COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND CABLE

CRC Communications LLC, d/b/a Otelco	)	
	)	
v.	)	D.T.C. 22-4
	)	
Massachusetts Electric Company d/b/a	)	
National Grid, and Verizon New England Inc.	)	
	)	

AFFIDAVIT OF DAVID L. WOLANIN

David L. Wolanin hereby deposes and says:

1. I am a Senior Engineer – Outside Plant in Network Engineering and Operations at Verizon. I am the Engineering Project Manager for all third-party, aerial make-ready work in Massachusetts and Rhode Island in my role in Verizon's License Administration Group ("LAG"). I have over thirty years' experience in engineering and utility pole line design, including from the electric perspective and 23 years with Verizon. My responsibilities include working with our pole attachment licensees and applicants to resolve any make-ready issues that arise during the licensing process, and I am familiar with the company's policies with respect to the proper and safe attachment of third-party facilities to the poles, determining the make-ready work needed on a pole and what work is properly billable as make-ready. I offer this affidavit, based on my personal knowledge and experience except where otherwise noted, in support of the response of Verizon New England Inc. ("Verizon MA") filed herewith.

2. Verizon MA's records indicate that the company received one application from Otelco for attachments in Belchertown on or about May 25 and then most of the other applications for Belchertown on or about June 24 and 25, 2021. Verizon MA received the first Otelco application for Northampton on or about July 30 but did not receive the bulk of the

Northampton applications until late August to early September. Verizon MA received Otelco's applications for Palmer in late October and early November. Otelco has submitted 116 applications to Verizon MA to attach to poles in Belchertown, Northampton and Palmer and subsequently cancelled nine of those, leaving 97 applications to attach to 6,529 poles in those communities.

3. Verizon MA has issued make-ready invoices on 84 of those 97 applications, has received payment on six of those estimates and has forwarded that work to its Construction group, and is awaiting payment from Otelco on the other 78 invoices. To my knowledge, Verizon MA has not denied Otelco access to any pole for which it has applied. Verizon MA continues to perform pole survey and reconciliation work in response to Otelco's pending pole attachment applications and will forward to its Construction group any additional applications for which Otelco pays the make-ready estimate.

4. Overall, Otelco has applied to attach to over 22,000 Verizon MA poles in Western Massachusetts. Other Verizon personnel and I explained to Otelco in discussions in 2021 that over 22,000 poles could not be surveyed within the constraint of 45 days – that the sheer volume, added to the company's existing work load for other customer's applications, would far exceed our survey team resources, and that additional time would be necessary.

5. To my knowledge, Verizon MA has not charged Otelco for the cost of remediating pre-existing NESC violations on its poles. Verizon MA's policy is to charge an applicant only for the make-ready work that is needed to prepare the pole to accommodate the applicant's attachment. We have made clear to Otelco that Verizon MA is willing to review any charges that Otelco believes were improperly included in its make-ready invoices and to revise its make-ready invoices as necessary.

6. I understand that Otelco has claimed that the work Verizon MA has billed Otelco on the five poles identified in Exhibit C to the Allen Declaration filed with the Complaint is for work to remediate pre-existing code violations on the poles. Attached hereto as Exhibit C is my analysis of Verizon MA's make-ready survey data for these poles. As shown in Exhibit C, four of the five poles currently have at least 40" of space between the lowest power line and the highest communications cable, in compliance with the NESC's requirement. The make-ready work on these poles is required to provide enough room to attach Otelco's facilities in compliance with applicable clearance requirements, at the pole and at the middle of the span to the next pole. On the remaining pole, the current attachments are out of compliance with the NESC. Those attachments could be rearranged to comply with the code without replacing the pole, but even then, there is not enough room on the pole for another attachment, and the pole would still need to be replaced to make room for Otelco. Verizon MA properly billed Otelco for the estimated costs of the work on all five of these poles.

7. The mere fact that attachments on a pole do not comply with the NESC or other applicable standards does not necessarily mean that there will be no make-ready work on the pole billable to the new attacher. Where a non-compliant pole would require work to accommodate a new attachment even in the absence of the code violations, then the new attacher is obligated to pay for that make-ready work. For example, where remediating a non-compliant condition on a pole would require replacing the pole with a taller one, Verizon MA would not bill the cost of the pole replacement to the new attacher. On the other hand, if the non-compliant condition could be fixed without replacing the pole but the remediated pole would not be tall enough to accommodate the new attachment, then the new attacher would be required to pay for the pole replacement, because that work was made necessary by the new attachment.

8. Verizon MA's policy on opposite-side construction, also known as boxing, is designed to ensure the safety and reliability of the poles and Verizon MA's network and the company's ability to manage the poles efficiently. Verizon MA's policy on boxing is laid out in detail in the document attached hereto as Exhibit A, entitled, Verizon Partner Solutions, Description of Limiting Circumstances to Use of Boxing and Extension Arms on Verizon Poles, revised May 22, 2019, also available on Verizon's website for wholesale customers at: http://www22.verizon.com/wholesale/attachments/pcl/Verizon_Guidelines_on_Boxing_and_Extension_Arms(052219).pdf. Boxing is also addressed in Exhibit B attached hereto, a Verizon Network Operations and Engineering Flash on Pole Attachments, Issue 3.4 dated May 12, 2020,

9. As explained in Exhibit A, boxing a pole can make future work on that pole more difficult complicated and therefore less safe and more expensive. Boxing always compromises safety to some extent, so it is safer not to box a pole. That is true even if the construction complies with the NESC and the Blue Book. Boxing makes a pole more difficult and less safe for a technician to climb. It also complicates pole replacement where the new pole must be threaded between the existing cables on either side of it, if additional space cannot be found on the new pole to accommodate all of the attachments on a single side. Boxing can also result in cables weaving from one side of a pole to the other side of the next pole in a line of poles, again complicating future work on that line, and potentially making it less safe and more time-consuming and costly.

10. Due to these concerns, and as explained in Exhibit A, Verizon MA boxes poles only in limited circumstances based on its assessment, on a case-by-case basis of the factors described in Exhibit A, and Verizon MA allows third-parties to box poles only where Verizon

MA would do the same and only in compliance with applicable codes. *See* Exhibit A and Exhibit B § 3.2.3.

