



DEVELOPMENT SERVICES CENTER
PUBLIC WORKS DEPARTMENT
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MORGAN HILL, CA 95037-5301
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ADDENDUM NO. 4

DATE: November 14, 2019
TO: ALL PLAN HOLDERS OF THE:
Citywide Fiber Network Infrastructure-Community Park Fiber Optic
Project
FROM: Yat Cho – CITY OF MORGAN HILL 
SUBJECT: CLARIFICATION

Pages (6) including this page.

1. **Bid Acceptance.** The City of Morgan Hill ("City"), will accept sealed bids for its Community Park Fiber Optic Project ("Project"), by or before **Tuesday, December 3, 2019, at 02:30 p.m., at the Development Services Center, located at 17575 Peak Avenue Morgan Hill, CA 95037**, at which time the bids will be publicly opened and read aloud.
2. Attach CommScope Fiber Indoor/Outdoor Cable Material Safety Data Sheet as part of the Appendix for this project.
3. Provide an additional 15 feet of fiber optic cable rolled up in the splice box for future camera connections and future building connection at three locations (Cosmo Avenue, Additive Alternative #1 location, and Concession Building location).
4. Replace Section 3.01 Fiber Optic Conduit with the attached revised Section 3.01 Fiber Optic Conduit.

ADDENDUM ACKNOWLEDGMENT

Bidder acknowledges receipt of this addendum, which shall be attached to the proposal.

Contractor's Representative

Date

**THIS DOCUMENT AND THE ATTACHMENTS SHALL BECOME PART OF THE
PROJECTS SPECIFICATION**

3.01 FIBER OPTIC CONDUIT

a. **Description:** The work to be done shall consist of constructing all or portions of the City fiber optic system. Fiber Optic Conduit shall conform to the provisions in Section 86, "Signals, Lighting and Electrical Systems," and Section 87, "Electrical Systems," of the Standard Specifications and these technical provisions.

City Fiber optic layout indicated on the drawings is diagrammatic and locations of splice boxes are approximate only. The exact locations and routing of conduit shall be done in a neat arrangement and shall overcome local difficulties of structural nature. No change in the work shall be done without the written approval of the Engineer.

The drawings indicate in a schematic and general way the desired location and arrangement of conduit runs and are to be followed as closely as possible. Proper judgment must be exercised in executing the work in order to secure the best possible installation in the available space and to overcome local difficulties of space limitations or structural interference.

The locations of the splice boxes have been determined as accurately as possible and are shown on the plans. The Contractor shall verify details pertaining to the exact locations and requirements of the service utilities before submitting a proposal. Also, before submitting his proposal, he shall determine the location, type, and size of each existing service and associated equipment, giving special attention to features that may affect the installation and connection of the proposed new conduit, equipment, fittings, and connectors which will be necessary to serve the existing facilities of each customer. No consideration for extra costs will be given resulting from failure of contractor to give sufficient attention to this requirement.

All work shall be performed in a safe, workmanlike manner. Work performed, methods and equipment used shall be in conformance with the prevailing State and Federal Occupational Safety Health Acts and applicable portions of Section 7 of the Standard Specifications. Costs from delays and losses due to operations not in conformance with these Specifications, or stoppages by OSHA inspectors, City Inspector or the Engineer as a result of such nonconformance shall be borne solely by the contractor.

The installation of underground fiber optic conduit may be open trench and/or Horizontal Directional Drilling (HDD).

Materials

All conduit and fittings shall be U.L. approved. Unless otherwise noted or required, use minimum 2" Schedule 40 PVC conduit and fittings below grade.

~~For aboveground installation and at light pole location, provide and use 1" metallic rigid steel conduit stub at the pole base for fiber path to the pole camera.~~

For aboveground installation at building locations (two locations), provide and install 2" conduit stub from splice box to the building. Additionally, provide and install 2" conduit with pull box into equipment locations through ceiling accessible space.

Conduits, pull boxes, vaults, pedestal and manholes shall be furnished by the Contractor. Conduits, pull boxes, vault boxes, manholes, and other materials shall meet the requirements of the respective serving utilities.

All conduits shall be sized as indicated on the plans and shall be of the types listed below:

Splicing. Splicing shall be performed on the electric services by the contractor. Where service equipment will not accept aluminum cable, contractor will connect to the existing copper conductors with suitable type of aluminum to copper connectors.

Splice Box Installation - Splice box shall be Christy type N30 style box or approved equal (Reference Sheet 2 of plans) and shall conform to the Plans, the Standard Specifications and these Special Provisions. Splice boxes shall include lid and security hold-down bolts, unless otherwise noted. Splice boxes shall be installed with duct entrances, draw bolts, sumps, ground rods, and other required hardware as indicated on the plans or as directed by the Engineer. Precast concrete boxes shall have duct terminators for all conduits or ducts entering boxes. If special knockout locations are required, they will be indicated by the utility company.

Ducts and Conduit Installation - Extreme care shall be exercised to ensure that concrete and other foreign matter does not enter ducts or conduit being laid. All burrs or rough edges in conduit or duct shall be made smooth. All ducts and conduit shall be proved free of obstructions, dirt and debris by means of a mandrel. The mandrel diameter shall be not more than 1/2 inch smaller than the duct or conduit diameter. For straight runs and long sweeps, the mandrel length shall be one foot. A flexible or spherical type mandrel may be used only on runs, which contain a radius bend of 36 inches or less.

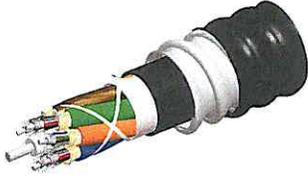
Bends in duct or conduit shall be made in the form of long radius sweeps. Performed bends shall be used only as shown on the plans. A pull line shall be installed in each empty conduit or duct. Transitions from one diameter to another shall only be made at splice boxes, enclosures, manholes or vaults.

