

**DARK FIBER
INSTALLATION AGREEMENT**

Between

Cincinnati Bell Telephone Company LLC

And

Commonwealth of Kentucky

Dated: May 26, 2016

EXHIBITS

Exhibit A	[REDACTED]
Exhibit A-1	[REDACTED]
Exhibit A-2	Description of Major Segments and Commonwealth Fibers
Exhibit B	Fiber Splicing, Testing, and Acceptance Standards and Procedures
Exhibit C	Cable Installation Specifications
Exhibit D	As-Built Drawing Specifications

DARK FIBER INSTALLATION AGREEMENT

THIS DARK FIBER INSTALLATION AGREEMENT ("Installation Agreement") is made as of the 26th day of May, 2016 ("Effective Date") by and between Cincinnati Bell Telephone Company LLC ("Cincinnati Bell"), an Ohio limited liability company, having its principal office at 221 E 4th Street, Cincinnati, Ohio 45202 and Commonwealth of Kentucky ("Commonwealth"), having its principal office at 702 Capital Avenue, Frankfort, Kentucky 40601.

BACKGROUND:

Whereas:

- A. Pursuant to RFP 758 1500000003-5 issued July 11, 2014 (as amended from time to time, the "RFP"), the Commonwealth selected Macquarie Infrastructure Developments LLC ("Macquarie") to design, build, finance, operate and maintain a statewide fiber optic network, known generally as the NG-KIH System, to provide broadband services to the citizens of the Commonwealth;
- B. On December 22, 2014, the Commonwealth and Macquarie entered into a master agreement (as amended from time to time, the "Master Agreement") in respect of the Project;
- C. In 2015, Macquarie assigned its rights and obligations under the Master Agreement to KentuckyWired Infrastructure Company, Inc. ("Project Co.");
- D. On September 3, 2015, the Commonwealth and Project Co. entered into a project agreement (as amended from time to time, the "Project Agreement") in respect of the Project and to facilitate the financing of the Project. As part of this Project Agreement, Operations Co. and its subcontractors have specifically designed and tailored the NG-KIH System to the geographic area of the Commonwealth in a series of "rings." Project Co. then entered into a Project Implementation Agreement with KentuckyWired Operations Company, LLC ("Operations Co.");
- E. A component of the NG-KIH System is located in northern Kentucky;
- F. Cincinnati Bell can provide fiber facilities in the "ring" located in northern Kentucky that fits the design of the NG-KIH System;
- G. Pursuant to and prior to the assignment of the Master Agreement, Macquarie had negotiated an IRU Term Sheet with Cincinnati Bell (attached as part of Schedule 20 to the Project Agreement and designated a "Third Party Infrastructure Agreement"), the cost of which was included within the scope of the Project Agreement. To further facilitate the financing of the Project, the Commonwealth wishes to contract directly with Cincinnati

Bell for the IRU, so on October 20, 2015, it entered into the present Third Party Infrastructure Agreement ("Third Party Agreement") between the Commonwealth and Cincinnati Bell and for the Commonwealth to assume certain obligations under the Third Party Infrastructure Agreement;

- H. By separate agreement, Commonwealth and Cincinnati Bell have agreed to an Indefeasible Right of Use ("IRU"), for a fiber optic communication system (the "System") to be built along the route depicted in Exhibit A-1;
- I. The, Commonwealth desires to engage Cincinnati Bell, and Cincinnati Bell agrees to provide to Commonwealth, installation service for the System upon the terms and conditions set forth below;

NOW, THEREFORE, in consideration of the mutual promises set forth below, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

ARTICLE I DEFINITIONS

Capitalized terms and phrases used in this Installation Agreement shall have the following meanings:

"Acceptance Date" shall have the definition set forth in Exhibit B.

"Acceptance Standards" means the standards set forth in Exhibit B with respect to the testing and condition of the Commonwealth Fibers.

"Affiliates" means, with respect to any entity, an entity controlling, controlled by, or under common control with such entity by means of direct or indirect majority equity ownership.

"Cable" means the fiber optic cable included in the System and fibers contained therein that includes the Commonwealth Fibers and associated splicing connections, splice boxes and vaults, and conduit.

"Central Office (CO)" a place where telephone companies terminate customer lines and locate switching equipment to interconnect those lines with networks.

"Claim" means any claim, action, dispute, or proceeding of any kind between Commonwealth (or any of its Affiliates, successors or assigns) and Cincinnati Bell (or any of its Affiliates, successors, or assigns) and any other claim, transaction, occurrence, loss, liability, expense or other matter arising out of, in connection with, or in any way related to, the Commonwealth IRU, the Cable, the System, this Installation Agreement or any other instrument, arrangement or understanding related to the Commonwealth IRU.

"Commonwealth" shall have the definition as defined in the introductory paragraph of this Installation Agreement.

"Commonwealth Fibers" means those certain Fibers in which Commonwealth shall be granted an IRU as set forth in Section 2.1 of the IRU Agreement.

"Commonwealth IRU" shall have the definition set forth in Section 2.1 of the IRU Agreement.

"Costs" means actual costs incurred and computed in accordance with the established accounting procedures used by Cincinnati Bell to bill third parties for reimbursable projects and generally accepted accounting principles. Such costs include the following:

- (a) labor costs includes wages, salaries, benefits, and payroll taxes. The Overhead allocable to such labor costs shall be charged at a rate of 38% of wages and salaries; and
- (b) other direct costs and out-of-pocket expenses on a pass-through basis (such as equipment, materials, supplies, contract services, costs of capital, Required Rights, sales, use or similar taxes, etc.) plus twenty percent (20%) of such expenses.

"Effective Date" shall have the definition set forth in the introductory paragraph of this Installation Agreement.

"Fiber Acceptance Testing" means the fiber acceptance testing described in Exhibit B.

"Fibers" means any optical fibers contained in the System, including the Commonwealth Fibers, the fibers of Cincinnati Bell and the fibers of any third party in the System excluding, however, any fibers granted (whether through ownership, IRU, lease, or otherwise) to Government Authorities in exchange for use of streets, rights of way, or other property under the jurisdiction of such entity.

"Force Majeure Event" shall have the definition set forth in Section 16.1.

"Government Authority" means any federal, state, regional, county, town, municipal, territorial, or tribal government, whether domestic or foreign, or any department, agency, bureau, or other administrative, regulatory or judicial body of any such government, including, without limitation, any multinational body obtaining authority from any of the foregoing.

"Indefeasible Right of Use" or "IRU" is an exclusive, indefeasible right to use the specified property, but does not convey title, ownership, or rights of possession in any real or personal property.

"Indemnitee" shall have the definition set forth in Section 9.1.

"Indemnitor" shall have the definition set forth in Section 9.1.

"Installation Agreement" shall have the definition set forth in the first paragraph, above.

"Installation Contract Price" shall have the definition set forth in Section 3.1.

"IRU Agreement" means the Dark Fiber Indefeasible Right of Use Agreement between the parties entered into on 26th May, 2016.

"Lateral Segments" means the individual portions of the Route in the Cincinnati Bell Incumbent Local Exchange Carrier territory identified in Exhibit A-2 and as depicted in Exhibit A-1.

"Major Segment" means the individual identified portions of the Route between each of the city pairs listed in bold in Exhibit A-2 and as depicted in Exhibit A-1.

"NG-KIH" means the Next Generation Kentucky Information Highway Project (AKA KentuckyWired).

"Network Center" means a telecommunications point of presence and, unless the context indicates otherwise, refers to a Cincinnati Bell-designated point of presence along the route listed in Exhibit A-2.

"Representatives" shall have the definition set forth in Section 14.1.

"Route" shall mean the route, including spurs, upon which the System is or will be constructed and installed consisting of the Major Segments.

"Segment" means a discrete portion of the System and may refer to a Span, a portion between two points of presence or a point of presence and a System end point, or a portion of the System affected by a relocation or other circumstance.

"Span" means a portion of the System between two Transmission Sites or between a Transmission Site and a point of presence or System end point.

"Third Party Agreement" means the early works agreement signed by Cincinnati Bell and the Commonwealth on or about October 20, 2015.

"Transmission Sites" means the Cincinnati Bell designated optical amplifier, regenerator, or junction sites along the System Route as specified in Exhibit A-2.