11. None of the poles identified by Otelco in Exhibit E to the Allen Declaration is suitable for boxing. Attached hereto as Exhibit E, is my assessment of the circumstances of each of those poles on a pole-by-pole basis in light of the factors in Exhibit A.

12. Opposite-side construction can often be accomplished consistent with the NESC. But the minimum safety requirements of the NESC alone are not always sufficient to adequately protect the integrity, reliability and safety of the network, and nothing in the NESC prevents a pole owner from applying more stringent requirements in the interests of safety and protecting the integrity of the network.

13. Verizon MA admits that at a virtual meeting on or about February 2, 2022, it declined to consider opposite side construction for Otelco's pole applications. That position was not consistent with Verizon MA's policy as set forth in Exhibit A, and Verizon MA has subsequently advised Otelco of its actual policy and provided the link to Exhibit A on Verizon MA's website. Verizon MA has consistently worked with Otelco, including at that meeting, in a good faith effort to reduce make-ready costs while still protecting the safety and integrity of the network.

14. Verizon MA's policy requiring third parties to attach their facilities above those of Verizon MA on a pole is based on engineering, safety and economic reasons. To my knowledge, the policy has been in place for decades and is an industry standard. The reasons for the policy are stated in detail in Exhibit B. In short, Verizon MA's copper cable is much heavier than any other cable in the communications space on the poles in almost every instance, and it will therefore sag more in the middle of the span between poles than will other parties' facilities.

As explained in Exhibit B, attaching lighter, third-party facilities below the copper cable makes it much more difficult, if not impossible, to maintain required clearances between facilities at the middle of the span. That causes potential safety issues for pole workers and may result in damage to the facilities. I explained these concerns to Otelco's representatives at a virtual meeting on February 2, 2022, in which they proposed to attach their facilities below those of Verizon MA.

15. Exhibit B also explains how the presence of third-party facilities below those of Verizon MA on a pole would impose additional costs on Verizon MA when the pole eventually needs to be replaced. *See* Exhibit B, § 3.1.3. On the other hand, the industry standard of locating electrical facilities at the top of the pole, generally followed by municipal and licensee facilities and finally telephone company facilities at the bottom provides a consistent means of identifying facilities in the case of emergency. *Id.* § 3.1.5.

16. Attached hereto as Exhibit D is a copy of Intercompany Operating Procedure # 8 of the Joint Ownership Agreement between Verizon MA and Massachusetts Electric, Verizon MA's joint owner of the poles in Belchertown, Northampton and Palmer, Massachusetts

Signed under the pains and penalties of perjury this 11th day of May, 2022.

David L. Wolanin

VERIZON PARTNER SOLUTIONS

Subject: Description of Limiting Circumstances Relating to Use of Boxing and Extension Arms on Verizon Poles

Audience: Pole Attachment License Applicants

This document clarifies circumstances in which use of boxing and extension arms[1] may be approved by Verizon as attachment methods with respect to Verizon poles.

As a general matter, use of boxing and extension arms is prohibited except in limited circumstances. Boxing and extension arms can result in the creation of unsafe working conditions on poles and overload poles resulting in safety and reliability hazards. In addition, boxing complicates the process of pole placing and removal, increasing costs for all utilities involved in that activity. Finally, there are a wide range of measures that can be used to avoid the need for boxing and extension arms, including alternatives such as overlashing, supply-space construction, lowering or raising existing attachments as space permits, sagging in, pole replacement, pole-top extenders, and other techniques.

Approval of use of boxing and extension arms shall be determined by Verizon in its sole discretion on a case-by-case basis as part of the licensing process. Verizon reserves the right to limit use of such attachment techniques when necessary to ensure safety, reliability, and compliance with sound engineering practices, or when other suitable alternative attachment methods or make-ready activities are available. Use of boxing and extension arms is prohibited in circumstances in which Verizon would not itself use such techniques.

Factors to be considered by Verizon in the determination of whether the use of boxing or extension arms is appropriate for a particular attachment on a particular pole include, but are not limited to, the factors listed below. Verizon will use the same factors to determine whether applicants can use the pole attachment techniques of boxing and extension arms as it uses to determine whether Verizon can use such pole attachment techniques for its own attachments. No single factor is necessarily dispositive, and the fact that one or more such factors may be present for a particular attachment on a particular pole does not mean that use of these attachment techniques will be authorized by Verizon for that attachment on that pole if the presence of other factors militates against employing such attachment techniques in that instance:

- whether all necessary consents have been obtained to the use of such methods under the terms of any applicable joint use or joint ownership agreement;

- whether the particular pole in question is already boxed;

- whether other poles in that same pole line are already boxed;

[1] The term extension arms is used in this document to denote extension arms, brackets, bolts, cross-bars, straps, and any other technique the purpose, result or effect of which is to maintain an attachment at some horizontal distance from the pole.

• whether there are other attachment methods or make-ready work that could be performed that obviate the need for use of boxing or extension arms;

• whether use of boxing or extension arms on a particular pole can obviate the need for otherwise unnecessary or overly-complicated pole replacement activity, service outages, or significant other make-ready work (e.g., crossbow, hub, riser or other facilities relocation);

• whether the particular pole in question is able to support attachments using such methods from the perspective of safety, reliability, and sound engineering principles;

• whether existing attachments on the pole, including third-party equipment such as traffic lights, street lights, or antennas, are compatible with the proposed use of boxing or extension arms;

• whether use of boxing or extension arms triggers or avoids application of additional permitting requirements such as might relate to poles on private property or in sensitive areas (e.g., environmental areas or historical districts); and

• whether use of such techniques enables continued alignment of facilities (e.g., use of an extension arm on an offset pole to enable cable alignment with attachments on adjacent poles).

