructure:

- The Contractor shall be responsible for contacting the City of Edmonton Roadway Maintenance Branch for restoration of asphalt road surfaces, curbs, walks.

2.3 Landscaping:

- The Contractor shall repair all landscaping back to its original state, including black dirt and grass seed.

2.4 Utility locate:

- The Contractor shall be responsible for arranging for Alberta One-Call locates for the work site and ensuring that the utility markings are maintained throughout the Contract Time.

3.0 **Material**

3.1 Traffic Signal Pole Bases

- The Contractor shall drill and pour concrete traffic signal pole bases as per detailed drawings.
- All bases must be new poured in place concrete bases (not precast) unless otherwise specified. Base grades shall be 150mm above final grade, not exceeding 200mm above grade or 100mm below grade.

3.2 Traffic Signal Poles and Arms

- All poles and arms must be new and built to the specifications and dimensions as per the approved pole manufacturer. The Contractor may choose from one of two approved pole manufacturers:
 1. Nova Pole International Inc.
Contact: Luiss Barcan
Sales and Marketing Manager
lbarcan@novapole.com
(604) 881-0090
 2. West Coast / Valmont Industries Inc.
Contact: generalmail@wceng.com
(604) 946-1256
- All new poles and arms must be hot-dip galvanized as per the City of Edmonton Road and Walkway Lighting Construction and Material Standards 2013.

3.3 Traffic Signal Conduit

- The Contractor shall install 2" (53mm) diameter rigid PVC conduit, such as SceptaCon or equivalent, as per Canadian Electrical Code.

3.4 Traffic Signal Cable

- The Contractor shall install the specified wire in a conduit as per the Traffic Signal Design and the Canadian Electrical Code. Use IMSA 20-1 cable.

3.5 Traffic Signal Fixtures

- Traffic fixtures must be new fixtures as per the identified part number on the Traffic Signal Design plan. See Parts & Quantities Table.
- All signal inserts to be manufactured by Dialight, including pedestrian countdowns and red/amber/greens. Fixture housing to be manufactured by Fortran Traffic Systems Ltd, except pedestrian fixtures. Pedestrian fixture housing to be manufactured by McCain.
- All red/amber/green fixtures to have a louvered Pelco backplate.

3.6 Traffic Signal Cabinet Base

- The Contractor shall supply and install a precast concrete m-1 type cabinet base at the new signal.

3.7 Traffic Signal Cabinets

- The Contractor shall contact the City of Edmonton approved traffic cabinet manufacturer.
- Econolite Canada Inc.
Contact: Peter Wilson
Account Manager
Peter.Wilson@econolite.ca
(877) 272-3710
- The Contractor is responsible to provide the cabinet.
- The cabinet is to be made of aluminum, rated NEMA 3R and grey in color.
- Controllers shall be Econolite ASC/3-1000 and cabinets shall be Econolite Model: CABT210060EDM for the new signal and the pedestrian signal.
- See attached TS2 Cabinet Specification (COE TS2 SPEC 2015 – May 2015.pdf).

4.0 Required Documentation at Project Completion for location:

- 4.1 Copy of OSCAM permit
- 4.2 Concrete compressive strength reports and delivery tickets (one test per supplier per day)
- 4.3 Pole manufacturer Quality Control Reports
- 4.4 Galvanizing Quality Control Reports
- 4.5 Electrical ground resistance testing reports
- 4.6 Electrical permit by City approved Electrical Inspection Agency
- 4.7 Random audits during construction
 - At its own discretion, the City's Signals and Street Lighting Section, City Operations may undertake a number of audits during the Contract time to identify any variation from standards, Specifications, acts or regulations that have an effect on product quality, the environment or safety of personnel or general public. The Contractor will notify the City representative at least 48 hours prior to starting any major works, including but not limited to:
 1. Pre-Construction Meeting with City Traffic Signal Tech
 2. Poured in place concrete base foundation installation
 3. Setting of pre-cast controller concrete base
 4. Conduit installation by trenching and directional drilling
 5. Installation wire
 6. Installation of Poles
 7. Installation of traffic signal fixtures and push buttons
 8. Installation of Controller
 9. Any other related construction work
 10. Final Inspection
- 4.8 Commissioning Report
 - The City Traffic Signal Tech and the Contractor shall complete the Traffic Signal Commissioning Report.
- 4.9 Construction Completion Certificate (CCC)
 - The Contractor shall be responsible for submitting a CCC for the location upon completion of the Work, which will initiate an inspection of the project by the City's Signals and Street Lighting Section, City Operations.
 - During this 2 year warranty period the contractor shall be responsible to respond to all System Damage Reports within 1 hour of the notification.

Temporary repairs must be completed within 24 hours and permanent repairs must be completed within 60 days.

- A Letter of Credit is required from the Developer until the Final Acceptance Certificate is accepted by the City.

4.10 Final Acceptance Certificate (FAC)

- Upon the completion of a 2 year Warranty Period from the acceptance date of the CCC, the Contractor shall be responsible for submitting an FAC for the Work at this location. At this time, a final inspection will be completed by the City's Signals and Street Lighting Section, City Operations.

5.0 Qualifications:

5.1 Contractor Staff

Contractor is to provide documentation which verifies the qualifications of all personnel that perform work as part of this specification. As the Contractor adds or removes staff to complete the work as part of this specification the Contractor is required to notify the City, in writing, and to provide documentation which verifies the individual's qualifications. The City will upon verification of qualifications, give notice of approval of individuals for the specific qualification level as outlined below.

For the purposes of this specification, qualification definitions have been developed which define the minimum requirements for performing the different aspects of signals construction and maintenance. The qualifications focus on electrical trade qualifications and certifications recognized by the International Municipal Signals Association (IMSA).

It is the responsibility of the Contractor to ensure that its personnel are appropriately qualified to operate all vehicles and equipment as required.

The following table describes the minimum requirements for the 3 qualification levels as defined by the City of Edmonton which are TECH I, TECH II and TECH III.

| | TECH I | TECH II | TECH III |
|---|---------------|----------------|-----------------|
| Electrical Qualifications (As defined in the Alberta Apprenticeship & Industry Training Act – Electrician Trade Regulation (Alta Reg 98/95)) | | | |
| Certified Journeyman and Power Lineman or Power System Electrician or Electrician | ✓ | ✓ | ✓ |
| Master Electrician | | | ✓ |
| Electronics Qualifications | | | |
| Electronics Course Work | | ✓ | ✓ |
| Digital Logic Course Work | | ✓ | ✓ |
| Microprocessor and/or PLC Course Work | | | ✓ |
| Traffic Signal Qualifications | | | |
| IMSA Work Zone Safety | ✓ | ✓ | ✓ |
| IMSA Traffic Signals Level I | ✓ | ✓ | ✓ |
| IMSA Traffic Signals Level II | | ✓ | ✓ |
| IMSA Traffic Signals Level III | | | ✓ |
| Number of Years of Experience | | | |
| Working as a TECH I | | 2 | 2 |
| Working as a TECH II | | | 2 |
| Working as a TECH I/TECH II Total | | | 5 |

The contractor shall submit to the City the name of a single individual who is responsible for making all necessary decisions concerning contract services and management.