ARTICLE II FIBERS TO BE INSTALLED

2.1. Fiber Routes. In exchange for the Commonwealth's timely payment of the Installation Contract Price, Cincinnati Bell hereby agrees to install the Commonwealth Fibers-as described in Exhibit A-2, which Commonwealth Fibers shall include, but shall not be limited to, the following items within Cincinnati Bell's operating territory:

- (a) [REDACTED] specific strands of Fibers designated by Cincinnati Bell in the Cable in the Major Segment from Highland Heights Northern Kentucky

University ("NKU") Campus to the Lexington Meet Point in the [REDACTED].

- (b) [REDACTED] specific strands of Fibers designated by Cincinnati Bell in the Cable in the Major Segment from the [REDACTED] to the Louisville Meet Point in the [REDACTED].
- (c) [REDACTED] specific strands of Fibers designated by Cincinnati Bell in the Cable in the Major Segment from Highland Heights NKU Campus to the Maysville Meet Point in the [REDACTED].
- (d) [REDACTED] specific strands of Fibers designated by Cincinnati Bell in the Cable in the Major Segment from the [REDACTED] to the Highland Heights NKU Campus via the [REDACTED].
- (e) Sufficient strands of dark Fibers to meet the requirements for the Service Level 1 Sites and Service Level 3 Sites, as noted in Exhibit A-3 and designated by Cincinnati Bell in the Cable in the Lateral Segments included in Cincinnati Bell's Incumbent Local Exchange Carrier territory by the deadlines set out in Section 4.1.

The Commonwealth understands and acknowledges that Commonwealth Fibers will be installed on or in existing aerial or underground facilities in order to mitigate schedule delays and that only new infrastructure shall be built in accordance with the Cable Installation Specification attached as Exhibit B. Cincinnati Bell's installation service does not include installation of any equipment used to transmit capacity over or "light" the Fibers.

ARTICLE III CONSIDERATION

3.1. Installation Contract Price. Commonwealth shall pay Cincinnati Bell the total sum of Five Million, Five Hundred Seventeen Thousand, Four Hundred and Thirty Five Dollars (\$5,517,435) ("Installation Contract Price") as provided in Section 3.3.

3.2. Method of Payment. Commonwealth shall pay the Installation Contract Price and any other payments pursuant to this Installation Agreement to account or accounts designated by Cincinnati Bell in United States currency.

3.3. Time of Payment. The Installation Contract Price to be paid by Commonwealth shall be payable as follows:

- (a) the sum of \$3,000,000 already paid by Commonwealth and received by Cincinnati Bell;
- (b) the sum of \$2,241,790 shall be paid within 30 days of the Effective Date;
- (c) the sum of \$190,315 shall be paid within 30 days of the Effective Date to reimburse Cincinnati Bell for additional permitting costs; and
- (d) in the event Commonwealth engages Cincinnati Bell to complete the K-12 installation, the sum of \$85,330 shall be paid in accordance with section 4.4 below.

The Commonwealth shall not be obligated to make any payments to Cincinnati Bell until each of this Installation Agreement, the IRU Agreement and all applicable Accommodation Space Agreements have been executed, subject to neither party unreasonably withholding or delaying execution of such agreements.

3.4. Changes to the Route. The Installation Contract Price stated in Section 3.1 is based upon the Fiber Routes and design specifications as of the date of execution of this Installation Agreement. In the event a Fiber Route or design specification is, at the Commonwealth's request, changed subsequent to the execution of this Installation Agreement, in addition to the stated Installation Contract Price, Commonwealth shall pay Cincinnati Bell any incremental costs of such change as agreed to by the Parties in a Change Order. Cincinnati Bell shall not agree to or be bound by any alteration of a Fiber Route or design specification until and unless the Parties have agreed upon and signed a Change Order. Subject to Cincinnati Bell having done reasonable due diligence, the Contract Price stated in Section 3.1 is also based upon the known permitting requirements as expressed by the permitting authorities as of the date of execution of this Installation Agreement. In the event a permitting authority imposes additional

requirements not theretofore expressed, Commonwealth shall pay Cincinnati Bell any incremental costs necessary to comply with such requirements.

ARTICLE IV CONSTRUCTION

4.1. Fiber Acceptance Testing. Exhibit B sets forth Fiber Acceptance Testing procedures and test deliverables that Cincinnati Bell shall provide to Commonwealth and the procedures for determining the Acceptance Date of a Segment. Notwithstanding the foregoing, and subject to Section 4.2, all Commonwealth Fibers shall meet the Acceptance Standards as described in Exhibit B on or before the following dates:

- (a) those Commonwealth Fibers identified in Section 2.1(b) and 2.1(d): October 28, 2016;
- (b) those Commonwealth Fibers identified in Section 2.1(a): January 27, 2017;
- (c) those Commonwealth Fibers identified in Section 2.1(c): March 31, 2017; and
- (d) those Commonwealth Fibers identified in Section 2.1(e), subject to the construction requirements for K-12 Sites: March 31, 2017.

4.2. Permitting Cycle. All completion deadlines for a given route herein are conditioned upon Cincinnati Bell receiving from the Commonwealth's designated permitting authorities all complete and final permits necessary to install the Commonwealth Fibers for such route on or before July 1, 2016. All completion deadlines shall be extended on a day for day basis by the number of days a given complete and final permit is delayed beyond July 1, 2016, provided, however, that Cincinnati Bell has submitted a full and complete application for such permit prior to May 27, 2016. The July 1, 2016 permit deadline for a given route shall be extended day for day to the extent Cincinnati Bell fails to submit full and complete applications for permits by May 27, 2016.

4.3. K-12 Sites. Subject to the award of a contract by the Commonwealth for service delivery to the K-12 Sites and written notification from the Commonwealth to complete the installation, Cincinnati Bell shall ensure that such Commonwealth Fibers will meet the Acceptance Standards by the later of (a) March 31, 2017 or (b) a date that is the earlier of 120 days after the Commonwealth delivers such written notice or 60 days after site walks for all of the K-12 Sites have been completed. For the avoidance of doubt, delayed installation of Commonwealth Fibers to K-12 Sites will not affect Cincinnati Bell's claim to payment of the full Installation Contract Price in accordance with Section 3.3.

4.4. K-12 Site Installation Cost. Commonwealth shall pay to Cincinnati Bell the sum of up to eighty five thousand, three hundred thirty dollars (\$85,330) within 30 days of all Commonwealth Fibers serving K-12 Sites meeting the Acceptance Standards as defined in

Exhibit B, such amount to be paid with respect to individual K-12 Sites as completed, as priced by site according to a schedule to be provided by Cincinnati Bell to the Commonwealth.

Acceptance Date Obligations. As of the Acceptance Date of the Commonwealth Fibers in any Segment, Cincinnati Bell hereby represents and warrants that such Segment and the Commonwealth Fiber in such Segment shall be free of defects in materials and workmanship and is designed, engineered, installed, and constructed, at a minimum, in accordance with prevailing industry standards and the specifications set forth in Exhibits B and C.

4.5. Provision of As-Built Drawings. Within two (2) months after the Acceptance Date of a Segment, Cincinnati Bell will provide Commonwealth with as-built drawings for the Segment complying with the specifications for as-built drawings as set forth in Exhibit D.

ARTICLE V TERM AND TERMINATION

5.1. Term. Subject to the Commonwealth's rights to terminate this Installation Agreement for default or convenience in accordance with 200 KAR 5:312, this Installation Agreement shall terminate on the Acceptance Date of the last Commonwealth Fiber or on such earlier date as may be provided elsewhere in this Installation Agreement.

5.2. Effect of Termination. No termination of this Installation Agreement shall affect the rights or obligations of any party hereto:

- (a) with respect to any payment hereunder for services rendered prior to the date of termination;
- (b) pursuant to Articles X (Audit Rights), XIII (Indemnification), XIV (Limitation of Liability), XV (Insurance), XVI (Taxes and Governmental Fees), XVIII (Confidentiality), XIX (Prohibition on Improper Payments), XXI (Dispute Resolution), or XXII (Rules of Construction) or Sections 7.2 (Exclusion of Warranties); or
- (c) pursuant to other provisions of this Installation Agreement that, by their sense and context, are intended to survive termination of this Installation Agreement.

5.3. Termination for Convenience. In the event of a termination for convenience by the Commonwealth pursuant to 200 KAR 5:312 as to any Commonwealth Fiber, Cincinnati Bell may submit to the Commonwealth a claim for any amounts it may be due, including amounts due for an executed Change Order for which the Commonwealth has not made payment at the time of termination for convenience and for any other billable services provided under this Agreement for which it has not been paid as of the date of termination for convenience. Any outstanding performance deductions payable to the Commonwealth in accordance with Exhibit B of the IRU Agreement will be offset against any and all amounts payable to Cincinnati Bell.