Pull lines shall be furnished and installed by the Contractor. Mandrels shall be furnished by the Contractor and conduit shall be proven free of debris or irregularities.

b. Measurement and Payment: The contract price paid per linear feet for Fiber Optic Conduit using the open-trench method and/or the HDD method as indicated on **Bid Schedule I, Item 3 and Bid Schedule II, Item 2**, shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in including, furnishing and installing the conduit, including trenching, excavation and backfill, sand backfill, fiber optic conduit installation, concrete backfill, pavement removal and restoration, sidewalk, curb and gutter removal and restoration, as shown on the plans as specified in the plans and these special provisions, and as directed by the Engineer.

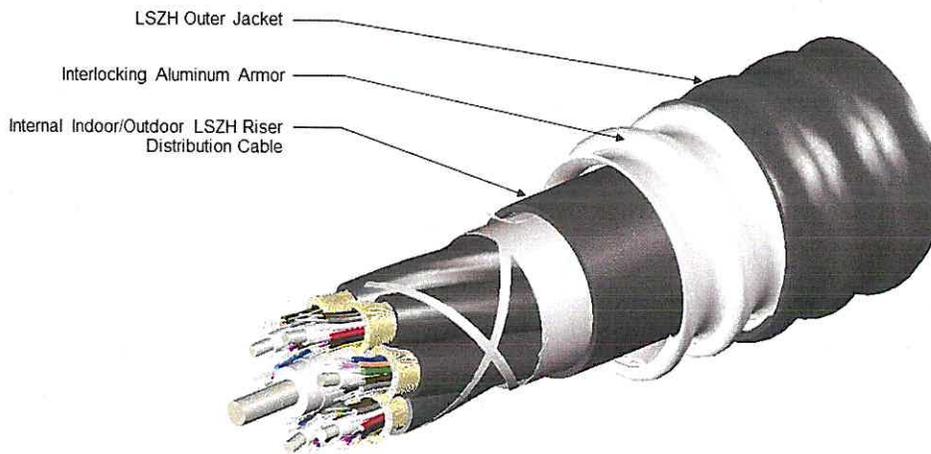
Full compensation for splice boxes shall be considered as included in the contract lump sum paid for under Fiber Optic Conduit thereof and no additional compensation will be allowed thereof.

Full compensation for furnishing, placing, and maintaining all supports and shoring that may be required for excavation shall be considered as included in the contract lump sum price paid for trench excavation and worker protection and no additional compensation will be allowed therefore.



Portfolio CommScope®
Product Type Fiber indoor/outdoor cable
Regional Availability Asia | Australia/New Zealand | EMEA | Latin America | North America

EN50575 CPR Cable EuroClass B2ca | s1a | d0 | a1
Cable Qualification Standards ANSI/ICEA S-104-696 | EN 187105 | Telcordia GR-20 (water penetration for internal cable) | Telcordia GR-409



Construction Type Armored
Cable Type Distribution
Fiber Type Solution G.652.D and G.657.A1 , TeraSPEED®
Total Fiber Count 12

Armor Type	Interlocking aluminum
Fiber Type	G.652.D and G.657.A1, TeraSPEED®
Fiber Type, quantity	12
Jacket Color	Black
Jacket UV Resistance	UV stabilized

Cable Weight	120.0 lb/kft 178.0 kg/km
Diameter Over Armor	12.07 mm 0.48 in
Diameter Over Jacket	14.10 mm 0.56 in

Minimum Bend Radius, loaded	28.2 cm 11.1 in
Minimum Bend Radius, unloaded	19.7 cm 7.8 in
Tensile Load, long term, maximum	90 lbf 400 N
Tensile Load, short term, maximum	300 lbf 1335 N
Vertical Rise, maximum	229.0 m 751.3 ft

Flame Test Listing	NEC OFCR-LS (ETL) and c(ETL)
Flame Test Method	IEC 60332-3 IEC 60754-2 IEC 61034-2 IEEE 383 UL 1666 UL 1685

Environmental Space	Low Smoke Zero Halogen (LSZH) Riser
Installation Temperature	-30 °C to +60 °C (-22 °F to +140 °F)
Operating Temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Storage Temperature	-40 °C to +75 °C (-40 °F to +167 °F)

Compression	485 lb/in 85 N/mm
Compression Test Method	FOTP-41 IEC 60794-1 E3
Flex	25 cycles
Flex Test Method	FOTP-104 IEC 60794-1 E6
Impact	25.80 ft lb 35.00 N-m
Impact Test Method	FOTP-25 IEC 60794-1 E4
Strain	See long and short term tensile loads
Strain Test Method	FOTP-33 IEC 60794-1 E1
Twist	10 cycles

Twist Test Method	FOTP-85 IEC 60794-1 E7
Water Penetration	24 h
Water Penetration Test Method	FOTP-82 IEC 60794-1 F5

Cable Freeze Test Method	IEC 60794-1 F15
Heat Age	-40 °C to +85 °C (-40 °F to +185 °F)
Heat Age Test Method	IEC 60794-1 F9
Low High Bend	-40 °C to +70 °C (-40 °F to +158 °F)
Low High Bend Test Method	FOTP-37 IEC 60794-1 E11
Temperature Cycle	-40 °C to +70 °C (-40 °F to +158 °F)
Temperature Cycle Test Method	FOTP-3 IEC 60794-1 F1

Agency	Classification
RoHS 2011/65/EU	Compliant
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
CENELEC	EN 50575 compliant, Declaration of Performance (DoP) available



CS-8W-TB (Product Component—not orderable) — TeraSPEED® Singlemode Fiber

Operating Temperature Specification applicable to non-terminated bulk fiber cable