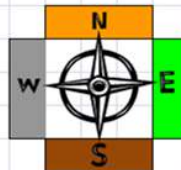


ATTACHMENT B2.3  
AERIAL FIBER OPTICAL CABLE INSTALLATION

1. **Installation Guidelines:** Install all materials according to the latest version of the manufacturer's installation procedures of which contractor is solely responsible for obtaining and the industry-accepted installation standards, codes, and practices, or as directed by IdeaTek. Ensure that all materials and installation practices are in accordance with the applicable OSHA requirements as found in 29 Code of Federal Regulations (CFR) Part 1926, Safety and Health Standards for Construction.
2. **Dip Crossings / Conduit:** Ensure conduit and inner-duct is clean and free from damage prior to installing fiber optic cable.
3. **Sequential Documentation:** Document the sequential cable length markings and serial number at each pole, and include the information with the as-built documentation.

4. **Fiber Optic Cable Installation Labeling:** Use cable direction nomenclature as seen on the right to create cable tags for the identification of fiber optic cable. Install cable tags or tape near entrance point and if cable is a dead end, near terminating end. Ensure that the cable tags are permanent labels suitable for outside plant applications and are affixed to all fiber optic cables. Labeling cards for the Contractor's workers are available upon request. **Failure to label any fiber splice point at the time of installation shall result in a \$250.00 fee per occurrence as liquidated damages and may be deducted from any payment to the contractor.**

+ CO Side if applicable
<b>Labeling Requirements</b>
<ol style="list-style-type: none"> <li>1. All cables must be labeled with, at a minimum, a directional color.</li> <li>2. If applicable, always label the CO side with blue</li> <li>3. If applicable, always label drops with address</li> <li>4. Use zip ties or electrical tape</li> <li>5. <b><u>Not labeling cables during installation is a huge unneeded expense for the company and is grounds for disciplinary action. Expect random audits of your work.</u></b></li> </ol>
<b>Directional Color Code</b>
Label the cable for the direction it is headed


5. **Slack Cable Storage:** Provide and store fiber optic cable at each indicated slack loop as specified.
6. **Pulling:** Install the fiber optic cable by hand or by using a mechanical pulling machine. If a mechanical pulling machine is used, equip the machine with a monitored or recording tension meter. Ensure that at no time the manufacturer's recommended maximum pulling tension is exceeded. Ensure that the central strength member and aramid yarn are attached directly to the pulling eye during cable pulling. Use pulling attachments, such as "basket grip" or "Chinese finger" type, to ensure that the optical and mechanical characteristics are not degraded during the fiber optic cable installation. Ensure that excess cable is coiled in a figure eight and fed manually when pulling through dips / conduits. If pulleys and sheaves will be used to mechanically pull through pull boxes and splice boxes, use a drawing of the proposed layout showing that the cable will never be pulled through a radius less than the manufacturer's minimum bend radius. Use large diameter wheels, pulling sheaves, and cable guides to maintain the appropriate bend radius. Provide tension monitoring at all times during the pulling operation. Ensure that cable pulling lubricant used during installation is recommended by the optical fiber cable manufacturer.
7. **Utility Specific Requirements:** Contractor is required to follow all utility specific standards and should inquire with IdeaTek for any known standards and standards changes prior to the start of any project.

Westar Energy specific requirements:

- i. The following Lesson Plans should be reviewed and followed on all Westar job sites. *Job Briefings, Job Site Protection, Mounted Equipment, Personal Protective Equipment*. Contact the IdeaTek project manager if you do not have copies.
- ii. A pole attachment tag shall be affixed to every 3<sup>rd</sup> pole in a pole attachment line. **Failure to affix a pole attachment tag shall result in a \$25.00 fee per occurrence as liquidated damages and may be deducted from any payment to the contractor.**
- iii. Insulators are required to be installed on all down-guys (see Westar SS 69.35)
- iv. The current Westar Service standards must be followed in all respects (see <http://ss.wr.com/> )

**Failure to follow Utility Specific Requirements will obligate Contractor to remedy such failures at its sole cost. IdeaTek may withhold the costs associated with the remedy from any payment due to contractor until such time such failures are remedied in a manner satisfactory to IdeaTek. In the event Contractor does not resolve such failures in a timely manner, IdeaTek may perform the remedy itself and invoice for or deduct the actual costs associated with the remedy.**

8. **Engineering and NESC specifications:** Prior to any construction, Contractor is obligated to understand and follow all provided engineering documentation and designs as well as the most up to date National Electric Safety Code (NESC) and any engineering or safety codes required by the owner of the pole or facility being attached to. Contractor shall be liable for any penalties assessed or cost of work performed by the Utility Owner for attachments which are out of specification of any NESC, engineering, or utility code or standard.
9. **Pole Attachment Permits:** Contractor shall have a copy of all issued pole attachment permits on hand at any job site and follow all requirements and specifications of the permit(s).

*[signature page to follow]*

**Pursuant to Article 2 of the MASTER CONSTRUCTION AND INSTALLATION SERVICES AGREEMENT (“Agreement”) between IdeaTek Telcom, LLC, and Contractor executed on: \_\_\_\_\_ this Attachment shall be made part of the Agreement.**

**Acceptance by Contractor to abide by and be bound to these specifications and agreement to the Amendment to the Agreement.:**

\_\_\_\_\_  
("Contractor")

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Its: \_\_\_\_\_

Dated: \_\_\_\_\_