ARTICLE VI AUDIT RIGHTS

6.1. Subject to the Commonwealth's obligations under the Kentucky Open Records Act, each party shall keep such books and records (which shall be maintained on a consistent basis and substantially in accordance with generally accepted accounting principles) and shall readily disclose the basis for any charges (except charges fixed in advance by this Installation Agreement or by separate agreement of the parties) or credits, ordinary or extraordinary, billed or due to the other party under this Installation Agreement and shall make them available for examination, audit, and reproduction by the other party and its duly authorized agents or representatives for a period of one (1) year after such charge or credit is billed or due.

ARTICLE VII WARRANTIES

7.1. Warranties Relating to Installation Agreement Validity. In addition to any other representations and warranties contained in this Installation Agreement, each party hereto represents and warrants to the other that:

- (a) it has the full right and authority to enter into, execute, deliver, and perform its obligations under this Installation Agreement; and
- (b) it has taken all requisite corporate action to approve the execution, delivery, and performance of this Installation Agreement; and
- (c) its execution of and performance under this Installation Agreement shall not violate any applicable existing regulations, rules, statutes, or court orders of any local, state, or federal government agency, court, or body; and
- (d) this Installation Agreement constitutes a legal, valid and binding obligation enforceable against such party in accordance with its terms.

7.2. EXCLUSION OF WARRANTIES. EXCEPT AS SPECIFICALLY SET FORTH IN THIS INSTALLATION AGREEMENT, CINCINNATI BELL MAKES NO WARRANTY TO GRANTEE OR ANY OTHER ENTITY, WHETHER EXPRESS, IMPLIED OR STATUTORY, AS TO THE INSTALLATION, DESCRIPTION, QUALITY, MERCHANTABILITY, COMPLETENESS, USEFUL LIFE, FUTURE ECONOMIC VIABILITY, OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY FIBERS, THE SYSTEM, OR ANY SERVICE PROVIDED HEREUNDER OR DESCRIBED HEREIN, OR AS TO ANY OTHER MATTER, ALL OF WHICH WARRANTIES ARE HEREBY EXPRESSLY EXCLUDED AND DISCLAIMED.

ARTICLE VIII DEFAULT

8.1. Default and Cure. The Commonwealth may terminate this Installation Agreement for either default or convenience in accordance with 200 KAR 5:312. Except as set forth in Section 8.2, a party shall not be in default under this Installation Agreement until one of the following events occurs: (i) either party fails to make a payment of any undisputed amount required under this Installation Agreement and such failure continues for more than thirty (30) days after such party receives written notice of such failure from the non-defaulting party or (ii) either party fails to perform or comply with any other obligation, agreement, term, or provision of this Installation Agreement applicable to it and such failure continues for more than thirty (30) days after such party receives written notice of such failure from the non-defaulting party. Any event of default may be waived at the non-defaulting party's option. Upon the failure of a party to timely cure any such default after notice thereof from the other party and expiration of the above cure periods, then the non-defaulting party may, subject to the terms of Articles XIV (Limitation of Liability) and XXI (Dispute Resolution), pursue any legal remedies it may have under applicable law or principles of equity relating to such breach.

8.2. Disputed Amounts. Notwithstanding any provision to the contrary in Sections 8.1 or 8.3, either party shall have the right to dispute any amount due under this Installation Agreement, provided that (i) the disputing party provides written notice of such dispute to the other party by the date that any such amount is due; (ii) the disputing party presents a written statement of any billing discrepancies to the other party in reasonable detail together with supporting documentation and evidence within thirty (30) days after the date that any such amount is due; and (iii) the disputing party negotiates in good faith with the other party to resolve any such dispute within sixty (60) calendar days of the date any such amount is due. Commonwealth shall pay disputed amounts mutually agreed upon and in favor of Cincinnati Bell within thirty (30) days of the resolution of such dispute. Cincinnati Bell shall credit disputed amounts mutually agreed upon and in favor of Commonwealth on Commonwealth's next invoice. In the event the parties fail to mutually resolve or settle the dispute within sixty (60) days of the date any such disputed amount is due, the parties will pursue resolution of the dispute in accordance with Article XXI of this Installation Agreement.

8.3. Failure to Pay. If Commonwealth fails to pay any undisputed amounts owed under this Installation Agreement, and fails to pay all of such amount, within fifteen (15) days of Cincinnati Bell's notice that it will cease installing the Commonwealth Fibers, Cincinnati Bell may, in addition to the remedies set forth in Section 8.1, cease installation of the Commonwealth Fibers. Cincinnati Bell shall resume providing installation services, only if Commonwealth (a) pays Cincinnati Bell's bona fide estimate of the Costs incurred or to be incurred pursuant to the preceding sentence and this sentence, and (b) pays all past-due amounts with applicable interest. In the event that, upon a failure to pay all Installation Contract Price payments under Section 3.3 above, Commonwealth does not take the actions described in clauses (a) and (b) above in this Section 8.3 within thirty (30) days after Cincinnati Bell's cessation of services as described above in this Section, then, in addition to all other remedies described in this Section 8.3, this Article XII or otherwise in this Installation Agreement, Cincinnati Bell shall have the right to terminate the Installation Agreement with respect to the Commonwealth Fibers if Commonwealth fails to

pay all amounts in arrears, together with applicable interest, within thirty (30) days of receipt of further notice from Cincinnati Bell.

8.4. Interest. If Commonwealth fails to make any payment under this Installation Agreement when due, such amounts shall accrue interest, from the date such payment is due until paid, including accrued interest, at a rate equal to one percent (1 %) per month or fraction thereof or, if lower, the highest percentage allowed by law.

ARTICLE IX INDEMNIFICATION

9.1. Indemnification. To the extent permitted by law, including but not limited to Section 177 of the Kentucky Constitution, the Commonwealth and Cincinnati Bell (each party known individually as the "Indemnitor") hereby agrees to indemnify, defend, protect and hold harmless the other party and its employees, officers, directors, members, and managers (the "Indemnitee"), from and against, and assumes liability for: (i) claims made by a third party for any injury, loss or damage to any person, tangible property or facilities of any person to the extent arising out of or resulting from the negligent or intentional acts or omissions of the Indemnitor, its officers, employees, servants, Affiliates, agents, contractors, licensees, invitees and vendors, or any entity for whom it is in law responsible, arising out of or in connection with the performance by Indemnitor of its obligations under this Installation Agreement; (ii) any claims, liabilities or damages arising out of any violation by Indemnitor of any regulation, rule, statute or court order of any Governmental Authority in connection with the performance by Indemnitor of its obligations under this Installation Agreement; and (iii) any liability to a third party arising directly or through one or more intermediaries from an action or claim brought by the Indemnitor against such third party, but only to the extent such third party has a right of indemnification, impleader, cross claim, contribution or other right of recovery against the Indemnitee for any indirect, special or consequential damages awarded against such third party in favor of the Indemnitor.

9.2. Material and Continuing Obligation. To the extent such Party is legally permitted to do so, each Party's obligation to indemnify, defend, protect, and save the other Party harmless is a material obligation to the continuing performance of the other Party's obligations hereunder.

ARTICLE X LIMITATION OF LIABILITY

10.1. EXCLUSION OF INDIRECT DAMAGES. SUBJECT TO THE COMMONWEALTH'S AUTHORITY TO SEEK APPLICABLE DAMAGES FOR CINCINNATI BELL'S DEFAULT AS PROVIDED FOR IN 200 KAR 5:312, IF ANY, AND NOTWITHSTANDING ANY PROVISION OF THIS INSTALLATION AGREEMENT TO THE CONTRARY, NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY OR ITS EMPLOYEES, OFFICERS, DIRECTORS, MEMBERS, MANAGERS, FACILITY OWNERS, LENDERS AND AFFILIATES FOR ANY SPECIAL, INDIRECT, OR PUNITIVE DAMAGES, OR DAMAGES FOR LOST REVENUE OR LOST PROFITS, WHETHER

FORESEEABLE OR NOT, ARISING OUT OF OR IN CONNECTION WITH SUCH PARTY'S PERFORMANCE OR FAILURE TO PERFORM ITS RESPECTIVE OBLIGATIONS HEREUNDER, INCLUDING, BUT NOT LIMITED TO LOSS OF PROFITS OR REVENUE (WHETHER ARISING OUT OF TRANSMISSION INTERRUPTIONS OR PROBLEMS, ANY INTERRUPTION OR DEGRADATION OF SERVICE OR OTHERWISE), OR CLAIMS OF CUSTOMERS WHETHER OCCASIONED BY ANY OBLIGATIONS PERFORMED BY, OR FAILED TO BE PERFORMED BY, THE OTHER PARTY OR ANY OTHER CAUSE WHATSOEVER, INCLUDING BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE, OR STRICT LIABILITY, ALL CLAIMS FOR WHICH DAMAGES ARE HEREBY SPECIFICALLY WAIVED.

