



NEW HAVEN PUBLIC SCHOOLS

Operations Memorandum

To: New Haven Board of Education Finance and Operations Committee

From: Gilda Herrera, Director of Information Technology

Date: March 9, 2023

Re: Multi Yr. Agreement with Crown Castle International Corp. for WAN infrastructure, solution and maintenance

Answer all questions and have a representative ready to present the details of each question during the Finance & Operations meeting or this proposal may not be advanced for consideration by the full Board of Education.

Company Information		
Vendor Name:	Crown Castle International Corp.	
Doing Business as: (DBA)	Crown Castle Fiber LLC	
Vendor Address:	55 Church St, New Haven, CT 06510	
Vendor Contact Name:	Bob David	
Vendor Contact Email:	Bob.David@crowncastle.com	
Is the contractor a minority or women owned small business?	No	
Agreement/Contract Information		
New or Renewal Agreement/Contract?	New	
Effective Dates: (mm/dd/yy) <small>Multi-yrs. require Board of Aldermen approval</small>	From - 07/01/2023	To - 06/30/2028
Total Amount: <small>If Multi-yr. include yr. to yr. breakdown</small>	2023-2024: \$310,500.00 (ERATE: \$31,050.00) 2024-2025: \$310,500.00 (ERATE: \$31,050.00) 2025-2026: \$310,500.00 (ERATE: \$31,050.00) 2026-2027: \$310,500.00 (ERATE: \$31,050.00) 2027-2028: \$310,500.00 (ERATE: \$31,050.00) Total: \$1,552,500.00 (ERATE Applied: \$155,250.00)	
Funding Source Name: Acct. #:	Capital Projects 3C22-2263-58704	
Contract #: <small>(Local or State)</small>	N/A	



NEW HAVEN PUBLIC SCHOOLS

Key Questions:

1. What specific service will the contractor provide:

This project will address the need to upgrade the Wide Area Network infrastructure for the New Haven Public School system (NHPS) to provide greater bandwidth and overall stability. Provision of a Leased Fiber Circuit WAN Solution. Maintenance Requirements of Leased Fiber WAN. Vendor must designate which services are E-RATE eligible and which are not in their response and provide separate pricing for each.

2. How was the contractor selected? **Attach appropriate supporting documents*

- ☐ Quotes
- ☐ Sealed Bid # _____
- ☐ Sole Source # _____
- ☒ RFP# 2023-01-1510
- ☐ State Contract # _____
- ☐ Exempt Professional
 - ☐ Accountant
 - ☐ Actuary
 - ☐ Appraiser
 - ☐ Architect
 - ☐ Artist
 - ☐ Dentist
 - ☐ Engineer
 - ☐ Expert Professional Consultant
 - ☐ Land Surveyor
 - ☐ Lawyer
 - ☐ Physician/Medical Doctor

3. If the vendor was selected through Solicitation (Bid/RFQ/RFP) process; answer the following:

a. Please explain how the vendor was chosen? **Attach Vendor Proposal*

The evaluation criteria used for the score of the RFPs were based on the Price of Solution, Quality of Services, Personnel Qualifications, Prior Experience, Proximity and Responsiveness.

b. Who were the members of the selection committee? *(Minimum 3 members required)*

Shawn Garris, Purchasing Dept.
Gilda Herrera, Dir. IT
Edward Connelly, IT



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Key Questions: - Continued

4. If this is a renewal with a current vendor, has the vendor has met all obligations under the existing agreement/contract?

The vendor has met its prior obligations to previous versions of the agreement, and has been a long-standing vendor of the district for years.

5. If this agreement/contract is a Renewal, has the cost increase? If yes, by how much? *Attach Renewal Letters

New Agreement.

6. If this new agreement/contract, has cost for service increased from previous years? If yes, by how much?

The financial implications of the agreement presented as a multi-year will benefit the district as it allows the vendor to lock in long term pricing. Which will provide a savings of ~26% of the total of 5 years spanning from 2023-2028.

7. Is this a service that existing staff could provide? Why or why not?

This is a specialized service that the current staff can not provide, as well as a portion of the funding comes from the ERATE discount provided to the district for utilizing applicable vendors.



NEW HAVEN PUBLIC SCHOOLS

Agreement/Contract Processing Checklist

To ensure timely processing of the submitted Agreement/Contract it is imperative to collect and provide all of the required documentation noted below and provide with submission to board.

