REVISION OF SECTION 614

ETHERNET SWITCH

Section 614 of the Standard Specifications is hereby revised to include the following:

**DESCRIPTION**

For this project the Ethernet Switch shall be a CISCO Systems IE-3000-8TC Ethernet Switch and shall be installed in traffic signal controller cabinets to transport Ethernet data to and from roadway devices on this project. The switch shall be configured with 8 10/100 Ethernet ports in addition to two (2) Small Form-Factor Pluggable (SFP) based 1 Gigabit Ethernet ports. All components including the SPF optics shall be manufacturer by CISCO Systems.

**MATERIALS**

The Contractor shall furnish and install the Ethernet Switch as configured in the item table below. This table describes items for a single CICSO Ethernet switch

Item Table -

|  |  |  |
| --- | --- | --- |
| **ITEM DESCRIPTION** | **ITEM NUMBER** | **QUANTITY** |
|  | CISCO IE 3000 Switch, 8 10/100 + 2 T/SFP | IE-3000-8TC | 1 |
|  | IE 3000 Power Transformer | PWR-IE3000-AC= | 1 |
|  | Smartnet 8x5xNBD |

|  |
| --- |
| CON-SNT-IE38TC |

 | 1 |
|  | 1000Base ZX SFP |

|  |
| --- |
| GLC-ZX-SM= |

 | 2 |

Prior to final field installation, the Contractor shall deliver the Ethernet switch including basic configuration from CISCO Systems, and all above referenced materials to the Colorado Department of Transportation, Region 6 Traffic and Safety office. Final configuration for data transport will be conducted by Colorado Department of Transportation personnel.

All IP Addressing shall be the responsibility of the Colorado Department of Transportation.

If field changes are made which would affect the Contractor’s original order for the Ethernet Switch, which in turn would require modifications to the Ethernet Switch order, the Contractor shall ensure that the CISCO Systems representative is contacted and made aware of such changes in order to alleviate any possible delays in delivery.

The Ethernet switch and all of its components shall be DIN Rack mountable. A field site survey for final placement of the Ethernet switch in each individual controller cabinet shall be conducted prior to installation.

All associated hardware not listed in the item table is considered subsidiary and is required for a complete installation.

If for any reason the switch, associated device materials or SFP optic modules are defective or are damaged at the time of delivery to the Colorado Department of Transportation or installation by either the Contractor or by CISCO Systems, the item shall be replaced at no additional cost to the project. Items shall also be replaced if any failures occur after installation and under live data communications transport do to manufacture defects, at no additional cost to the project and shall be replaced prior to final project acceptance.

The Contractor shall provide two (2) patch cables for connection to the Ethernet Switch in each traffic signal controller cabinet and two (2) patch cables in all associated device communications node buildings. Patch cables shall be a single mode, duplex with LC connectors for the Ethernet switch SPF optics and connectors to match the fiber optic patch panels in the communications node building. Lengths shall be described in the Fiber Optic Pre-Connectorized Cable project specification.

**METHOD OF MEASUREMENT**

Ethernet Switch will be measured by the actual number of Ethernet Switches installed and accepted for a complete installation. Also included shall be the power transformer, SFP optics, all basic configuration, wiring, patch cables, documentation, and required testing by the CISCO representative. All costs associated with arranging for a CISCO representative to be on-site will not be paid for separately, but shall be included in the cost of the item.

**BASIS OF PAYMENT**

Payment will be under:

 **Pay Item Pay Unit**

Ethernet Switch Each

Payment will be full compensation for all labor, materials and equipment required to complete the work.

All testing and integration associated with Ethernet Switch shall be included in the cost of the item for a fully operational device and shall include all work required to integrate the device into the overall Ethernet network at project locations for a fully operational system.