ARTICLE XI INSURANCE

11.1. Obligation to Obtain. During the term of the Installation Agreement, Cincinnati Bell and the Commonwealth, or the Commonwealth's contractors, shall obtain and maintain not less than the following insurance:

- (a) Commercial General Liability insurance on an occurrence form with a combined single limit of \$1,000,000 per occurrence and annual aggregates of \$1,000,000, for bodily injury and property damage including coverage for premises-operations, blanket contractual liability, broad form property damage, personal injury liability, independent contractors, products/completed operations and explosion, collapse and underground. The limit requirements stated above may be met through a combination of primary and excess policies.
- (b) Worker's Compensation insurance complying with the laws of the State or States having jurisdiction over each employee of the respective parties and Employer's Liability Insurance with limits not less than \$1,000,000 each accident, \$1,000,000 disease each employee, and \$1,000,000 disease policy limit.
- (c) Automobile Liability Insurance with a combined single limit of \$2,000,000 each occurrence for bodily injury and property damage, to include coverage for all owned, non-owned, and hired vehicles.

The limits set forth above are minimum limits and shall not be construed to limit the liability of either party.

11.2. Policy Requirements. Each party shall obtain and maintain the insurance policies required above with companies rated A- or better by Best's Key Rating Guide or with a similar rating by another generally recognized rating agency. Each party shall provide the other with an insurance certificate evidencing the insurance requirements of this Article. Each party warrants that they shall notify the other party not less than thirty (30) calendar days prior to any cancellation or non-renewal of the insurance. If either party provides any of the foregoing

coverages through a claims-made policy basis, that party shall cause such policy or policies to be maintained for at least three (3) years beyond the expiration of this Installation Agreement.

11.3. Waiver of Subrogation. The parties shall each obtain from the insurance companies providing the coverages required by this Installation Agreement a waiver of all rights of subrogation or recovery in favor of the other party and, as applicable, its members, managers, shareholders, Affiliates, assignees, officers, directors, and employees or any other party entitled to indemnity under this Installation Agreement to the extent of such indemnity.

11.4. Blanket Policies. Nothing in this Installation Agreement shall be construed to prevent either party from satisfying its insurance obligations pursuant to this Installation Agreement under a blanket policy or policies of insurance that meet or exceed the requirements of this Article.

11.5. Self-Insurance. A self-insured program providing for of up to a maximum retention or deductible of five million dollars (\$5,000,000) shall satisfy the requirements of this Article 15.

ARTICLE XII TAXES AND GOVERNMENTAL FEES

12.1. Taxation of Commonwealth. Cincinnati Bell understands that as of the date of this contract, Commonwealth is a tax-exempt entity. Accordingly, and notwithstanding the remainder of this Article, Cincinnati Bell shall not, directly or indirectly, seek reimbursement or contribution from the Commonwealth for any tax for which an exemption applies. For any taxes or fees, including but not limited to universal service funding, that may be assessed against Cincinnati Bell for which the Commonwealth is not exempt, or if the Commonwealth Fibers are assigned to a non-tax exempt entity, Cincinnati Bell will collect and remit such taxes and fees to the appropriate governmental agency.

12.2. Cincinnati Bell Obligations. Cincinnati Bell shall timely report and pay any and all sales, use, income, gross receipts, excise, transfer, ad valorem or other taxes, and any and all franchise fees or similar fees properly assessed against it due to its construction of the System.

ARTICLE XIII NOTICE

13.1. Notice Addresses. Unless otherwise provided in this Installation Agreement, all notices and communications concerning this Installation Agreement shall be in writing and addressed to the other party as follows:

If to Commonwealth: Commonwealth of Kentucky
Attention: Secretary
Capital Annex
Room 383
702 Capital Avenue
Frankfort, KY 40601
Facsimile No. 502-564-6785

If to Cincinnati Bell: Cincinnati Bell Telephone Company LLC
Attn: Carrier Services Contract Management
221 E 4th Street, 103-920
Cincinnati, OH 45202
Facsimile No. 513-381-2910

or at such other address as may be designated in writing to the other party.

13.2. Notice and Invoice Delivery. Unless otherwise provided herein, notices and invoices shall be hand delivered, sent by registered or certified U.S. Mail, postage prepaid, or by commercial overnight delivery service, or transmitted by facsimile, and shall be deemed served or delivered to the addressee or its office when received at the address for notice specified above when hand delivered, upon confirmation of sending when sent by facsimile, on the day after being sent when sent by overnight delivery service, or three (3) United States Postal Service business days after deposit in the mail when sent by U.S. mail.

ARTICLE XIV CONFIDENTIALITY

14.1. Confidentiality Obligation. To the extent permitted by the Kentucky Open Records Act, if either party provides confidential information to the other or, if in the course of performing under this Installation Agreement or negotiating this Installation Agreement a party learns confidential information regarding the facilities or plans of the other, the receiving party shall (a) protect the confidential information from disclosure to third parties with the same degree of care accorded its own confidential and proprietary information, but in any case with at least reasonable care and (b) refrain from using such confidential information except in negotiating or performing under this Installation Agreement. Notwithstanding the above, a party may provide such confidential information to its directors, officers, members, managers, employees, agents, and contractors, consultants ("Representatives"), Affiliates, financial institutions, underlying facility owners, potential assignees (who are bound by a written agreement restricting use and disclosure of confidential information), and Representatives of Affiliates, in each case whose access is reasonably necessary. Each such recipient of confidential information shall be informed by the party disclosing confidential information of its confidential nature in writing, and shall be directed to treat such information confidentially and shall agree to abide by these provisions. In any event, each party shall be liable (with respect to the other party) for any breach of this provision by any entity to which that party discloses confidential information. The terms of this Installation Agreement (but not its execution or existence) shall be considered confidential information for purposes of this Article, except as set

forth in Section 14.3. The obligations set forth in this Section shall survive expiration or termination of this Installation Agreement for a period of two (2) years, except that, with respect to any confidential information designated by the disclosing party as a trade secret, and entitled to protection as such, the obligations set forth in this Section shall survive such expiration or termination indefinitely.

14.2. Permitted Disclosures. Notwithstanding any other provision herein, neither Cincinnati Bell nor Commonwealth shall be required to hold confidential any information that:

- (a) becomes publicly available other than through the recipient;
- (b) is required to be disclosed by a governmental, regulatory authority, or judicial order, rule, or regulation or proceedings with respect to this Installation Agreement or a party's obligations as a publicly held company, provided that a party subject to such requirement shall promptly notify the other party of such requirement;
- (c) is independently developed by the disclosing party;
- (d) becomes available to the disclosing party without restriction from a third party;
- (e) is required by its lender and is given to such lender on a confidential basis; or
- (f) to the extent disclosure by the receiving party is required by applicable law or regulation.

14.3. Goodwill and Publicity. Neither party shall use the name, trade name, service mark, or trademark of the other in any promotional or advertising material without the prior written consent of the other. The parties shall coordinate and cooperate with each other when making public announcements related to the terms of this Installation Agreement and each party shall have the right to promptly review, comment upon, and approve any publicity materials, press releases, or other public statements by the other party that refer to, or that describe any aspect of, this Installation Agreement. Notwithstanding the above, either party may, without the other party's approval but after allowing the other party a reasonable opportunity to comment on a proposed press release, issue a press release announcing execution of this Installation Agreement. Such release may disclose the estimated revenues/payments under this Installation Agreement, and the identity of the other party as long as such release does not disclose the nature of the Installation Agreement and any per-Fiber Mile or other per-unit pricing under this Installation Agreement.