Forms/Documents are available in: Drive G:\F&O Agenda Minutes\Agreement Contract Checklist\2022-2023

1. Has this vendor performed service(s) in prior fiscal years?	
If Yes,	Vendor # <u>10004</u>
If No or New,	Vendor must provide completed W9
2. A quotes or proposal submitting regarding the agreement/contract.	
If RFP	Attach Vendor Submitted
Other	Copy of State Contract, Quotes, etc.
3. <u>Certificates of Liability Insurance (COI) are required for ALL agreements/contracts, read the following and select the applicable Rider.</u> It is the submitters responsibility to request the COI from the vendor and attach with submission; the COI from the Vendor <u>must match rider specifications outlined.</u> Failure to obtain or incorrect COIs will be returned for revision and will delay its processing.	
Rider 300	Professional Services – Onsite Umbrella; w/ Auto; w/ Workers Compensation
Rider 305	Professional Services – Onsite Umbrella; No Auto; No Workers Compensation
Rider 310	Professional Services – Onsite Umbrella; w/ Auto; No Workers Compensation
Rider 315	Professional Services – Onsite Umbrella; w/ Youth under 21
Rider 320	Professional Services – Offsite; No Auto; No Workers Compensation
Rider 325	Professional Services – Offsite; No Auto; No Workers Compensation; w/ Youth under 21
Rider 330	Professional Services – Offsite Attorney; No Auto; No Workers Compensation
Rider 335	Professional Services – Onsite; Physician/Dentist; No Auto
Rider 340	Professional Services – Onsite Physician/Dentist w/ Youth under 21
Rider 345	Professional Services – Onsite Temp Nurses
Rider 350	Professional Services – Cyber – Onsite
Rider 355	Professional Services – Cyber – Offsite
4. The City of New Haven requires the information requested in the <u>Disclosure Affidavit</u> before any City agency, department, or city official seeking agreement/contract shall obtain them, notarized.	
Emailed Disclosures are acceptable.	



City of New Haven
Bureau of Purchases
 200 Orange Street, Room 301
 New Haven, CT 06510
 Tel: 203-946-8201 Fax: 203-946-8206

Honorable Justin Elicker
 Mayor

Shawn J. Garris
 Acting Purchasing Agent

The City of New Haven ("City") is accepting sealed
 Request for Proposals (RFP) for the following:

Request for Proposal

Project Summary

RFP Title: Leased Fiber WAN 2023 – 2028

RFP #: 2023-01-1510

Projection Description: This project will address the need to upgrade the Wide Area Network infrastructure for the New Haven Public School system (NHPS) to provide greater bandwidth and overall stability. Qualified vendors must respond to all parts of this RFP.

Department: BOE-IT

RFP/Advertise Date: January 8, 2023

Intent to Respond Due Date: February 6, 2023

RFP Due Date: February 7, 2023

11:00 AM

Pre-Proposal Meeting Date: N/A

Meeting Time:

Pre-Proposal Meeting Location: N/A

Contract Term:

1

year

4

Renewals
 Option(s)
 (at the sole
 discretion of the
 CONH)

Insurance Requirements: Refer to Rider

350

(This Rider is attached)

Local Preference: X

YES

NO

Pricing Sheet: Respondent Supplied

Responses must be submitted in the form and manner specified in this request.

REQUEST FOR PROPOSALS

Brief Overview of Project:

This RFP is only for the New Haven Board of Education (BoE), there are no services under this RFP being requested for other departments of the City of New Haven.

This project will address the need to upgrade the Wide Area Network infrastructure for the New Haven Public School system (NHPS) to provide greater bandwidth and overall stability. Qualified vendors must respond to all parts of this RFP.

This RFP and its resulting contract award is for E-RATE year 23 from July 1, 2023 to June 30, 2028. This RFP is for a 5 year contract.

