

SECTION 634

MESSENGER WIRE

The following subsection shall be amended to this section:

634-1 Description

This section shall cover the work of furnishing and installing messenger wire, mounting hardware, grounding electrodes, and other materials as necessary to provide a support for fiber optic cable, in accordance with the provisions of the Section and the details included in the Plans.

634-2 Materials

Messenger wire shall consist of a 7-wire stranded cable manufactured and provided with a Class A zinc coating in accordance with ASTM A475. Messenger wire shall be Extra High Strength, with a diameter of 0.3 inch and a tensile strength rating of 10M.

All cable attachment hardware and materials shall be new. Cable attachment hardware and materials shall include, but not be limited to, pole attachment hardware, cable ties and straps, extension arms, and pole extensions. Reuse of existing cable attachment hardware is not permitted.

Extension arms shall consist of galvanized steel brackets designed to support a messenger wire at a distance of up to 12 inches from the pole face. Extension brackets shall be as shown in the Plans. Extension arms shall be included in the cost of the messenger cable.

Cable attachment hardware shall be in general conformance to the details shown in the Plans.

Ground rod electrodes, where necessary, shall be copper-clad rods specially designed for use as grounding electrodes. Ground rod electrodes shall have a minimum diameter of 9/16 inches and a minimum length of 18 feet. Ground wire shall be No.8 AWG or larger solid copper wire.

Ground electrodes shall be driven vertically into the adjacent undisturbed soil, to a depth such that the top of the ground rod is at least 6 inches below finished grade. All installation and construction work in or on City Electric facilities shall be in compliance with the National Electric Safety Code.

Ground wire shall be securely attached to pole hardware or existing ground wire using clamps commonly used by the utility industry for such purposes. The ground wire shall be stapled at regular intervals to the wood pole.

The ground wire shall be exothermically welded to the ground rod using a weld kit designed for this purpose.

The Contractor shall measure the resistance to ground of the ground rod; a completed assembly shall measure less than 25 ohms. Additional extensions of ground rod electrode shall be installed if required to obtain this threshold.

634-3 Construction Requirements

Messenger wire shall be attached to poles at the locations shown in the Plans. The Contractor shall make all installations in conformance to the safety requirements and standard practices of the National Electric Safety Code, the utility industry, and the pole owner. All installation and construction work in or on City Electric facilities shall be in compliance with the National Electric Safety Code.

The messenger wire and supports shall be installed at a height and in a position on the support poles as indicated on the Plans, using standard suspension hardware. If the listed attachment height does not allow a clearance from the roadway of 18 feet or clearance from the ground or a driveway of 16 feet, or if safety clearances required by the National Electric Safety Code can not be attained, the Contractor shall notify the Engineer and adjustment will be made if required.

The Contractor shall be responsible for locating and drilling all holes required for the attachment of the messenger wire to the poles. The Contractor shall not use any existing holes on utility poles without the authorization of the Engineer.

The Contractor shall install messenger wire in segments; the messenger wire does not have to be continuous. The Contractor shall tension the unloaded messenger wire in accordance with the recommendations of the messenger wire and fiber optic cable manufacturers, to minimize the possibility of strand fatigue failure. Based upon these recommendations, vibration dampening weights may be required; the cost of furnishing and installing those weights shall be included within the cost of the messenger wire. All span tensions shall be measured and verified with a strand dynamometer or other approved measuring device in the presence of the Engineer.

The messenger wire shall be bonded with bonding conductors and clamps to the pole's ground conductor at all poles to which the messenger wire is attached. Where a ground wire or ground rod does not exist, a new ground rod and or wire shall be installed as described above. Ground rods and ground wire shall be included within the cost of the messenger wire.

Installations of messengers or cables on poles that create any unbalanced static forces on the poles will require the installation of the appropriate guy wire and anchor. The Contractor shall be responsible for obtaining appropriate permits, underground locations, and easements for installing the aforementioned guys. All installations of guys on City Electric facilities shall be in compliance with the National Electric Safety Code. Any required guys and guy hardware shall be included in the cost of the messenger wire.

Any trimming of trees necessary to allow the installation of the messenger shall be performed by the Contractor and shall be included in the cost of the messenger wire. All tree trimming required around or near City Electric poles and lines shall be performed only by a qualified line clearance tree trimmer as defined in Sections 1910.268 and 1910-269 of the Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1910. Additionally, tree trimming shall be in compliance with all current and applicable Leon County and City of Tallahassee environmental ordinances and policies.

The Furnishing and Installation of Messenger Wire shall be measured in complete units consisting of the furnishing and installation of messenger wire, mounting hardware, bonding, ground rods as required, guys as required, extension arms as required, and all related hardware, and tree trimming, as defined in these Technical Special Provisions.

634-5 Basis of Payment

UNIT PRICE COVERAGE

The accepted work of furnishing and installing Messenger Wire, measured as noted above, shall be paid for at the contract unit price bid, which shall be full compensation for the satisfactory furnishing and installation of the wire in accordance with these Technical Special Provisions, and for all equipment, tools, labor, services, insurance, permits, and incidentals necessary to complete the work.