ARTICLE XV PROHIBITION ON IMPROPER PAYMENTS

15.1. Neither party shall use any funds received under this Installation Agreement for illegal or otherwise "improper" purposes. Neither party shall pay any commission, fees or

rebates to any employee of the other party. If either party has reasonable cause to believe that one of the provisions in this Article has been violated, it, or its representative, may audit the books and records of the other party for the sole purpose of establishing compliance with such provisions.

ARTICLE XVI FORCE MAJEURE

16.1. Excused Performance. Neither Cincinnati Bell nor Commonwealth shall be in default under this Installation Agreement with respect to any delay in its performance (other than a failure to make payments when due) caused by any of the following conditions (each a "Force Majeure Event"): (a) act of God; (b) fire; (c) flood; (d) material shortage or unavailability not resulting from the responsible Party's failure to timely place orders or take other necessary actions therefor; (e) government codes, ordinances, laws, rules, regulations, or restrictions; or (f) war, acts of terrorism or civil disorder; (g) power outages and cable cuts not due to Cincinnati Bell's negligence; or (h) any other cause beyond the reasonable control of such party. The party claiming relief under this Article shall promptly notify the other in writing of the existence of the Force Majeure Event relied on, the expected duration of the Force Majeure Event, and the cessation or termination of the Force Majeure Event. The party claiming relief under this Article shall exercise commercially reasonable efforts to minimize the time for any such delay.

ARTICLE XVII DISPUTE RESOLUTION

17.1. It is the intent of Cincinnati Bell and Commonwealth that any disputes which may arise between them, or between the employees of each of them, be resolved as quickly as possible. Quick resolution may, in certain circumstances, involve immediate decisions made by the parties' representatives. When such resolution is not possible, and depending upon the nature of the dispute, the parties hereto agree to resolve such disputes in accordance with the provisions of this Article. Any election herein to arbitrate shall not be binding upon any party and is in addition to any other remedies available under the Installation Agreement or law.

17.2. Commonwealth and Cincinnati Bell shall each designate, by separate letter, representatives as points of contact and decision making with respect to the obligations and rights of the parties, said letters to be furnished by each party to the other within thirty (30) days from the date of this Installation Agreement. Any disputed issues arising during the term of this Installation Agreement shall in all instances be initially referred to the parties' designated representatives. The parties' designated representatives shall render a mutually agreeable resolution of the disputed issue, in writing, within seventy-two (72) hours of such referral. Either party may modify the designated representative upon written notice to the other party.

17.3. Any claims or disputes arising under the terms and provisions of this Installation Agreement, or any claims or disputes which the parties' representatives are unable to resolve within the seventy-two (72) hour time period, shall continue to be resolved between the parties' representatives if mutually agreeable, or may be presented by the claimant in writing to the other party within thirty (30) days after the circumstances which gave rise to the claim or dispute took

place or become known to the claimant, or within thirty (30) days after the parties' representatives fail to achieve resolution, whichever is later. The written notice shall contain a concise statement of the claim or issue in dispute, together with relevant facts and data to support the claim.

17.4. Any controversies or disputes arising out of or relating to this Installation Agreement that are not resolved in accordance with the preceding procedure may upon agreement of both Cincinnati Bell and Commonwealth be referred to nonbinding arbitration under the then current Commercial Arbitration Rules of the American Arbitration Association. When so referred, the parties shall endeavor to select a mutually acceptable arbitrator knowledgeable about issues relating to the subject matter of this Installation Agreement. In the event the parties are unable to agree to such a selection, each party will select an arbitrator and the arbitrators in turn shall select a third arbitrator. The arbitrator(s) shall not have the authority, power or right to alter, change, amend, modify, add or subtract from any provision of this Installation Agreement or to award punitive damages.

17.5. During the continuance of any arbitration proceeding, each party shall continue to perform their respective obligations under this Installation Agreement.

17.6. Should any controversy or dispute not be resolved through dispute resolution, the provisions of KRS 45A.230-245 shall apply to this Installation Agreement.

ARTICLE XVIII RULES OF CONSTRUCTION

18.1. Interpretation. The captions or headings in this Installation Agreement are strictly for convenience and shall not be considered in interpreting this Installation Agreement or as amplifying or limiting any of its content. Words in this Installation Agreement that import the singular connotation shall be interpreted as plural, and words that import the plural connotation shall be interpreted as singular, as the identity of the parties or objects referred to may require. References to "person" or "entity" each include natural persons and legal entities, including corporations, limited liability companies, partnerships, sole proprietorships, business divisions, unincorporated associations, governmental entities, and any entities entitled to bring an action in, or that are subject to suit in an action before, any state or federal court of the United States. The word "including" means "including, but not limited to." "Days" refers to calendar days and references to "business days" exclude Saturdays, Sundays and holidays recognized by the Commonwealth and the United States Government. Unless expressly defined herein, words having well-known technical or trade meanings shall be so construed.

18.2. Cumulative Remedies; Insurance. Except as set forth to the contrary herein, any right or remedy of Cincinnati Bell or Commonwealth shall be cumulative and without prejudice to any other right or remedy, whether contained herein or not. The provisions of Article XV (Insurance) shall not be construed as limiting the Indemnitor's obligations pursuant to Article XIII (Indemnification) or other provisions of this Installation Agreement.

18.3. No Third-Party Rights. Nothing in this Installation Agreement is intended to provide any legal rights to anyone not an executing party of this Installation Agreement except under the indemnification and insurance provisions.

18.4. Agreement Fully Negotiated. This Installation Agreement has been fully negotiated between and jointly drafted by Cincinnati Bell and Commonwealth.

18.5. Industry Standards. Except as otherwise set forth herein, for the purpose of this Installation Agreement, the generally accepted standards of performance within the telecommunications industry in the relevant market shall be the measure of whether a party's performance is reasonable and timely.

18.6. Cross References. Except as the context otherwise indicates, all references to Exhibits, Articles, Sections, Subsections, Clauses, and Paragraphs refer to provisions of this Installation Agreement.

18.7. Limited Effect of Waiver. The failure of either Cincinnati Bell or Commonwealth to enforce any of the provisions of this Installation Agreement, or the waiver thereof in any instance, shall not be construed as a general waiver or relinquishment on its part of any such provision, but the same shall nevertheless be and remain in full force and effect.

18.8. Severability. If any term, covenant or condition in this Installation Agreement shall, to any extent, be invalid or unenforceable in any respect under the laws governing this Installation Agreement, the remainder of this Installation Agreement shall not be affected thereby, and each term, covenant or condition of this Installation Agreement shall be valid and enforceable to the fullest extent permitted by law.

18.9. No Partnership Created. The relationship between Cincinnati Bell and Commonwealth shall not be that of partners, agents, or joint venturers for one another, and nothing contained in this Installation Agreement shall be deemed to constitute a partnership or agency agreement between them for any purposes, including federal income tax purposes. Cincinnati Bell and Commonwealth, in performing any of their obligations hereunder, shall be independent contractors or independent parties and shall discharge their contractual obligations at their own risk.

ARTICLE XIX ASSIGNMENT

19.1 Conditions to Effective Assignment. An assignment (or other transfer) of this Installation Agreement or a party's rights or obligation hereunder to any other party shall not be effective without (a) the prior written consent of the non-assigning party, except as provided herein, (b) the written agreement of the assignee to be bound by all terms and conditions of this Installation Agreement including, without limitation, the indemnification provisions and limitations on liability and recourse set forth in this Installation Agreement, and (c) such assignee's agreement to cure all prior defaults of the assigning party under this Installation Agreement. If assignment is permitted under this Article without the non-assigning party's consent, then the assignor shall give prior written notice of the assignment to the non-assigning

party.

19.1. Agreement Binds Successors. This Installation Agreement and the rights and obligations under this Installation Agreement (including the limitations on liability and recourse set forth in this Installation Agreement benefiting the other party and the Released Parties) shall be binding upon and shall inure to the benefit of Cincinnati Bell and Commonwealth and their respective permitted successors and assigns.

19.2. Change in Control Not an Assignment. Notwithstanding any presumptions under applicable state law that a change in control of a party constitutes an assignment of an agreement, a change in control of a party, not made for purposes of circumventing restrictions on assignment or of depriving the other party of rights under this Agreement, shall not be deemed an assignment for purposes of this Agreement.

19.3. Right to Subcontract. Cincinnati Bell may subcontract for testing, maintenance, repair, restoration, relocation, or other operational and technical services it is obligated to provide hereunder or may have the underlying facility owner or its contractor perform such obligations, but Cincinnati Bell in any event shall remain fully and directly responsible to Commonwealth for the performance of such services and obligations.