1. Provision of a Leased Fiber Circuit WAN Solution

- 1) Provide a network based on leased optical fiber to connect approximately 50 NHPS sites. The solution must provide a leased fiber based circuit network with:
 - 1GB connection to each site from Gateway Building – 255 Blatchley Avenue as defined on the site list included in this RFP, include all hardware and software required to meet the expectations of this RFP, and provide all configuration/programming required during the integration of the solution.
- 2) Solutions must have both flexible and affordable bandwidth upgrade paths.
- 3) Solutions must allow for affordable additions of new sites and flexibility about moving sites.
- 4) Solutions must be Layer 3; this enables both management and security features that are critical to our operation. The current WAN solution that is in operation is Layer 3.
- 5) Solutions must have fiber connection hand offs on both ends.
- 6) Vendor must work closely with the NHPS Information Technology Department (NHPS IT) staff during each phase of the project: implementation, optimization, and formal handover to NHPS. NHPS IT will ultimately be approving each stage of project advancement.
- 7) Fully document the network installation and keep documentation up to date throughout each phase of the project. Provide all documentation in an organized binder at the end of the project during handover to the NHPS IT Department.
- 8) Ability to provide an optical fiber based solution is key; NHPS will not be responsible for the costs involved with extending an optical fiber network to any site.
- 9) Ability to insure traffic shaping and quality of service configurations on the new network are properly set is critical. The vendor should have staff resources that are fully capable of insuring that the districts existing VOIP system and data network will operate on the new circuits and network hardware configurations. It is the vendor's responsibility to insure proper traffic shaping and quality of service settings.
- 10) Provide 100% CISCO compatible solutions for any router/network hardware replacements that may be required.
- 11) The go-live date for the new network must be July 1st 2023, all required prep work must be completed before that date at no cost to the BOE.
- 12) During the selection process finalists must be willing to provide a detailed presentation regarding their solution in person at the Gateway Center Offices at 54 Meadow street in New Haven CT.
- 13) Vendors must provide a staffing plan that clearly lists a staff roster with qualifications for all members of their team that will be involved with executing the solution plan.
- 14) Vendor will be responsible for resolving all circuit related outages and must have a 1 business day maximum resolution time.
- 15) Vendor will provide the circuits only to all sites listed below, including equipment needed at 255 Blatchley Avenue Street for the handoff to our network..
- 16) Vendor will be responsible for removal of all trash and debris created by their work.

2. Maintenance Requirements of Leased Fiber WAN:

- 1) Proposed solutions to address this service will report to and be in communication with the NHPS IT Manager or their designee during service outages.
- 2) Provide a solution to troubleshoot all circuits that comprise the NHPS Wide Area Network from at least 7am to 10pm daily for uptime and errors.
- 3) Vendor will be responsible for coordination and execution of resolving all circuit related outages and must have a 1 business day maximum resolution time.
- 4) Vendor must be comfortable with and successful at performing remote support work on all network hardware that they have put in place as part of their solution.
- 5) Outages that are hardware related must be resolved within 2 business days.
- 6) E-mail notifications of outages and errors must be reported first to the defined network services contact for NHPS IT.
- 7) All outages must also be reported to the NHPS IT Manager by phone and followed up by an e-mail.
- 8) Updates for status must be given every 2 hours via e-mail and at resolution of problem.
- 9) Provide NHPS IT Manager with a web based portal to obtain reports concerning: any circuit problems & outages (and their resolution, life cycle time), average bandwidth usage per site, network errors (type and severity), and overall metric performance trending for each site and the network overall. These reports should be updated at least weekly.

Additional Requirements for Vendor Responses:

- 1) Vendor must designate which services are E-RATE eligible and which are not in their response and provide separate pricing for each.
- 2) Vendors must have a FCC registration number.
- 3) Vendor must not require the NHPS to Indemnify them, asking for such an agreement is grounds for disqualification.
- 4) Vendors must provide their standard sample agreement template to the NHPS for review.
- 5) Vendor Must provide response in electronic format (i.e. PDF)
- 6) School sites may need to be added, or temporarily removed and then added again. The response to this RFP should indicate how such changes would be handled.
- 7) On the response form provided the vendor must provide 5 Year contract (Circuits AND Equipment).

