CUPERTINO

PUBLIC WORKS DEPARTMENT
Timm Borden, Director

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Date: June 17, 2015
File: 74,001.41

ADDENDUM NO. 1
FIBER NETWORK EXPANSION FOR SIGNAL INTERCONNECT PROJECT
PROJECT NO. 2015-16
BID OPENING: June 23, 2015
2:00 P.M.

The following revisions are hereby made to the above referenced project.

1. Replace Document 02200 Fiber Optic Cable with the revised Document 02200 Fiber Optic Cable attached to this Addendum. Fiber Optic Cable product information has been added to Document 02200, Part 2, pages 02200-1 and 02200-2.

2. QUESTION 1: Is a conduit divider required for existing conduits that become empty after SIC has been removed?

   ANSWER 1: A conduit divider is not required if the fiber will be installed in an empty conduit, new or existing. The divider is to protect other existing cables/conductors during installation of the fiber cable.

All questions regarding this project must be transmitted in writing to Erwin Ching, Associate Civil Engineer. Fax number is 408-777-3333 and email address is erwinc@cupertino.org.

Please indicate receipt of this addendum on the last page of the Proposal. Failure to do so may cause rejection of your bid.

APPROVED BY:

Timm Borden
Director of Public Works

SECTION 02200

FIBER OPTIC CABLE

PART 1 -- GENERAL

1.01 DESCRIPTION

A. Work includes furnishing and installing new 12- and 24-strand fiber optic cable through existing occupied conduits and new conduits at locations as shown on the plans. Work also includes removal of existing signal interconnect cable (SIC) as shown on the plans.

1.02 QUALITY ASSURANCE

A. All cable installation work shall be carried out in accordance with and consistent with the highest standards of quality and craftsmanship in the communication industry with regard to the integrity of the connections, the finished appearance of the installation, as well as the accuracy and completeness of the documentation.

B. The Contractor shall be responsible for any damage to existing cables or conductors (including fiber-optic cable) as a result of Contractor's operations. The Contractor may elect to conduct tests of existing cables or conductors prior to installation of fiber-optic cable, in the presence of the Engineer, to record the operational condition of existing cables or conductors. The Contractor will not be held responsible for any damage to existing cables found, documented, and noted by the Engineer, as part of the pre-installation inspection and testing. The testing of existing cables or conductors (if elected) shall be considered incidental to the installation of fiber-optic cable. If cables or conductors are found to be damaged, the Engineer may direct the Contractor to furnish new cables or conductors through a contract change order.

PART 2 – PRODUCTS

2.01 GENERAL

A. All cable shall be in accordance to these specifications and to the latest City of Cupertino Standards. All fiber optic cable shall be non-armored, loose tube, gel-free, single-mode fiber optic (SMFO) cable with a wavelength of 1,310/1,550nm and a maximum attenuation of 0.35/0.2dB/km.

2.02 SINGLE-MODE FIBER OPTIC CABLE

A. 24-strand SMFO cable shall be used as the main trunk cable as shown on the Plans.

B. 12-strand SMFO cable shall be used as the branch cable to connect the main trunk cable to the field devices as shown on the Plans.

C. Each length of cable shall be permanently identified by specifying the manufacturer and type of cable at intervals not greater than 6 feet along the outside of the outer jacket. Each length of cables shall be permanently marked with length marking intervals not greater than 3 feet.

D. The Contractor shall submit certification from the manufacturer that the above requirements have been met by the cable supplied to the project. Documentation of factory results shall be provided to the Project Engineer prior to shipping.

PART 3 -- EXECUTION

3.01 FIBER OPTIC CABLE

A. Existing fiber-optic cable in occupied conduits shall not be removed during the installation of fiber-optic cable.

B. The Contractor shall furnish and install conduit dividers to allow the fiber-optic cable to be installed over the existing cables or conductors.

a. Conduit dividers shall have a minimum of two cells and be installed according to the manufacturer's recommendations.
b. The conduit divider shall be installed on top of existing cables or conductors, and the fiber-optic cable installed in one of the cells.
c. Conduit dividers shall be MaxCell by TVC Communications or approved equal. Rigid or semi-rigid inner duct is not allowed.
d. Conduit dividers are not required for empty conduits. Furnishing and installation of conduit dividers shall be considered incidental to the installation of fiber optic cable.

C. Existing County of Santa Clara fiber optic communication facilities are located in the project area. County communication fiber optic cable damaged by Contractor's operations shall be temporarily repaired and then replaced in accordance with County Standard Specifications Section 86.01.06. Damaged fiber optic cable must be replaced for the entire length between existing trunkline end-to-end splices. Temporary repair and replacement will be at the Contractor's expense.

D. During cable installation, the bend radius shall be maintained at a minimum of twenty times the outside diameter of the cable. In all pull boxes, the cable shall be routed as needed to avoid violating the minimum-bending radius. After installation, the bend radius shall be maintained at a minimum of ten times the outside diameter of the cable. Exceptions to minimum bend radius after installation shall only be allowed with the approval of the Engineer.

E. The branch cable shall have the following minimum slack requirements:

Location	Slack
Fiber-optic splice box	50 feet
No. 6 pull box with extension	50 feet
Building fiber termination panel	50 feet

No slack is required in No. 5 pull boxes. The Contractor shall submit the cable routing plan for these pull boxes to the Engineer for approval. Slack in pull boxes and cabinets required by the Plans and these Specifications shall be considered incidental to the installation of fiber optic cable.

F. Contractor shall remove existing signal interconnect cable (SIC) at locations shown on the plans. Removed SIC shall become property of Contractor and disposed of properly.

G. All new fiber installed along the north side of Stevens Creek Boulevard west of State Route 85 and along Foothill Expressway shall be labeled/tagged "City of Cupertino" within each pull box the fiber passes through.

PART 4 -- MEASUREMENT AND PAYMENT

A. Installation of fiber-optic branch cable shall be measured on a per foot basis by length of conduit. The contract price paid for fiber-optic branch cable installation shall include full compensation for furnishing all labor, materials, tools and incidentals, and performing the work involved in installing, placing, replacing, removing and disposing of components, testing existing fiber-optic cables and conductors, and furnishing and installing flexible conduit dividers, as specified in the Plans and these Specifications.

B. Removal of existing SIC shall be measured on a per foot basis by length of conduit. The contract price paid for removal of existing SIC shall include full compensation for furnishing all labor, materials, tools and incidentals, and performing the work involved in removing and disposing of SIC as specified in the Plans and these Specifications.

END OF SECTION