Notwithstanding the forgoing, all attachments to Verizon poles must meet all applicable federal, state, county and municipal codes and regulations as well as those found in the most current edition of the National Electric Safety Code (available from IEEE), the Telcordia Blue Book – Manual of Construction Procedures (SR-1421, Issue 6, Mar 2017) (available from Telcordia), the terms of Licensee's Pole Attachment Agreement with Verizon, and Verizon's practices and the terms of the Joint Use Agreements in effect in your area (available from Verizon).

This document is provided for informational purposes only. It is subject to change at any time. Revisions will be made available by posting on Verizon's website. You may direct any questions you may have to the License Administration Group in the area in which you are doing business, as indicated at:

https://www22.verizon.com/wholesale/contactus/poleconduit/Access-to-Poles-Conduits-Rights-Way.html

The version control number for this document is 1.1. This version supercedes and replaces all prior versions.

WIRELINE NETWORK OPERATIONS & ENGINEERING Issue 3.4 Date: 05-12-20
Document Number: **2001-00834-OSP**

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Subject **Pole Attachments**		
Issuing Organization **Network Operations & Engineering**		
Supersedes 2001-00834-OSP Issue 3.4	**Supplements**	**References** Telcordia SR-1421 (Blue Book)

To: All Network Operations & Engineering Personnel

Abstract:

This flash describes the different methods by which Licensees can attach to Verizon poles.

Issue 2.0 - Reissue to add language that demonstrates why Licensees should not be permitted to attach below Verizon facilities. Please refer to Section 2.1.

Issue 3.0 - To reflect terms and conditions that apply to a Licensee's use of a pole top extension to which they can attach their facilities. Please refer to Sections 2.2.1, 2.4 and new Section 2.5.

Issue 3.1 - This document is being redistributed to reinforce the types of attachment techniques permitted by Verizon. In accordance with the FCC Order 10-84, § III(A) Nondiscriminatory Use of Attachment Techniques, released May 20, 2010, Verizon is required to allow Licensees to use the same pole attachment techniques that it uses for itself. Please refer to new Section 1.3

Issue 3.2 – This document is being redistributed to notify affected personnel that on February 26, 2015 the FCC issued Order FCC – 15 – 24A1 (Title II Order) "Report and Order on Remand, Declaratory Ruling and Order" to reflect the inclusion of broadband providers. The Commission concluded that broadband Internet access service (BIAS) is a "telecommunications service" and as such, is subject to the same rules. Broadband Internet access service includes both fixed and mobile broadband Internet access service.

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Issue 3.4 – This document is being reissued to update Section 3.2.2 – Overlash Construction, to reflect changes required in accordance with the FCC 18 -111 Order. Additionally, effective June 11, 2018 the FCC restored Broadband Internet Access Service (BIAS) to an information service classification. See *Restoring Internet Freedom WC Docket No. 17-108, Declaratory Ruling, Report and Order*, and *Order 33 FCC Rcd. 311 (2017).* Although Broadband Internet Access Service is no longer a telecommunications service (it had been a telecommunications service from June 12, 2015 through June 10, 2018), the Company's policy is to treat Broadband Internet Access Service as if it were a telecommunications service for the purposes of the FCC's pole attachment rules.

Effective Date: Upon Receipt.

Contact: Gloria L. Harrington **Telephone:** 928-300-0229

Approved by: James Slavin **Title:** Manager

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1.0 VERIZON EMPLOYEE COMPLIANCE

1.1 Verizon Code of Conduct and Company Policy Compliance

All Verizon employees are required to understand and adhere to the Verizon Code of Conduct and all Company policies.

The Code of Conduct and Company polices are in place to govern the conduct of employees and the conduct between employees, customers, competitors and the numerous business providers, including suppliers, vendors, contractors and agents.

Employees may never violate the Verizon Code of Conduct or any Company policy.

1.2 Customer Proprietary Network Information (CPNI) Compliance Policy

The CPNI policy describes and governs the permissible uses and disclosures of Customer Proprietary Network Information (CPNI).

The policy is applicable to customers of all Verizon Wireline organizations, consumer, small business, medium business, large business, government and online accounts. The policy governs activities where CPNI data is used internally, provided to a Customer, shared among affiliates or disclosed to a third party.

It is each employee's responsibility to understand and comply with the CPNI policy along with the Verizon Code of Conduct and all other Company policies.

2.0 INTRODUCTION

2.1 BACKGROUND

Since the passage of the Telecommunications Act of 1996, Verizon has experienced a significant increase in demand for the use of space on its poles by Authorized Licensees. This rise in demand has led to an increase in make-ready efforts required to create additional capacity for these attachees. For the most part, the costs associated with these efforts are reimbursable. However, often overlooked are the opportunity costs associated with this work for which Verizon receives no reimbursement. It is these costs, which are created each time resources are used to perform make-ready, instead of, for example, proactive maintenance or capital construction, that are the most significant.

To alleviate this problem, Outside Plant Engineering should attempt to minimize the use of make-ready to create space on poles to accommodate additional attachments owned by Licensees or Verizon. This document will discuss several methods of construction and types of hardware that may be used to maximize the existing space on our poles.

2.2 PURPOSE

The purpose of this document is to summarize the approved types of construction and hardware that are available for Licensees' use in constructing their networks. Details regarding these methods can be obtained from the documents referenced throughout this letter. It should be noted that the methods described in this procedure are to be made available to all Licensees in a non-discriminatory manner throughout the Verizon

footprint. Each method is subject to all federal, state, county and municipal codes and regulations as well as those found in the most current edition of the National Electric Safety Code, the Telcordia Blue Book – Manual of Construction Procedures (SR-1421, Issue 6 March 2017) https://knowledge.verizon.com/vzknowledge/documentUrl.portal?docName=VZK_237224 , Verizon's practices and the terms of the Joint Use Agreements in effect in your area. Licensees should be directed to contact Telcordia to obtain copies of the Blue Book and IEEE to obtain copies of the NESC.