Supported Site List and Network Service Requirements

Name	Location	Required Network Service
01 Gateway	54 Meadow Street, New Haven, CT	Fiber 1GB
02 Fair Haven	164 Grand Avenue, New Haven, CT	Fiber 1 GB
03 John Martinez	100 James Street, New Haven, CT	Fiber 1 GB
04 Conte	511 Chapel Street, New Haven, CT	Fiber 1 GB
05 HSC	175 Water Street, New Haven, CT	Fiber 1 GB
06 Ross Woodward	185 Barnes Avenue, New Haven, CT	Fiber 1 GB
07 (formerly Elm City Montessori)	375 Quinnipiac Avenue, New Haven, CT	Fiber 1 GB
08 Nathan Hale	480 Townsend Avenue, East Haven, CT	Fiber 1 GB
09 Quinnipiac	460 Lexington Avenue, New Haven, CT	Fiber 1 GB
10 East Rock	133 Nash Street, New Haven	Fiber 1 GB
11 Wilbur Cross	181 Mitchell Drive, New Haven, CT	Fiber 1 GB
12 Worthington Hooker	180 Canner Street, New Haven, CT	Fiber 1 GB
13 New Haven Academy	444-448 Orange Street, New Haven, CT	Fiber 1 GB
14 Lincoln Bassett	130 Bassett Street, New Haven, CT	Fiber 1 GB
15 ESUMS	500 Boston Post Road, West Haven, CT	Fiber 1 GB
16 King Robinson	150 Fournier Street, New Haven, CT	Fiber 1 GB
17 Clarence Rogers	199 Wilmot Road, New Haven, CT	Fiber 1 GB
18 Brennan	200 Wilmot Road, New Haven, CT	Fiber 1 GB
19 West Rock	311 Valley Street, New Haven, CT	Fiber 1 GB
20 Edgewood	737 Edgewood Avenue, New Haven, CT	Fiber 1 GB
21 Hillhouse	480 Sherman Parkway, New Haven, CT	Fiber 1 GB
22 Wexler Grant	55 Foote Street, New Haven, CT	Fiber 1 GB
23 ECMS	495 Blake Street, New Haven, CT	Fiber 1 GB
24 Barnard	170 Derby Avenue, New Haven, CT	Fiber 1 GB
25 Truman	114 Truman Street, New Haven, CT	Fiber 1 GB
26 185 Goffe ST. 1 st Floor	185 Goffe Street, New Haven, CT	Fiber 1 GB
27 Adult Ed	580 Ella Grasso Blvd, New Haven, CT	Fiber 1 GB
28 John Daniels	569 Congress Avenue, New Haven, CT	Fiber 1 GB
29 Sound	60 South Water Street, New Haven, CT	Fiber 1 GB
30 Career	140 Legion Avenue, New Haven, CT	Fiber 1 GB
31 Strong	130 Orchard Street, New Haven, CT	Fiber 1 GB
32 New Strong School	69 Farnham Ave, New Haven, CT	Fiber 1 GB
33 Betsy Ross	150 Kimberly Avenue, New Haven, CT	Fiber 1 GB
34 (formerly New Horizons)	103 Hallock Avenue, New Haven, CT	Fiber 1 GB
35 Beecher	100 Jewell Street, New Haven, CT	Fiber 1 GB
36 Clinton	293 Clinton Avenue, New Haven, CT	Fiber 1 GB
37 Jepson	15 Lexington Avenue, New Haven, CT	Fiber 1 GB
38 Celentano	400 Canner Street, New Haven, CT	Fiber 1 GB
39 (formerly New Light)	21 Wooster Place, New Haven, CT	Fiber 1 GB
40 Clemente	360 Columbus Avenue, New Haven, CT	Fiber 1 GB
41 Coop	177 College Street, New Haven, CT	Fiber 1 GB
42 Metro	115 Water Street, New Haven, CT	Fiber 1 GB
43 FAME (Formerly Columbus)	255 Blatchley Avenue, New Haven, CT	Fiber 1 GB
44 Worthington Hooker	691 Whitney Avenue, New Haven, CT	Fiber 1 GB
45 Mauro Sheridan	191 Fountain Street, New Haven, CT	Fiber 1 GB
46 Bishop Woods	1481 Quinnipiac Avenue, New Haven, CT	Fiber 1 GB
47 Central Kitchen	75 Barnes Avenue, New Haven, CT	Fiber 1 GB
48 Davis	35 Davis Street, New Haven, CT	Fiber 1 GB
49 Hill Central School	140 Dewitt Street, New Haven, CT	Fiber 1 GB
50 Troup	259 Edgewood Avenue, New Haven, CT	Fiber 1 GB

RFP Purpose: The implementation and general monitoring of a fiber circuit Wide Area Network for the New Haven Public School system.

RFP Review Criteria & scoring method:

% Weight	Criteria
35%	Price of Solution/ Eligible Costs
15%	E-Rate experience for similar solutions with similar sized schools/organizations
15%	Tech Support and ability to support requirements of the RFP
15%	Solution Design
10%	Price of Non-E-Rate Eligible Costs
10%	Quality of and Ability to provide “hand off” equipment at each site

2/3/2023

Leased Fiber WAN 2023 – 2028

Prepared for: The City of New Haven [New Haven Public Schools]

RFP Number: 2023-01-1510

Proposal submitted by: Crown Castle Fiber LLC

Bob David

Commercial Account Executive

T: (203) 375-0531 | M: (203) 521-6199

55 Church Street, New Haven, CT 06510

Curt Fox

Director Fiber Enterprise Sales

4 Carriage House Lane, Brookfield, CT 06804

T: (203) 775-5498 | M: (203) 247-2170

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Executive Summary

Company Profile

Crown Castle Fiber LLC, the bidding entity here, is a wholly-owned subsidiary of Crown Castle International Corp., an S&P 500 company that is dedicated to long-term ownership and operation of communications infrastructure. Crown Castle owns and operates approximately 40,000 cell towers and 80,000 route miles of fiber supporting small cells and fiber solutions across every major US market. This nationwide portfolio of communications infrastructure connects cities and communities to essential data, technology and wireless service – bringing information, ideas and innovations to the people and businesses that need them. Custom built networking solutions tailored to specific customer needs enable the highest levels of diversity, security, and protection.