ARTICLE XX ENTIRE AGREEMENT; AMENDMENT; EXECUTION

20.1. Integration; Exhibits. This Installation Agreement constitutes the entire and final agreement and understanding between Cincinnati Bell and Commonwealth with respect to the subject matter hereof and supersedes all prior agreements relating to the subject matter hereof, which are of no further force or effect. The Exhibits referred to herein are integral parts hereof and are made a part of this Installation Agreement by reference. Where the terms of the Installation Agreement and an Exhibit conflict, the Exhibit will control.

20.2. No Parole Amendment. This Installation Agreement may only be amended, modified, or supplemented by an instrument in writing executed by duly authorized representatives of Cincinnati Bell and Commonwealth.

20.3. Counterparts. This Installation Agreement may be executed in one or more counterparts, all of which taken together shall constitute one and the same instrument.

20.4. Facsimile Delivery. This Installation Agreement may be duly executed and delivered by a party by execution and facsimile delivery of the signature page of a counterpart to the other party, provided that, if delivery is made by facsimile, the executing party shall promptly deliver a complete counterpart that it has executed to the other party.

IN WITNESS WHEREOF and in confirmation of their consent to the terms and conditions contained in this Installation Agreement and intending to be legally bound hereby, Cincinnati Bell and Commonwealth have executed this Installation Agreement as of the dates set forth below.

**CINCINNATI BELL TELEPHONE
COMPANY LLC**

By: 
Print Name: Gary Peddicord
Title: General Manager, Carrier Sales
Date: May 26, 2016

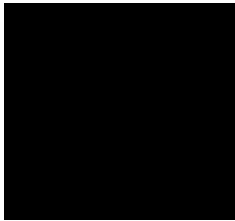
COMMONWEALTH OF KENTUCKY

By: 
Print Name: William M. Landrum III
Title: Secretary, Finance and Administration Cabinet
Date: May 26, 2016

EXHIBIT A



EXHIBIT A-1



[Map attached]

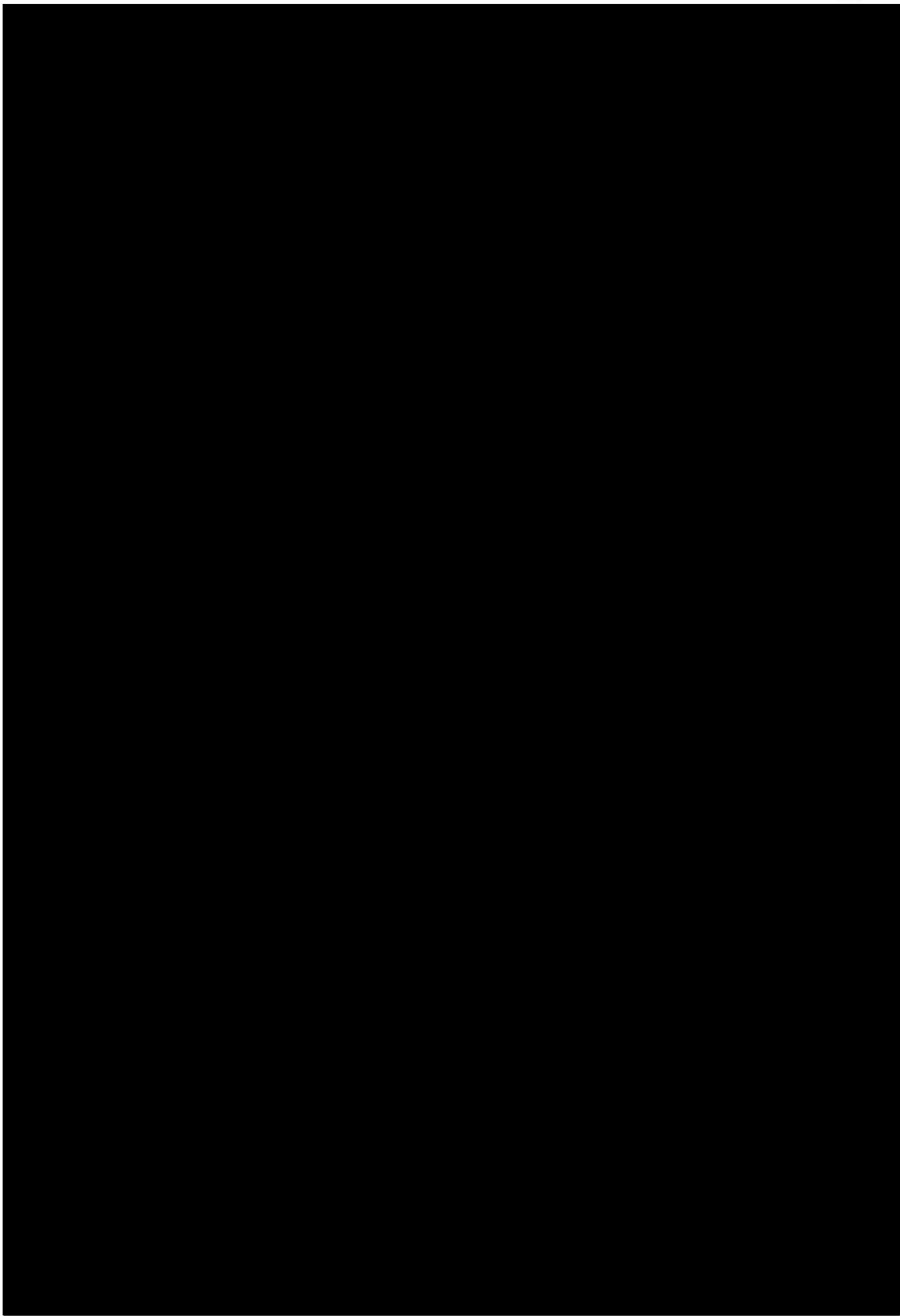


EXHIBIT A-2

Description of Major Segment and Fibers

[Spreadsheet attached]



KY Wired Cincinnati
Bell Site List 5-23-16.

EXHIBIT A-2

Seq ID	Site Category	Site Name	Site Address	City	County	V.B.H. - X	V.B.H. - Y	Build Priority	Service Category	Segment Type	Seg. Number	Fluence Rate	W/land Height	Locatable Issue	Geo ID	Notes	Notes
13	E-12	Beechwood Elementary	54 Beechwood Rd	Ft Mitchell	Kenton	39.04569189	-84.55535408	2	SLA1	Anchor	1A	1A	42.5 km		N		
15	E-12	Bellevue High School	101 Center Street	Bellevue	Campbell	39.10120096	-84.48109982	2	SLA1	Anchor	1A	1A	6.0 km		N		
17	E-12	Boone Co. Board	1180 US Hwy 42	Florence	Boone	38.98311218	-84.65407196	2	SLA1	Anchor	1A	1A			N		
20	E-12	Campbell Co. Alexandria	51 Orchard St	Alexandria	Campbell	39.968158	-84.329517	2	SLA1	Anchor	5	5			N		
42	E-12	Campbell Ind. Board	25 E 7th St	Campbell	Kenton	39.083214	-84.5029526	2	SLA1	Anchor	1A	1A			N		
48	E-12	Dayton Independent Board	5100 Dayton Ave	Dayton	Kenton	39.11696021	-84.47010963	2	SLA1	Anchor	2A	2A			N		
54	E-12	Eranger-Herrner Ind	500 Graves Ave	Eranger	Kenton	39.02048057	-84.60741424	2	SLA1	Anchor	1A	1A			N		
59	E-12	Fort Thomas Board	28 N Fort Thomas Ave	Fort Thomas	Campbell	39.0754039	-84.48115102	2	SLA1	Anchor	1A	1A	48.0 km		N		
65	E-12	Gallatin County Board of Ed	600 E Main St	Warsaw	Gallatin	38.785434	-84.892676	2	SLA1	Anchor	1A	1A	49.0 km		N		
68	E-12	Grant Co. Middle School	505 School Rd	Grant	Kenton	38.66735199	-84.58031918	2	SLA1	Anchor	1A	1A			N		
103	E-12	Ludlow Ind. Board	525 Elm St	Ludlow	Dry Ridge	39.09126274	-84.5580249	2	SLA1	Anchor	1A	1A			N		
115	E-12	Newport Middle School	30 W 8th St	Newport	Campbell	39.08151439	-84.4946342	2	SLA1	Anchor	1A	1A			N		
153	E-12	Pendleton County Board of Ed	2525 Hwy 27N	Falmouth	Pendleton	38.68747321	-84.3573873	2	SLA1	Anchor	1A	1A			N		
156	E-12	Silver Grove Ind. Board	101 W 3rd St	Silver Grove	Campbell	39.04151176	-84.47371316	2	SLA1	Anchor	1A	1A			N		
158	E-12	Southgate Ind. Board	600 W 1st St	Southgate	Campbell	39.04151176	-84.47371316	2	SLA1	Anchor	1A	1A			N		
166	E-12	Summit View Middle School	5007 Madison St	Independence	Campbell	38.9594334	-84.3430391	2	SLA1	Anchor	1A	1A			N		
174	E-12	Walton-Vernon Middle School	37 School Rd	Walton	Boone	38.66735199	-84.58031918	2	SLA1	Anchor	1A	1A			N		
194	E-12	Walton-Vernon Middle School	37 School Rd	Walton	Boone	38.66735199	-84.58031918	2	SLA1	Anchor	1A	1A			N		
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EXHIBIT B