2.3 REASON FOR RE-ISSUANCE

This document is being redistributed to reinforce the types of attachment techniques permitted by Verizon. In accordance with the FCC Order 10-84, § III(A) Nondiscriminatory Use of Attachment Techniques, released May 20, 2010, Verizon is required to allow Licensees to use the same pole attachment techniques that it uses for itself. Furthermore, Verizon was required to make publicly available a description of limiting circumstances related to the use of boxing and extension arms on Verizon poles. The document outlining these circumstances has been posted in the pole attachment procedures section of each State on the Verizon Partner Solutions website:
http://www22.verizon.com/wholesale/attachments/pcl/Verizon_Guidelines_on_Boxing_and_Extension_Arms(052219).pdf

A copy is embedded in this document for ease of reference.

Guidelines on
Boxing and Extensic

3.0 MAKE-READY ALTERNATIVES

3.1 There are several reasons why Verizon will not allow Licensees to attach their facilities below Verizon facilities on a pole. The reasons include, but are not limited to, considerations for mid-span clearances and work associated with pole replacements.

3.1.1 During construction, a steel suspension strand ("messenger") is attached to and tensioned between poles. A copper cable or fiber-optic cable is then lashed to that messenger. The resulting sag mid-span between the two poles is dependent upon the tension of the messenger, the weight of the cable and messenger, the length of the span and the air temperature. The higher the temperature, the greater the sag. The longer the span, the greater the sag. The heavier the cable, the greater the sag and the lesser the tension of the messenger, the greater the sag. Because of the aforementioned characteristics, the progression from lighter cables being attached at the top of the communication space to heavy cables being attached on the bottom of the communication space on a pole is Verizon's conventional method of engineering design. Fiber-optic cables are comparatively much lighter than copper cables. It has always been Verizon's general practice to place lighter cables, and especially fiber-optic cables, in the higher positions in the communications space on the pole when heavier copper cables

are also attached. This practice prevents mid-span cross-overs, damage to Licensee and Verizon facilities, and the use of excessive pole space.

3.1.2 Because all cables are not equal in weight, and there are variations in temperature, messenger tension, and span length, minor adjustments of pole attachment heights may be required at the pole to maintain the proper clearances between facilities. Another method to provide for minor adjustments is called “sagging in”. “Sagging in” is accomplished by releasing some of the tension on the messenger to which a cable is lashed. If a Licensee’s cable weighs less than existing cables above it, “sagging in” may be required to maintain proper clearances. Slight variations in tension to compensate for mid-span clearances for multiple Licensee and municipal cables on the same pole that are relatively similar in weight are not uncommon. Problems occur, however, if excessive slack is introduced to compensate for the differences in sag between two cables that vary greatly in weight. Any reduction in the tension of the messenger below design specifications changes the physical characteristics of the messenger, which causes the messenger to stretch more than normal at higher temperatures. Ice loading also causes a similar effect. The result of high temperature or ice load may cause the messenger to stretch enough to lower the cable below required ground clearance height and cause a hazardous condition. Excessive slack in the cable may also cause the cable to be adversely affected by wind causing it to be swept up into a cable above it causing damage and a safety hazard to those working on the pole line.

3.1.3 Placing a Licensee’s cable below Verizon’s cable creates an arrangement that may require an extra visit by Verizon for pole replacements. To transfer facilities from the old pole to the new pole during a pole replacement, work on the pole is done in a top down fashion, with Verizon being last to move or transfer its facilities. If not in the bottom position, Verizon would transfer its facilities, the Licensee would transfer its facilities below Verizon, and then Verizon may need an additional visit at extra cost to return to the site to remove the pole.

3.1.4 To maintain mid-span clearances, the Licensee’s lighter cable would require more than a one foot separation from Verizon's lowest attachment at the pole if “sagging in” was not an option. Depending on the size and weight of Verizon's existing cables, this separation at the pole could be a much as three feet in order to maintain the 6" separation at mid-span. This would result in the amount of pole space occupied by the Licensee being in excess of the standard one foot allocation which is the basis for the Licensee pole attachment rental rate.

3.1.5 Verizon’s normal engineering practices are based on Licensees occupying the space in the communication space above Verizon’s cable facilities. This industry-accepted top-down hierarchy for placing power company, municipal, Licensee and Verizon cable facilities eliminates confusion in cases of emergency (broken poles, storm damage, etc.) that could prolong restoration and possibly cause additional damage if cables are not located in their conventional location.

3.2 There are several types of construction that Verizon may allow Licensees to perform to maximize the use of existing space on the pole. These may include, but are not limited to, supply space construction, overlashing and opposite side construction (boxing-in the pole).

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3.2.1 Supply Space Construction: Verizon may allow Licensees to construct their facilities in the supply space as permitted under NESC guidelines and the conditions that follow. It should be noted that the supply space is located above the normal 40" neutral zone or safety space. Before attaching in the supply space, a Licensee must ensure that it has the approval of both Verizon and the electric utility. NESC guidelines concerning this type of construction can be found in Part 2, Section 22, Rule 224. Some key points to remember:

- Licensee shall follow all of Verizon's Pole Attachment licensing procedures.
- Licensee shall place its cable in the same relative position on the pole line to avoid transition points between the supply space and the communications space. If transition points are necessary, they shall be kept to a minimum and not used solely as a means of avoiding make-ready work.
- Transition points must occur at the poles, never in the mid-span.

3.2.2 Overlash Construction: Verizon may allow a Licensee to overlash its facilities to its existing strand or to the existing strand of other Licensees. A Licensee's overlashing to other than its own facilities is permissible, where there is concurrence between the Licensees involved. However, under no circumstances will Verizon allow a Licensee to overlash to Verizon's facilities. Key points to remember:

- Licensee shall follow all of the overlashing requirements contained in Verizon's Pole Attachment Agreements and overlashing requirements posted on the Verizon Partner Solutions (VPS) Website. Verizon's most current procedures and required forms can be found at: http://www22.verizon.com/wholesale/business/poleconduit/home/Access-Poles-Conduits.html
- The Licensee, who wishes to overlash to the facilities of another Licensee, must provide written documentation indicating each party's consent to this arrangement. Both parties – (Host and Overlasher) must have an executed pole attachment agreement with Verizon and satisfy all insurance and surety requirements as specified in Verizon's Pole Attachment Agreement.
- While Verizon will permit Licensees to overlash to another Licensee's facilities, it will not permit Licensees to overlash to Verizon facilities.