Company Experience

Crown Castle is a fiber solutions provider with a 25-year history of owning and operating communications infrastructure across the country. We work closely with our customers to build a solution that allows them to run their organizations today, while setting the stage for tomorrow's most transformative innovations. Through organic growth, strategic mergers and acquisitions, and an unwavering commitment to customer support and satisfaction, Crown Castle has positioned itself as a top provider of mission critical networking and broadband services utilizing end-to-end fiber connectivity.

Crown Castle's network also offers unparalleled local density and route diversity. Crown Castle is also proud to be one of the only fiber providers who can operate in the power space and diverse power line routes throughout most of our footprint. This makes it possible for customers to have diverse routing for their mission critical services. Crown Castle offers customers a complete suite of fiber-based networking solutions including Dark Fiber, Ethernet, Wavelengths, SONET, Video, Internet Access, Collocation, DDoS, SD-WAN Fixed Wireless, and Managed Security.

Crown Castle is committed to providing exceptional support and care to customers while ensuring industry-leading levels of service and reliability for their networks. At a time when the fiber industry is going through great changes, we're committed to being a dependable, stable partner that you can count on today, tomorrow, and for many years to come. Since we own our entire fiber network, we are directly invested in its integrity and can provide faster response times and issue resolution.

Crown Castle continually receives the highest marks and reviews in the industry for our operations and customer support. Since 2009, Atlantic-ACM has ranked us first in the industry in categories including Network Performance, Provisioning, and Customer Service.

Your District, Our Expertise

Today's modern classrooms and libraries use advanced technologies and applications that require high-performing network solutions. As a long-standing E-rate partner across every major US market and connectivity to more than 500 school districts and libraries, we have a depth of experience and expertise you can count on. And with our broad range of both lit and dark fiber solutions, we are in the best position to help you build and maintain exactly the network you need today and in the future.

Why Crown Castle?

Expertise:

- We are a certified USAC / E-rate Program Provider with experience implementing and managing both lit and dark fiber solutions.

Consultation:

- We take the time to carefully consider all your needs and deliver a solution that meets your business requirements and opens up new opportunities.

Service:

- We have locally based service teams who are available to you whenever you need them, and with our around-the-clock Network Operations Center, you can be sure your network will always be in good hands.

Streamlined solution:

- With a single point of contact, you'll always know who to reach out to for all of your network needs.

Crown Castle Financial Summary

We are a wholly owned subsidiary of Crown Castle Inc., a Delaware corporation ("CCI"). CCI is an S&P 500 company and is a publicly traded company on the New York Stock Exchange (NYSE: CCI).

Key Financial Information about CCI:

- Approximately 4,800 employees nationwide
- Total assets of \$39.071 Billion, as of March 31, 2022
- Total net revenues of \$1.742 Billion for the quarter ending on March 31, 2022
- Total market capitalization of approximately \$80 Billion, as of April 30, 2022

Crown Castle Inc. is publicly traded and subject to Sections 13 and 15(d) of the Securities Exchange Act of 1934. Annual reports on Form 10-K under SEC Filings, and Corporate Financial Statements under Earnings Materials can be found on the Crown Castle Investor Page at:


<https://investor.crowncastle.com>

E-Rate + Federal Funding Expertise

E-rate, the schools and libraries Universal Service support mechanism, provides discounts to assist eligible schools and libraries in the United States in obtaining affordable telecommunications and internet access solutions. With participation in the E-rate program for over 18 years and dedicated E-rate personnel, we are experts in the field aiding our customers to participate in the program through a seamless process. One of Crown Castle’s prime missions is to provide fiber based WAN services for academic institutions through this E-rate program. Crown Castle currently serves over 500 educational institutions and is among the top 10 service providers across the country for E-rate funding.

Bidding entity: Crown Castle Fiber LLC
SPIN (498 ID) # 143005274
FCCRN # 0006-2544-03

Green Light Status



Federal Communications Commission

Commission Registration System (CORES)

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Logged In As: fernanda.biehl@crowncastle.com | [Logout](#)

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0006254403	Crown Castle Fiber LLC	Green Light	View/Make Payments

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Previous

Service Request/Requirements: Response

Crown Castle has extrapolated and has provided a direct response to each line item from the RFP

1. Provision of a Leased Fiber Circuit WAN Solution

1) Provide a network based on leased optical fiber to connect approximately 50 NHPS sites. The solution must provide a leased fiber based circuit network with:

1GB connection to each site from Gateway Building – 255 Blatchley Avenue as defined on the site list included in this RFP, include all hardware and software required to meet the expectations of this RFP, and provide all configuration/programming required during the integration of the solution.

Crown Castle acknowledges and will comply with the above request. Crown Castle is providing services to all locations at this time and will provide additional 1Gb connections from all locations to the requested 255 Blatchley location.