Fiber Splicing, Testing, and Acceptance Standards and Procedures

1. Installation Testing

A. During installation, Cincinnati Bell shall use an optical time domain reflectometer ("OTDR") to test splices and a 1-km launch cable to test pigtail connectors. Such installation tests shall be uni-directional and performed at 1550 nm.

B. If the combined front-end connectors and pigtail splice loss value exceeds 0.8 dB, Cincinnati Bell shall break the splice and re-splice until the loss value is 0.8 dB or less. If Cincinnati Bell is unable to achieve a loss value of 0.8 dB or less after five total splicing attempts, the splice shall be marked as Out-of-Spec ("OOS"). The .8 dB spec does not apply to fibers that are being spliced that have different mode-fields. Splice loss may be higher due to the mode-field mismatch.

C. If the loss value for a splice, when measured in one direction with an OTDR, exceeds 0.3 dB, Cincinnati Bell shall break the splice and re-splice until the loss value is 0.3 dB or less, provided that, if Cincinnati Bell is not able to achieve a loss value of 0.3 dB after three total splicing attempts, then Cincinnati Bell shall mark the splice as OOS. The .3 dB loss spec does not apply to fibers that are being spliced that have different mode-fields. Splice loss may be higher due to the mode-field mismatch.

2. End-to-End Testing

A. After Cincinnati Bell has established end-to-end connectivity on the fibers during installation, it shall:

- perform bi-directional OTDR end-to-end tests to record splice loss measurements,
- test continuity to confirm that no fibers have been "frogged" or crossed at any splice points, and
- record loss measurements using a light source and a power meter.

B. At Fiber termination points, the pigtail splice loss shall be no greater than .80 dB, and the reflection level at such termination points shall be equal to or greater than -50dB.

C. When a Fiber has been spliced, the splice loss shall not be greater than .3 dB in any one direction.

D. Cincinnati Bell shall perform the bi-directional OTDR end-to-end testing at both 1310 nm and 1550 nm, provided that 1310 nm OTDR tests are not required (i) for Spans longer than 64 kilometers or (ii) where the fiber being tested is not manufactured to support 1310 nm optical signals. The results of such tests for any given Span shall not be deemed within specification unless showing loss measurements between fiber distribution panels at each end of

such Span in accordance with the loss specifications set forth by the cable manufacturer's specifications for dB per kilometer loss as shown in Exhibit B. Cincinnati Bell shall measure and verify losses for each splice point in both directions and average the loss values. Cincinnati Bell shall mark any splice points as OOS that have a loss value, based on uni-directional OTDR testing, in excess of 0.3 dB. Cincinnati Bell shall mark any Span as OOS that has an average splice loss on that Span in excess of .15dB. Any such splice points or Span shall be subject to Section 4, below.

3. Post-Installation Testing

After performing permanent splicing (in conjunction with repair of a cable cut, replacement of a segment of cable, or other work after initial installation and splicing of the cable), the test procedures set forth in Section 2 (End-to-End Testing) of this Exhibit shall apply to the relevant fibers and cable segments. The provisions in Sections 5 (OTDR Equipment and Settings) and 6 (Acceptance Test Deliverables) of this Exhibit, that are relevant to such testing shall also apply. Cincinnati Bell may adopt any alternative methods of testing that are generally accepted in the industry and that provide sufficient data to fulfill the objectives of the tests set forth in this Exhibit.

4. Out-of-Spec Splices

Out-of-Spec splices or Spans shall be noted, but shall not preclude Acceptance of a fiber if the Out-of-Spec condition does not affect transmission capability (based on use of then-prevailing telecommunications industry standards applicable to equipment generally used with the relevant type of fiber) or create a significant possibility of an outage. In the event the Commonwealth is later able to reasonably establish that the OOS splice or Span affects service, Cincinnati Bell shall take necessary action to bring the splice or Span into compliance with the applicable specifications under Section 1 of this Exhibit.

5. OTDR Equipment and Settings

Cincinnati Bell shall use OTDR equipment and settings that are, in its reasonable opinion, suitable for performing accurate measurements of the fiber installed. Such equipment and settings shall include, without limitation, equipment models compatible for testing and able to support the following settings:

A. Index of refraction settings:

	1310 nm	1550 nm	1625nm
Corning SMF-28	1.4675	1.4681	1.4681

- B. All 1625 nm testing is conditioned upon the Commonwealth notifying Cincinnati Bell of its purchase of or bona fide intent to install electronics operating at that wavelength. Cincinnati Bell shall have 90 days in which to complete testing and if necessary provide fiber that meets the specifications.

6. Acceptance Test Deliverables

Cincinnati Bell shall provide a file containing the following information for the relevant fibers and cable segments:

- A. Verification of end-to-end fiber continuity with power level readings for each fiber taken with a stable light source and power meter.

- B. Verification that the loss at each splice point is either (i) in accordance with 2.C. above or (ii) in accordance with the requirements of Section 4 of this Exhibit.

- C. The final bi-directional OTDR test data, with distances.

- D. Cincinnati Bell will provide required documentation for new fiber that meets G.652D specification. E. In the event the Commonwealth notifies Cincinnati Bell of its purchase or bona fide intent to install electronics operating at 1625 nm on a Lateral Segment, Cincinnati Bell shall provide documentation for Chromatic Dispersion and PMD measurements for such Lateral Segment within 90 days and if necessary provide fiber that meets the specifications.

7. General Testing Procedures and Acceptance

- A. As soon as Cincinnati Bell determines that the Commonwealth Fibers in a given Span meet the Acceptance Standards such that there is Fiber connectivity between all fiber distribution panels along such Span or connectivity to Commonwealth requested spliced off-net location, it shall provide the deliverables set forth in Section 6 of this Exhibit. Commonwealth shall have fourteen (14) calendar days after receipt of test deliverables for any Span to provide Cincinnati Bell written notice of any bona fide determination that the Commonwealth Fibers on such Span do not meet the Acceptance Standards. Such notice shall identify the specific data

that indicate a failure to meet the Acceptance Standards.

B. Upon receiving written notice pursuant to Subsection 7.A of this Exhibit, Cincinnati Bell shall either:

- (i) expeditiously take such action as shall be reasonably necessary to cause such portion of the Commonwealth Fibers to meet the Acceptance Standards and then re-test the Commonwealth Fibers in accordance with the provisions of this Exhibit; or
- (ii) provide Commonwealth written notice that Cincinnati Bell disputes Commonwealth's determination that the Commonwealth Fibers do not meet the Acceptance Standards.

After taking corrective actions and re-testing the Commonwealth Fibers, Cincinnati Bell shall provide Commonwealth with a copy of the new test deliverables and Commonwealth shall again have all rights provided in this Article with respect to such new test deliverables. The cycle described above of testing, taking corrective action and re-testing shall take place until the Commonwealth Fibers meet the Acceptance Standards.

C. If Cincinnati Bell provides notice to Commonwealth pursuant to Clause B (ii), Commonwealth shall within five (5) calendar days of such notice designate by written notice to Cincinnati Bell the names and addresses of three reputable and independent fiber optic testing companies. Cincinnati Bell shall designate one of such companies to conduct an independent re-test of the Commonwealth Fibers for the relevant Span. If, after such re-testing, the testing company determines that the Commonwealth Fibers

- (i) meet the Acceptance Standards, then Commonwealth shall pay the testing company's charges for performing the testing and the acceptance date for the relevant Span shall be fourteen (14) days after Cincinnati Bell provided its test deliverables.
- (ii) do not meet the Acceptance Standards, then Cincinnati Bell shall pay the testing company's charges for performing the testing and shall perform the corrective action and re-testing set forth in Subsection B(i).