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3.2.3 Opposite Side Construction (Boxing-in): In certain instances, Verizon may allow Licensees to attach their facilities to the opposite side of the pole from the existing attachments within the communications space. This may be accomplished through the use of a "B" bolt or backside hanger, which can be used to mount the additional attachment to the opposite side on an existing bolt, or by placing a separate thru-bolt and strand. Note that some joint use and/or joint ownership agreements between Verizon and the electric utility may not permit this as an option. For details regarding hardware to be used and clearances, see Section 5 of the latest edition of the Telcordia - Blue Book Manual of Construction Procedures. Some key points to remember:

- Licensees shall follow all of Verizon's Pole Attachment licensing procedures.
- This type of construction will be considered on a case-by-case basis with the consent of the pole owner.
- A Licensee, who wishes to attach to the bolt of another Licensee, must provide written documentation indicating each party's consent to this arrangement.
- Backside Construction (attachment on the field side of the pole) may be permitted solely on an exception basis, and only where Verizon would use the same type of construction for the placement of its own facilities.
- Where opposite side construction is permitted, the use of common bolt construction is preferred to creating an additional bolt hole in the pole.
- In the event of a future pole replacement, an existing cable attached to the field side of the pole may be moved to the roadside of the pole at the time of the pole replacement.
- There must be at least a 4" vertical clearance between bolt holes and a minimum of 12" diagonal clearance between front side (roadside) and backside (field side) strands, if a separate bolt is placed.
- While Verizon may permit Licensees to share hardware, it will not permit Licensees to share Verizon's **own** hardware (suspension strand, guys, bolts, extension arms, extension bolts, etc…).
- Verizon does not attach its facilities to hardware that it does not own.

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3.2.4 Extension Bolt Construction: Verizon may allow Licensees to use cable extension bolts and straps provided that the design includes support straps as described below. In the past, this hardware facilitated placing a single cable and strand on a pole where additional clearance was required to avoid contact with a power company vertical run. However, it may also be used to place an additional (second) strand and cable at the same height. The straps, which attach to the threaded end of existing suspension bolts in the pole, support the outer end of the extension bolt, which in turn supports the proposed strand and cable.

The S type extension bolt is available for use with a 5/8" suspension bolt. The Extension Bolt (E.B.) Reinforcing Strap should always be used to support the outer end of the extension bolt and cable.

The use of the extension bolt is limited to cables that are not over 5 pounds per foot with a maximum 10M strand. It cannot be used on spans exceeding 150 feet and shall not be attached to cable extension screws. Some key points to remember:

- Licensees shall follow all of Verizon's Pole Attachment licensing procedures.
- This type of construction will be considered on a case-by-case basis with the consent of the pole owner.
- A Licensee, who wishes to attach to the bolt of another Licensee, must provide written documentation indicating each party's consent to this arrangement.
- Verizon will not permit Licensees to attach their cable extension bolts to Verizon's thru-bolts, but may allow them to attach to their own thru-bolts.
- Attachments cannot encroach upon or restrict the workspace of other Licensees.

3.2.5 Extension Arm Construction: Verizon allows the use cable extension arms on a limited basis to support additional cables where proper clearance between telephone, power, and Licensee's facilities cannot otherwise be achieved through traditional make-ready work (rearrangements or pole replacement) or any of the preceding make ready alternatives. Historically, Verizon has primarily used extension arms to offset a slight pull on a pole when guying was not possible. Verizon will not permit the use of an extension arm where it would restrict access to Verizon's or another existing attacher's facilities or those of another joint use entity. Verizon owned extension arms are not allowed to be shared with Licensees, nor will Verizon share extension arms owned by Licensees due to hardware incompatibility and safety reasons.

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3.3 If Verizon does not allow a Licensee to utilize any of the preceding make ready alternatives, it may allow the Licensee to place a separate strand attachment by reducing the minimum standard 12" clearance required between individual Licensee's attachments on the pole. A minimum of 12" separation at the poles must be maintained between Verizon and any Licensee attachments. For more details, refer to Section 3 of the latest edition of the Telcordia Blue Book Manual of Construction Procedures. Some key points to remember:

- Licensees shall follow all of Verizon's Pole Attachment licensing procedures.
- This type of construction will be considered on a case-by-case basis with the consent of the pole owner.
- The Licensees must provide written documentation indicating their mutual consent to the reduction of the 12" separation requirements between their facilities at the pole.
- A 6" mid-span clearance must be maintained between attachments.

3.4 If Verizon does not allow a Licensee to utilize any of the preceding make-ready alternatives in Sections 2.1 through 2.2 and if make-ready cannot be eliminated by reducing the separation requirements as defined in Section 2.3 above, Verizon, the electric utility or any other attacher may raise or lower its existing attachments on the pole, at the Licensee's expense, to provide space for the Licensee's additional attachments. If the required clearances cannot be obtained through the relocation of existing facilities, it may be necessary to replace the pole with one of an appropriate height. In those instances where a pole replacement may not be feasible, Verizon will assess the possibility of utilizing a pole top extension on a pole that it jointly owns or is in joint use with an electric utility on a case-by-case basis to expand the capacity of the communications space to accommodate the Licensee's new attachments. After the pole top extension is installed, the electric utility moves up its facilities and attaches to the pole top extension. The Licensee must obtain approval from both Verizon and the electric utility and must provide Verizon documentation indicating the electric utility's consent to place the pole top extension based on its pole loading analysis and inspection of the top section of the pole. The electric utility must place and own the pole top extension. Some key points to remember:

- Pole top extensions reduce the load bearing capacity of the pole. The Licensee must make arrangements with the electric utility for the electric utility to perform a loading analysis to determine if the pole can accommodate the additional loads created by the electric utility's pole top extension and its attached facilities and the additional Licensee's proposed attachments. The Licensee also must make arrangements with the electric utility for the payment of the costs to perform the loading analysis; under no circumstance will Verizon have any liability for such costs. The Licensee must provide Verizon documentation indicating the electric utility's consent to place the pole top extension based on its pole loading analysis.