2) Solutions must have both flexible and affordable bandwidth upgrade paths.
Crown Castle acknowledges and will comply with the above request.

3) Solutions must allow for affordable additions of new sites and flexibility about moving sites.
Crown Castle acknowledges and will comply with the above request. Crown Castle will be happy to work with the City of New Haven/NHPS on any changes that may be necessary on an individual case basis

4) Solutions must be Layer 3; this enables both management and security features that are critical to our operation. The current WAN solution that is in operation is Layer 3.
Crown Castle acknowledges and will comply with the above request. Crown Castle will deploy identical infrastructure and provide identical transport protocols as delivered today.

5) Solutions must have fiber connection hand offs on both ends.
Crown Castle acknowledges and will comply with the above request.

6) Vendor must work closely with the NHPS Information Technology Department (NHPS IT) staff during each phase of the project: implementation, optimization, and formal handover to NHPS. NHPS IT will ultimately be approving each stage of project advancement.
Crown Castle acknowledges and will comply with the above request.

7) Fully document the network installation and keep documentation up to date throughout each phase of the project. Provide all documentation in an organized binder at the end of the project during handover to the NHPS IT Department.
Crown Castle acknowledges and will comply with the above request. The Dedicated Crown Castle Project Manager will provide information upon request.

8) Ability to provide an optical fiber based solution is key; NHPS will not be responsible for the costs involved with extending an optical fiber network to any site.

Crown Castle acknowledges and will comply with the above request. We are providing a 100% Crown Castle owned and operated, Fiber Optic network for exclusive use to the City of New Haven and NHPS.

9) Ability to insure traffic shaping and quality of service configurations on the new network are properly set is critical. The vendor should have staff resources that are fully capable of insuring that the districts existing VOIP system and data network will operate on the new circuits and network hardware configurations. It is the vendor's responsibility to insure proper traffic shaping and quality of service settings.

Crown Castle acknowledges the above request. With MAPL networks the network is dedicated to the City of New Haven and not traversing the "Public Network" which leaves the ultimate traffic shaping to the City of New Haven. This enables the utmost control of traffic flow.

We will utilize the existing equipment, deploying identical Fiber infrastructure, with identical transport protocols as delivered today to the new Hub location creating a resilient network. Please see the following Scope of Work:

10) Provide 100% CISCO compatible solutions for any router/network hardware replacements that may be required.

Crown Castle acknowledges and will comply with the above request.

11) The go-live date for the new network must be July 1st 2023, all required prep work must be completed before that date at no cost to the BOE.

Crown Castle acknowledges and will comply with the above request.

12) During the selection process finalists must be willing to provide a detailed presentation regarding their solution in person at the Gateway Center Offices at 54 Meadow street in New Haven CT.

Crown Castle acknowledges and will comply with the above request. Our team would be more than happy to discuss the new topology changes.

13) Vendors must provide a staffing plan that clearly lists a staff roster with qualifications for all members of their team that will be involved with executing the solution plan.

Crown Castle acknowledges and will comply with the above request.

We have provided our Account Management Team in the following sections of this response and will provide full resumes upon request. Additional members such as Field Engineers and Provisioning team members to be determined.

14) Vendor will be responsible for resolving all circuit related outages and must have a 1 business day maximum resolution time.

Crown Castle acknowledges the above request. Crown Castle will work in the most expeditious manner to resolve all Crown Castle related outages. Please see our MTTR in the Network Management Services for Monitoring and Alerting section of this response.

15) Vendor will provide the circuits only to all sites listed below, including equipment needed at 255 Blatchley Avenue Street for the handoff to our network.

Crown Castle acknowledges and will comply with the above request. Please see the following Scope of Work.

16) Vendor will be responsible for removal of all trash and debris created by their work.

Crown Castle acknowledges and will comply with the above request.

2. Maintenance Requirements of Leased Fiber WAN:

1) Proposed solutions to address this service will report to and be in communication with the NHPS IT Manager or their designee during service outages.

Crown Castle acknowledges and will comply with the above request.

2) Provide a solution to troubleshoot all circuits that comprise the NHPS Wide Area Network from at least 7am to 10pm daily for uptime and errors.

Crown Castle acknowledges and will comply with the above request.

3) Vendor will be responsible for coordination and execution of resolving all circuit related outages and must have a 1 business day maximum resolution time.

Crown Castle acknowledges the above request. Crown Castle will be responsible for the coordination and execution of resolving all Crown Castle related outages in the most expeditious manner. Please see our MTTR in the Network Management Services for Monitoring and Alerting section of this response.

4) Vendor must be comfortable with and successful at performing remote support work on all network hardware that they have put in place as part of their solution.