D. Unless Commonwealth provides a written objection pursuant to Subsection A, the acceptance date of a Span shall occur on the fourteenth (14th) day after Cincinnati Bell provides the test deliverables for that Span, or, if earlier, the date Commonwealth provides written acceptance of such Span. Commonwealth's acceptance (pursuant to this subsection or of Subsection C) of the last Span within a Major Segment shall constitute "Acceptance" of the Commonwealth Fibers for such Major Segment. The date of Acceptance for each Major Segment shall constitute the "Acceptance Date" of such Major Segment.

E. Acceptance testing shall progress Span by Span along the System as Cable splicing progresses, so that test deliverables may be reviewed in a timely manner. The

Commonwealth shall have the right, but not the obligation, to have an individual present to observe such testing and Cincinnati Bell shall provide the Commonwealth at least seven (7) days' prior notice of its testing schedule. Within thirty (30) calendar days after Cincinnati Bell conclusion of the Fiber Acceptance Testing in any given Span, Cincinnati Bell shall provide the Commonwealth with a copy of the test deliverables.

EXHIBIT C

Cable Installation Specifications

1. Material

- Existing fiber, conduit and poles will be used to the maximum extent possible, as is/where is, and may not comply with portions of these cable installation specifications. Only new construction shall follow these specifications.
- Steel or PVC conduit shall be minimum schedule 40 wall thickness.
- Any exposed steel conduit, brackets or hardware (e.g., bridge attachments) shall be hot-dipped galvanized after fabrication.
- All new split steel shall be flanged.
- Handholes shall have a minimum H-15 loading rating.
- Manholes shall have a minimum H-20 loading rating.
- Warning signs shall display universal do not dig symbol, "Warning-Buried Fiber-Optic Cable," company name and logo, local and emergency One Call toll-free numbers.

2. Minimum Depths

Minimum cover required in the placement of the conduit/cable shall be forty-two inches (42"), except in the following instances:

- Existing construction will be used as is/where is and may not comply with portions of these cable installation specifications as existing fiber is typically buried at a depth of 30 to 36 inches.
- The minimum cover across streams, river washes, and other waterways shall be sixty inches (60") below the clean out line or existing grade, whichever is greater.
- At locations where the cable crosses other subsurface utilities or other structures, the cable/conduit shall be installed to provide a minimum of twelve inches (12") of vertical clearance from the utility/obstacle. The cable/conduit can be placed above the utility/obstacle, provided the minimum clearance and applicable minimum depth can be maintained; otherwise the cable/conduit shall be installed under the existing utility or other structure.
- In rock, the cable/conduit shall be placed to provide a minimum of eighteen inches (18") below the surface of the solid rock, or provide a minimum of forty-two inches (42") of total cover, whichever requires the least rock excavation.
- Where existing pipe is used, current depth is sufficient.

3. Buried Cable Warning Tape

All cable/conduit shall be installed with buried cable warning tape. The warning tape shall be:

- laid a minimum of twelve inches (12") above the cable/conduit

- generally placed at a depth of twenty-four inches (24") below grade and directly above the cable/conduit
- a minimum of three inches (3") wide and display "Warning-Buried Fiber-Optic Cable," a company name, logo and emergency one-call toll-free number repeated every twenty-four inches (24").

4. Conduit Construction

- Conduits may be placed by means of trenching, plowing, jack and bore, multi-directional bore or directional bore.
- Conduits shall generally be placed on a level grade parallel to the surface, with only gradual changes in grade elevation.
- Steel conduit shall be joined with threaded collars, Zap-Lok or welding. (Welding is the preferred method.)
- All jack and bores shall use HDPE or steel conduit.
- All directional or mini-directional bores shall use HDPE or steel conduit.
- Any cable placed in swamp or wetland areas shall be placed in HDPE, PVC, or steel conduit.

Where required by the permitting agency:

- all crossings of paved city, county, state, federal, and interstate highways, or railroad crossings shall be encased in steel conduit,
- all longitudinal cable runs under paved streets shall be placed in steel or concrete encased PVC conduit,
- all cable placed in metropolitan areas shall be placed in steel or concrete covered PVC conduit, and
- at all foreign utility/underground obstacle crossings, steel conduit shall be placed and shall extend at least five feet (5') beyond the outer limits of the obstacle in both directions,

5. Innerduct Installation

- No cable shall be placed directly in any split/solid steel conduit without innerduct. This might not be the case in existing fiber.
- Innerduct(s) shall extend beyond the end of all conduits a minimum of eighteen inches (18"). No cable shall be placed directly in any split/solid steel conduit without innerduct. This might not be the case with existing fiber.

6. Cable Installation in Conduit

- The cable shall be installed using either a sealed pneumatic cable blowing system or a powered pulling winch and hydraulic powered assist pulling wheels.
- The maximum pulling force to be applied to the cable shall be six hundred pounds

(600 lbs.).

- Sufficient pulling assists shall be available and used to insure the maximum pulling force is not exceeded at any point along the pull.
- The cable shall be lubricated at the reel and all pulling assist locations.
- A pulling swivel breakaway rated at six hundred pounds (600 lbs.) shall be used at all times.
- Splices shall be allowed only at planned junctions and reel ends.
- All splices shall be contained in a handhole or manhole.
- A minimum of twenty meters (20m) of slack cable shall be left in all intermediate handholes and manholes.
- A minimum of thirty meters (30m) of slack cable shall be left in all splice locations.
- A minimum of fifty meters (50m) of slack cable shall be left in Transmission Sites and points of presence.
- PVC conduit/innerduct may be split, with the cable installed inside the split duct and plowed in.

7. Manholes and Handholes

- Manholes shall be placed in traveled surface streets and shall have locking lids. This might not be the case with existing fiber.
- Handholes shall be placed in all other areas, and be installed with a minimum of eighteen inches (18") of soil covering lid. This might not be the case with existing fiber.

8. EMS Markers

EMS Markers shall be placed directly above the lid of all buried handholes or shall be fabricated into the lids of the handholes.

9. Cable Markers (Warning Signs)

- Cable markers shall be installed at all changes in buried cable running line direction, splices, pull boxes, assist-pulling locations, and at both sides of street, highway or railroad crossings.
- Markers shall be spaced at intervals of no more than five hundred feet (500') apart in metropolitan areas (areas where there is either extensive development and improvement or rapid growth (new building construction)) and within line of sight (not to exceed one thousand feet (1,000')) in non-metropolitan areas.
- Markers shall be positioned so that they can be seen from the location of the cable and generally set facing perpendicular to the cable running line.
- Splices and pull boxes shall be marked on the cable marker post.



10. Updating of Specifications

Cincinnati Bell may revise these Cable Installation Specifications to include new procedures, materials, or processes so long as the changes achieve the objectives of the specifications set forth above and are in accordance with, or superior to, then-current telecommunications industry standards.

EXHIBIT D
As-Built Drawing Specifications

1. Alignment Sheets

A. As-Built Alignment Sheets shall include:

- cable and conduit information
- splice locations
- assist point locations with permanent structures
- Transmission Site locations
- optical distances to the nearest Transmission Sites from each splice location.

B. As-Built Alignment Sheets shall be updated with actual construction field data.

C. The scale of As-Built Alignment Sheets shall not exceed 1" = 200' in metropolitan areas (areas where there is either extensive development and improvement or rapid growth (new building construction)) or 1" = 500' in non-metropolitan areas.

2. Format

Drawings shall be "blue lines", as such term is understood in the industry. Cincinnati Bell may, after the Acceptance Date, adopt any replacement method of creating or providing drawings that is generally accepted in the industry and that provides equivalent information.

3. Transmission Site Floor Plans

Floor plans for Transmission Sites shall show rack placement and assignment for Commonwealth's Footprints. Cincinnati Bell shall provide hard copies of such floor plans one time free of charge. Soft copies of such floor plans are available for Two hundred and no/100 dollars (\$200.00) per site. The foregoing charge is subject to the Periodic Rate Adjustment, as defined in Article I of the Installation Agreement.