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- All poles designated for pole top extensions must be visually inspected for condition and structural adequacy. Because the top section of the pole subject to the greatest stress loads cannot be adequately inspected from the ground, it must be inspected at close range using a vehicle equipped with an aerial lift. Inspection of the top section of the pole must be performed by workers qualified to work in the supply space and cannot be performed by Verizon technicians. The electric utility will determine how the inspection of the top section of the pole in the supply space will be conducted. The Licensee must make arrangements with the electric utility for the payment of the costs to perform the inspection of the top section of the pole; under no circumstance will Verizon have any liability for such costs. The Licensee must provide Verizon documentation indicating results of the electric utility's inspection of the top section of the pole. Where the pole is found to be structurally inadequate, Verizon will not approve the use of a pole top extension.

- The pole top extension should be limited to straight line construction.

- The Licensee must bear all of Verizon's costs to evaluate the integrity of the pole on which a pole top extension and pole top attachments are proposed.

- The terms and conditions, and methods and procedures, in the joint ownership or joint use agreement between Verizon and the electric utility, relative to the use of pole top extensions, must be reviewed for compliance.

- Verizon does not have an approved product for use and therefore will not place or own pole top extensions.

3.5 Verizon may allow Licensees to use a pole top extension to which they can attach their facilities as permitted under NESC guidelines and the conditions that follow. To provide space for a Licensee's facilities to be located at the top of the pole and required clearance from the electric utility cables in the supply space, Verizon, the electric utility or any other attacher may raise or lower its existing attachments on the pole, at the Licensee's expense. If the required clearances for a Licensee's facilities in the supply space at the top of the pole cannot be obtained through the relocation of existing facilities, it may be necessary to replace the pole with one of an appropriate height. In those instances where a pole replacement may not be feasible, Verizon will assess the possibility of utilizing a pole top extension on a pole that it jointly owns or is in joint use with an electric utility, on a case-by-case basis to expand the capacity of the supply space to accommodate the Licensee's new attachments at the top of the pole. In these installations, the Licensee's facilities are attached to the pole top extension. The Licensee must obtain approval from both Verizon and the electric utility, and must provide Verizon documentation indicating the electric utility's consent to place the pole top extension based on its pole loading analysis and inspection of the top section of the pole. Where required by the electric utility, the electric utility must place and own the pole top extension. Some key points to remember:

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- Pole top extensions reduce the load bearing capacity of the pole. The Licensee must make arrangements with the electric utility for the electric utility to perform a loading analysis to determine if the pole can accommodate the additional load created by the pole top extension and the facilities to be attached to the pole top extension located in the supply space. The Licensee also must make arrangements with the electric utility for payment of the costs to perform the loading analysis; under no circumstance will Verizon have any liability for such costs. The Licensee must provide Verizon documentation indicating the electric utility's consent to place the pole top extension based on their pole loading analysis.

- All poles designated for pole top extensions must be visually inspected for condition and structural adequacy. Because the top section of the pole subject to the greatest stress loads cannot be adequately inspected from the ground, it must be inspected at close range using a vehicle equipped with an aerial lift. Inspection of the top section of the pole must be performed by workers qualified to work in the supply space and cannot be performed by Verizon technicians. The electric utility will determine how the inspection of the top section of the pole in the supply space will be conducted. The Licensee must make arrangements with the electric utility for payment of the costs to perform the inspection of the top section of the pole; under no circumstance will Verizon have any liability for such costs. The Licensee must provide Verizon documentation indicating results of the electric utility's inspection of the top section of the pole. Where the pole is found to be structurally inadequate, Verizon will not approve the use of a pole top extension.

- The Licensee must bear all of Verizon's costs to evaluate the integrity of the pole on which a pole top extension and pole top attachments are proposed.

- The terms and conditions, and methods and procedures, in the joint ownership or joint use agreement between Verizon and the electric utility, relative to the use of pole top extensions, must be reviewed for compliance.

- Verizon does not have an approved product for use and therefore will not place or own pole top extensions.

4.0 POLE LOADING CONSIDERATIONS

In addition to clearance considerations Verizon's Outside Plant Engineers must also consider pole loading as part of the engineering process each time an additional cable is attached to a pole. This process applies to Verizon cables as well as Licensee and electric utility attachments. Before applications for additional attachments can be approved, if no pole top extension is required, the engineer should calculate pole loading based on the specifications provided by the Licensee or the electric utility for the additional attachments, and if a pole top extension is required, the engineer should review the electric

utility's pole loading analysis. If the proper loading requirements cannot be met to accommodate the additional attachment, the pole must be replaced with one of sufficient height and class.

There are three types of pole loading: transverse storm loading, vertical loading and bending moments due to eccentric loads or unbalanced tensions.

- Transverse storm loading determines the required class for most poles.
- Vertical loads may be a controlling factor for poles carrying large cables or transformers.
- Bending moments usually determine the required class at corners and dead ends.

For more information on calculating pole class requirements based on pole loading, refer to 2018-002-OSPHDBK, - OSP Handbook Aerial Plant.

5.0 OTHER CONSIDERATIONS

In addition to clearance and loading requirements, the Outside Plant Engineer must also consider the impact that the Licensee's construction will have on the climbing space. Every effort must be made to preserve the climbing space on the pole. Refer to Section 3 of the most current edition of the Telcordia Blue Book Manual of Construction Procedures for more details regarding climbing space.

6.0 SELF-HELP

Surveys - If Verizon does not complete the Pre-Construction Survey in the timeframe required by applicable law, then Licensee may conduct its own survey utilizing an Approved Contractor. In such event, Licensee will provide at least three (3) business days prior written notice to Verizon and Existing Attachers of the date and time of the survey, a description of the work involved and the name of the Approved Contractor. Verizon and Existing Attachers each have the right to be present during any field inspection.

Make-ready - If Verizon does not complete the required Make-Ready Work in the timeframe required by applicable law, then Licensee may hire an Approved Contractor to complete such work. In such event, Licensee will provide at least five (5) business days prior written notice to Verizon and Existing Attachers of the date and time of the Make-Ready Work, a description of the work involved and the name of the Approved Contractor. Verizon and Existing Attachers each have the right to be present during any Make-Ready Work.