Crown Castle acknowledges and will comply with the above request.

5) Outages that are hardware related must be resolved within 2 business days.

Crown Castle acknowledges the above request. Crown Castle will make every effort possible to resolve Crown Castle Hardware related issues in the most expeditious manner. We intend to utilize the same Contract and SLA's on file with the City of New Haven/NHPS.

6) E-mail notifications of outages and errors must be reported first to the defined network services contact for NHPS IT.

Crown Castle acknowledges the above request. We will continue to support the City of New Haven/NHPS in the same manner as provided today.

7) All outages must also be reported to the NHPS IT Manager by phone and followed up by an e-mail.

Crown Castle acknowledges the above request. We will continue to support the City of New Haven /NHPS in the same manner as provided today.

8) Updates for status must be given every 2 hours via e-mail and at resolution of problem.

Crown Castle acknowledges and will comply with the above request.

9) Provide NHPS IT Manager with a web based portal to obtain reports concerning: any circuit problems & outages (and their resolution, life cycle time), average bandwidth usage per site, network errors (type and severity), and overall metric performance trending for each site and the network overall. These reports should be updated at least weekly.

Crown Castle acknowledges the above request. The Portal as provided to the City of New Haven/NHPS today, provides most of the requested statistics/metrics. Our Client Service Manager will manually gather requests and route to our internal workgroups [depending on content] to provide additional details upon request.

Additional Requirements for Vendor Responses:

1) Vendor must designate which services are E-RATE eligible and which are not in their response and provide separate pricing for each.

Crown Castle acknowledges and will comply with the above request.

2) Vendors must have a FCC registration number.

Crown Castle acknowledges and will comply with the above request. FRN: 0006-2544-03

3) Vendor must not require the NHPS to Indemnify them, asking for such an agreement is grounds for disqualification.

Crown Castle acknowledges and will comply with the above request

4) Vendors must provide their standard sample agreement template to the NHPS for review.

Crown Castle acknowledges and will comply with the above request. We have provided this as requested as a separate Attachment to this response, However, we anticipate using the existing agreement on file with City of New Haven / NHPS.

5) Vendor Must provide response in electronic format (i.e. PDF)

Crown Castle acknowledges and will comply with the above request

6) School sites may need to be added, or temporarily removed and then added again. The response to this RFP should indicate how such changes would be handled.

Crown Castle acknowledges and will comply with the above request. We would be happy to work with the City of New Haven and NHPS on these topology changes on a case by case basis. Communication to the Account Executive and your dedicated Client Service Manager would be the initial start to this process.

7) On the response form provided the vendor must provide 5 Year contract (Circuits AND Equipment).

Crown Castle acknowledges and will comply with the above request.

Work Plan / Scope of Work

Services: 1Gb MAPL to 2nd Hub location creating resiliency

Locations:

HUB: 255 Blatchley

HUB: 54 Meadow

ZLOCS:

100 James St, 1st Floor, New Haven, CT 06513
100 Jewell St, 1st Floor, New Haven, CT 06515
103 Hallock Ave, 1st Floor, New Haven, CT 06519
114 Truman St, 1st Floor, New Haven, CT 06519
130 Bassett St, 1st Floor, New Haven, CT 06511
130 Orchard St, 1st Floor, New Haven, CT 06519
133 Nash St, 1st Floor, New Haven, CT 06511
140 Legion Ave, 1st Floor, New Haven, CT 06519
15 Lexington Ave, 1st Floor, New Haven, CT 06513
150 Fournier St, 1st Floor, New Haven, CT 06511
150 Kimberly Ave, 1st Floor, New Haven, CT 06519
164 Grand Ave, 1st Floor, New Haven, CT 06513
170 Derby Ave, 1st Floor, New Haven, CT 06511
175 Water St, 1st Floor, New Haven, CT 06511
180 Canner St, 1st Floor, New Haven, CT 06511
185 Barnes Ave, 1st Floor, New Haven, CT 06513
185 Goffe St, 1st Floor, New Haven, CT 06511
199 Wilmot Rd, 1st Floor, New Haven, CT 06515
200 Wilmot Rd, 1st Floor, New Haven, CT 06515
21 Wooster Pl, 1st Floor, New Haven, CT 06511
259 Edgewood Ave, 1st Floor, New Haven, CT 06511
293 Clinton Ave, 1st Floor, New Haven, CT 06513
311 Valley St, 1st Floor, New Haven, CT 06515
35 Davis St, 1st Floor, New Haven, CT 06515
360 Columbus Ave, 1st Floor, New Haven, CT 06519
375 Quinipiac Ave, 1st Floor, New Haven, CT 06513
400 Canner St, 1st Floor, New Haven, CT 06511
444 Orange St, 1st Floor, New Haven, CT 06519
460 Lexington Ave, 1st Floor, New Haven, CT 06513
480 Townsend Ave, 1st Floor, East Haven, CT 06512
495 Blake St, 1st Floor, New Haven, CT 06515
500 Boston Post Rd, 1st Floor, West Haven, CT 06516
511 Chapel St, 1st Floor, New Haven, CT 06511
115 Water St, LL1 Floor, New Haven, CT 06511
1481 Quinipiac Ave, 1st Floor, New Haven, CT 06513
177 College St, 1st Floor, New Haven, CT 06510
191 Fountain St, 1st Floor, New Haven, CT 06515
691 Whitney Ave, 1st Floor, New Haven, CT 06511
55 Foote St, 1st Floor, New Haven, CT 06511
569 Congress Ave, 1st Floor, New Haven, CT 06519
580 Ella T Grasso Blvd, 1st Floor, New Haven, CT 06519
60 S Water St, 1st Floor, New Haven, CT 06519
69 Farnham Ave, 1st Floor, New Haven, CT 06515
737 Edgewood Ave, 1st Floor, New Haven, CT 06515
75 Barnes Ave, 1st Floor, New Haven, CT 06513

