April 18, 2016

Sturgeon, Missouri Interschool Fiber Optic Broadband Connection

**Project Description**

The objective of this project is to extend Broadband service from the existing MORENet Broadband service connection at the Elementary/ Middle School building to the Sturgeon High School.

The project consists of placing approximately 6500 ft. of Fiber Optic cable between the High School building and the Elementary/Middle School building along public ROW within the city limits of Sturgeon, Missouri.

A direct-buried 1-1/4 inch inside diameter duct will be placed at a nominal depth of 24 inches below grade using a combination of trenching and directional boring, and the single-armored 24-fiber single-mode fiber optic cable will be pulled into this duct. Two locations will require extra depth to a total of 60” below grade.

The cable entrance at the High School will be on the west side of the building and the cable entrance at the Elementary/Middle school building will be on the south side of the building. Details of the cable entrances are included in the detailed specifications.

The route of the placement between the two buildings will follow approximately 550 ft around the north side of the High School and west across Fairgrounds Rd., then south approximately 3600 ft. in the public ROW along the west side of Fairgrounds Rd. to the south side of West Wall St., then east approximately 1100 ft to Wentz St, then south approximately 750 ft across the Norfolk and Southern RR tracks to the Southeast corner of the Elementary/Middle school grounds, then west to 450 ft on the school property to the cable entrance.

The Contractor will provide and install the Fiber optic cable, handholes, route markers, splice cases and organizer trays, ground rods at the two entrances and at an intermediate locating point, and steel riser pipe (approximately 12 feet at each end) from the end-point spice handholds into the building.

On completion of the fiber splicing at each end, the contractor will do simple db loss tests at 1310 and 1550 nm on each fiber (24 total) from patch panel to patch panel and provide the School District with the loss readings. Splice losses don’t need to be documented, but should be 0.1 db/splice or less.

The Sturgeon School District will providea connectorized patch panel with a dielectric 24-fiber stub for each end; the contractor will fusion splice the ends of these stubs to the contractor-provided OSP fiber. The School District will have an electrician mount the patch panels and run the stubs over to the contractor-provided steel riser pipes at the entrances and the contractor will run the fiber down through the risers.

**Material Specifications**

Fiber cable is to be Superior-Essex or Corning or approved alternative single armored loose-tube meeting RUS PE-90 standards with maximum losses at 1310/1550 nm of 0.4/0.3 db respectively.

Five handholes are required and are to be Quazite 24”X30”X24”deep, with a minimum load rating of 10,000, and are to be set with the tops at grade level.

Three splice cases are required and are to be Preformed Line Products or approved alternate.

Six route markers are required (one at each handhold plus one midway between HH 1 and 2) and may be Carsonite or Cott or approved alternative, stating the presence of Buried Fiber Optic Cable and the Missouri One-Call 800-number.