Licensee shall notify Verizon and, if applicable, Existing Attachers immediately if the Make-Ready Work damages any equipment on the Pole(a) or damages a Pole(s) or causes an Outage. Upon receipt of such notice from Licensee, Verizon or, if applicable, Existing Attachers, may either (a) perform any remedial work and charge Licensee for all reasonable costs associated with such work or (b) require Licensee to immediately fix the damage or Outage at Licensee's sole expense following receipt of Licensee's notice.

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Licensee shall notify Verizon and Existing Attachers no later than fifteen (15) days after the Make-Ready Work is complete and Licensee's Attachments are attached. Verizon and Existing Attachers each have at least ninety (90) days from receipt of such notice to perform a Post-Construction Inspection. Verizon will notify Licensee of any damage or code violations caused by either the Make-Ready Work or Licensee's Attachments in accordance with applicable law. If either Verizon or an Existing Attacher notifies Licensee of damage or a code violation, then either Verizon or an Existing Attacher may either (a) perform any remedial work and charge Licensee for all reasonable costs associated with such work or (b) require Licensee to fix the damage or code violations at Licensee's sole expense within fourteen (14) days after receipt of notice from Verizon or Existing Attacher, as applicable.

Self-help is not available for pole replacements.

7.0 SUMMARY

There are several factors that the Verizon Outside Plant Engineer must consider before making a determination as to how Licensees will be allowed to attach their facilities and what, if any, make-ready work will be needed. The first of these is safety. At no time, should any decision regarding the placement of a Licensee's facilities compromise the safety of our technicians, other Licensees, the public or the integrity of the outside plant. Secondary factors, which must be taken into account, include the available space on the pole, the load on the pole, and any planned modifications that may impact that space or loading. The primary goal of the engineer should be to assess each request with these considerations in mind, recognize that there are several design alternatives available and identify a method of attachment, consistent with these guidelines, to ensure that each Licensee is treated in a non-discriminatory manner.

Verizon MA Response to Allen Decl. Exhibit C

1. T/E 8 Jackson St

   The current attachments on this pole are in compliance with applicable codes. There is 40" of clearance between the top communication cable and the power company's secondary at the pole, and the mid-span is in compliance at 16'5". Verizon is not in a position to opine on whether the alleged requirement of Grid for 60" of clearance is appropriate. National Grid called for a pole upgrade from 35' to 40' to provide for proper mid-span clearances once Otelco attaches. Verizon's make-ready work is necessary due to pole replacement to provide enough room for Otelco's attachment, not to remedy pre-existing conditions.

2. T.26/E.37 Allen Rd

   This 35' pole could be brought into compliance with applicable codes, but even then it would still not have enough space for Otelco's attachment, and a taller, 40' pole is needed. The power company's secondary is at 25'1, CATV is at 22'3, Verizon at 21'3 and 19'8". While CATV is currently only 34" from the secondary, it could be lowered to 21'9", and the top Verizon cable could be lowered to 20'9". That would bring the pole into compliance. But the lower of Verizon's cables is only 17'8" above the road at mid-span. Reducing this further by lowering this cable to make room for Otelco would cause a mid-span violation and safety concern.

3. T.27/E.38 Allen Rd

   The current attachments on this pole are in compliance with applicable codes. There is at least 40" of clearance between the top communication cable and the secondary on the pole, and the mid-span is in compliance at 16'0". (The attachment heights in Otelco's Exhibit C do not come from Verizon's pole survey, and are often inconsistent with the surveyed heights.) National Grid called for a pole upgrade from 35' to 40' to provide sufficient space for Otelco's attachment. Verizon's make-ready work is necessary due to pole replacement to provide sufficient space on the pole for Otelco, not to remedy pre-existing conditions.

4. T.9/E.21 Allen Rd

   The current attachments on this pole are in compliance with applicable codes. The make-ready work on this pole is not remediation of pre-existing code violations but is needed to provide sufficient mid-span clearance to the next pole in the line. The attachments on that pole (T.10/E.22) must be lowered to make room for Otelco, but that would not leave enough clearance over the road at mid-span to comply with applicable codes. One solution would be to replace pole T.10/E.22 to provide more height at the pole and also at mid-span. Raising the facilities on pole T.9/E.21, however, also provides sufficient mid-span clearance and is less costly than replacing a pole.

5. T6-02/E.18-4 Allen Rd

   The current attachments on this 35’ pole are in compliance with applicable codes. There is at least 40” of clearance between the top communication cable and the power company’s secondary at the pole. (Even by Otelco’s measurements, the neutral zone is 41”.) The midspan is in compliance at 16’5”. Verizon is not in a position to opine on whether the alleged requirement of Grid for 48” of clearance is appropriate. National Grid called for a pole upgrade from 35’ to 40’ to make space for the new attachment. Verizon’s make-ready work is necessary due to pole replacement to provide enough room on the pole for Otelco’s attachment, not to remedy pre-existing conditions.

IOP # 8

Boxing of Attachments on Jointly-Owned Poles

This Intercompany Operating Procedure addresses the policy for Pole Boxing on Jointly-Owned Poles.

1. **Pole Boxing:** The term "Pole Boxing" refers to the placement of Attachments on opposing sides of a Pole below the power space. Because Pole Boxing can create an unsafe condition, it is permissible only on a case-by-case basis if it is the only viable alternative, which means that the use of any other available method(s) would be unreasonably costly to one or both Parties. Use of Pole Boxing when viable alternative methods are available may be treated as interference, subject to resolution in accordance with **IOP# 5-Work Performed and Maintenance of Attachments On Jointly-Owned Poles.** Verizon's Attachments, to the extent practicable, shall be placed on the same side of the Pole, with twelve inches (12") vertical separation from other Attachments on the Pole. The road side face of the Pole is the preferred side for Attachments.

