**ITEM 633 CONTROLLER ITEM MISC.: LAYER 3 ETHERNET SWITCH**

The Contractor shall furnish and install A Cisco IE-4010-16S12P Ethernet switch as shown on the Plans. The switch shall include an “IP Services” software option, (16) - GigE SFP ports for connection to the fiber network, and (12) - 10/100/100mb copper ports.

The Contractor is responsible for ensuring that the furnished Layer 3 Ethernet Switch IS fully compatible with all existing and proposed fiber optic ethernet transceivers.

The Contractor shall be responsible for providing a complete, functional system including all necessary cables and connectors in accordance to the specifications and as specified on the plans. All miscellaneous patch and interconnect cables shall meet the proposed equipment specification requirements and shall meet EIA/TIA telecommunications standards. Additionally, fiber optic patch cables shall conform to the requirements outlined in supplemental spec 1620.

The Contractor shall provide a warranty on the installed layer 3 switch for a period of three (3) years following final project acceptance.

The Contractor shall deliver the following items to the division of design and Construction Project Manager for configuration and testing by the Columbus department of technology (DoT):

* Cisco IE-4010-16S12P with power supply.
* All licenses and key software features for Layer 3 and Layer 2 functionality to allow for the dynamic network of the CTSS.
* Power cables, Category 5e or Category 6 patch cords, and single mode duplex LC/APC patch
* cables at various lengths as required.
* Fiber optic patch cables

The City of Columbus, Department of Technology, shall bench test, assign IP addresses and configure the Layer 3 Ethernet switch prior to the equipment being installed in the field. Testing shall not begin until the Ethernet switch and expansion modules are received by the City. The Contractor shall provide the construction project manager a written notification a minimum 14 calendar days before the delivery of the Ethernet switch.

The test procedures shall consist of operating the equipment in a network configuration for a minimum of seven calendar days.

The City will complete testing on the Ethernet switches within 28 callendar days. Any Ethernet switch or expansion module found to be unsatisfactory shall be replaced by the Contractor and resubmitted for testing. The division will schedule testing of this returned equipment as quickly as possible but will only provide a forty-five (45) calendar day guarantee for the turnaround time period. The Contractor shall be solely responsible for any delay caused by this testing. Ethernet switches or expansion modules which have not passed testing or which have not been tested by the Department of Technology shall not be installed in the field. Any cost associated with the delivery and pick-up shall be incidental to the cost of the bid item. Contact the construction project manager for equipment status.

Upon Department of technology acceptance, the department of technology will return the switch and power supply to the division of design and construction fiber construction coordinator to hold until installation.

The contractor shall contact the Division of Design and Construction Project Manager and the Fiber Construction Coordinator a minimum of three (3) City of Columbus working days in advance to schedule installation. A Division of Traffic Management ITS Electronic Systems Specialist shall be present for the switch installation. The Fiber Construction Coordinator shall contact the Division of Traffic Management ITS Engineer a minimum of two (2) City of Columbus working days in advance of installation to schedule this work.

The Contractor shall furnish 19” equipment rack shelf for secured switch mounting (modular hardened switch only).

CONSTRUCTION

1. Securely mount the network switch to the 19” equipment rack located within the communications node cabinet or data center as per plan.

2. Make the power and communications connections

The work as described will be measured as one unit for each of the installations specified, and shall include all materials, equipment and incidentals, complete in place. Terminations, connections, and other miscellaneous items and materials shall be considered incidental to this item and no separate payment will be made. 4/12/19