2. **Alternatives:** All proposals to use Pole Boxing shall be reviewed on a case-by-case basis and shall be permitted upon mutual agreement of the Parties. In determining whether Pole Boxing is appropriate for a particular Attachment, the Parties, among other things, shall consider:

    a. Whether the Pole in question already has Attachments that are Boxed;

    b. Whether other Poles in the same Pole line have Attachments that are already Boxed;

    c. Whether there is an adequate alternative Attachment method available (possible alternatives include over-lashing, rearrangement of existing Attachments to meet clearance requirements, a Pole Top Extension or Pole replacement); and

    d. Whether existing Attachments on the Pole, including street lights, antennas, or other Pole mounted equipment, are compatible with Pole Boxing.

Verizon MA Response to Allen Decl. Exhibit E

1. Pole T/E 1 Sargent Hwy (RT 9), Belchertown

   This pole is not suitable for boxing. This is a busy pole with sidetaps (cables running from the pole in directions other than the main cable line) and guying for support. Boxing would make future work on this pole (including pole replacement, climbing or bucket access) even more difficult, complicated and less safe. Moreover, the pole is not currently boxed.

2. Pole T.8/E.68 George Hannum St., Belchertown

   This pole is not currently boxed, and Verizon MA's make-ready work (costing $1,450 according to Otelco) that could be avoided by boxing is not overly-complicated, such as requiring major facilities relocation or a service outage for customers. This pole should not be boxed.

3. Pole T.3/E.73 George Hannum St., Belchertown

   This pole is not currently boxed, Verizon MA's make-ready work (costing $1,450 according to Otelco) that could be avoided by boxing is not overly-complicated, such as requiring major facilities relocation or a service outage for customers. This pole should not be boxed.

4. Pole T.276/E.64 Federal St., Belchertown

   This pole is not currently boxed, and Verizon MA's make-ready work ($1,542 according to Otelco) that could be avoided by boxing is not overly-complicated, such as requiring major facilities relocation or a service outage for customers, to justify the additional complication of the network and the reduction in safety that would result from boxing of this pole.

5. Pole T/E 13 Howard St., Belchertown

   This pole is not suitable for boxing. The line changes direction at the pole (creating a "corner"), and the pole is guyed to help counter the resulting tension on the pole. Boxing would add even more tension on the pole on the side of the new attachment, potentially causing the pole to flip over when it is time to be replaced, a serious safety concern. Moreover, the pole is not currently boxed.

6. T/E 18 Jackson St., Belchertown

   This pole is not suitable for boxing. The pole is on a steep embankment, making it difficult to access the pole by bucket to perform repair work or to replace the pole. Boxing would make that even more difficult and preclude climbing the pole as well. (The pole is not currently boxed.) The savings in make-ready do not justify adding this additional risk to the network and the safety of workers.

7. T/E 5 Jackson St., Belchertown

   This pole is already boxed. Upon further review, however, Verizon MA and National Grid have determined that lowering the current attachment of the cable company and one of Verizon MA's facilities would create enough room for Otelco's attachment, while maintaining safe clearances over the residential driveways and without the need to replace the pole. Verizon MA will revise its make-ready estimate for this pole accordingly. With this change, the make-ready on the pole will consist of a few moves and does not justify the reduction in safety that additional boxing would cause.

   Moreover, there is sufficient space on one side of this pole for all of the attachments, and when the time does eventually come to replace the pole, all attachments will be placed on the road side of the pole, eliminating the boxing.

8. T.352/E.1 Main St., Belchertown

   This pole is not suitable for boxing. This is a major junction pole and carries three-phase electrical power. There are also communication side taps on this pole. Due to these conditions, performing work on this pole requires special care. Verizon MA's make-ready work that could be avoided by boxing is not overly-complicated, such as requiring major facilities relocation or a service outage for customers. This pole is not already boxed, and boxing it would make the current risks of working on it even greater.

9. Pole T.6-04/E.18-8 Allen Rd., Belchertown

   This pole is not suitable for boxing. The line changes direction at the pole, and the pole is guyed to help counter the resulting tension on the pole. Boxing would add even more tension on the pole on the side of the new attachment, potentially causing the pole to flip over when it is time to be replaced, a serious safety concern. Moreover, the pole is not currently boxed.

10. Pole T.7/E.19 Allen Rd., Belchertown

    This pole is not currently boxed, and Verizon MA's make-ready work ($1,450 according to Otelco) that could be avoided by boxing is not overly-complicated, such as requiring major facilities relocation or a service outage for customers. This pole should not be boxed.

11. Pole T/E 7 Fletcher Ave., Belchertown

    This pole is not currently boxed, and the estimated make-ready does not call for any work by Verizon MA. This pole should not be boxed.

12. T.18/E.13 Brandywine Dr., Belchertown

    This pole is not suitable for boxing. The pole is on a steep embankment, making it difficult to access the pole by bucket to perform repair work or to replace the pole. Boxing would make that even more difficult and preclude climbing the pole as well. (The pole is not currently boxed.) The savings in make-ready do not justify adding this additional risk to the network and the safety of workers.

13. T.24/E.36 Allen Rd., Belchertown (Note: there is no such pole in Verizon's database. The pole at issue is either T.24/E.35 Allen Road or T.25/E.36 Allen Road. Both of these poles have similar circumstances, however, and the following analysis applied to both of them.)

    These pole are not suitable for boxing. The line changes direction at each pole and crosses a street in between. The poles are guyed to help counter the tension on the poles due to the corner. Boxing would add even more tension on the poles on the side of the new attachment, potentially causing the poles to flip over when they are replaced, a serious safety concern. Moreover, neither of these pole is currently boxed, and there is no planned make-ready work by Verizon MA to be avoided by boxing either of these poles.

14. T.91/E.95 Old Enfield Rd., Belchertown

    This pole is not suitable for boxing. The line changes direction at the pole, creating a corner, and the pole is guyed to help counter the resulting tension on the pole. Boxing would add even more tension on the pole on the side of the new attachment, potentially causing the pole to flip over when it is time to be replaced, a serious safety concern. Moreover, the pole is not currently boxed, and Verizon MA's make-ready work (costing $1,829 according to Otelco) that could be avoided by boxing is not overly-complicated, such as requiring major facilities relocation or a service outage for customers.