Description:

Crown Castle is currently providing 1GbE MAPL solution to all locations back to 54 Meadow

Crown Castle will splice new fiber from the Crown Castle existing backbone to the Z locations, all terminating back to 255 Blatchley.

The Spliced Dark Fiber attributes will meet or exceed Corning SMF-28 qualifications of Single Mode ITU G.652 compliance for spectrums between 1300-1550 nanometers. Crown Castle will test each splice upon completion to ensure <.20dbm of loss. Crown Castle will complete a final end to end Power loss of each location.

Crown Castle will be installing a NEW 1Gb SFP Line side optic at each Z Location in the existing Adva/MRV-OSV8 to connect to the newly spliced fiber.



NHPS will terminate into E1000 [Electrical Termination] off of the additional Ethernet port off of the existing Crown Castle owned and operated Adva/MRV.

At the Hub Locations: Crown Castle will install Adva XG480's at Meadow and Blatchley.



These are larger nodes are capable of terminating all incoming locations and providing a proper client 1/10/40/100G handoff to City of New Haven / NHPS.

This 2U node accommodates dual power NEMA 5-15P Feeds drawing <15amps. Additional interfaces such as 40/100G can be accommodated at this location to facilitate consolidation, grooming and new services.

Grooming of existing and installation of new 1G MAPL services at the Meadow and Blatchley locations in conjunction with the existing MRV9244 and new Adva XG480 will be communicated in detail with NHPS, developing a cohesive and agreed upon Method of Procedure at the time of implementation.

Timeline

Crown Castle has provided an estimated timeline for Onnet locations of less than <120 days

- ▲ Day 1-Order signed
- ▲ Day 3-Order verified and in the system, task assignments begin
- ▲ Day 15-Initial engineering package to build laterals completed, submit to APS, local Agencies, etc
- ▲ Day 30-Engineering of fiber splicing and patch installation completed, assign tasks to splicing teams, schedule for after lateral build is completed
- ▲ Day 45-Follow up on new lateral applications, work through any concerns that any of the various agencies have
- ▲ Day 50-Verify BOM with vendor, place order for appropriate fiber and equipment (fiber termination panels)
- ▲ Day 60-Receive approval for build of new lateral, finalize construction design, and submit order to 3rd party construction firm
- ▲ Day 70-Lateral builds begins
- ▲ Day 80-Schedule splicing to coincide with completion of lateral build
- ▲ Day 90-Lateral build complete
- ▲ Day 95-Splicing complete, OTDR testing of fibers can begin
- ▲ Day 100-Testing of fibers complete, test results recorded.
- ▲ Day 105-Hand-over of network to customer
- ▲ Day 120-Customer accepts network, billing begins

**Installation timeframes are estimations; each location will vary with many locations becoming active for CC provisioning and testing within a shorter installation interval.

Account Management

Crown Castle will provide the City of New Haven with a dedicated account team that will support the newly proposed solution from Point of Sale and through Implementation.

- VP Enterprise Sales – Dave Hurwitz
- Regional Director Enterprise Sales – Tim Smith
- Director Fiber Enterprise Sales – Curt Fox
- Commercial Account Executive – Bob David
- Director Government and Education – Anthony Rasco
- Business Development Manager – Glenn Gradel
- Regional Director Sales Engineering – Angelo Germani
- Manager Sales Engineering – Jason Ewing
- Senior Sales Engineer – Ken Felton
- Senior Complex Solutions Engineer – Jason Szczypien
- Director of Project Management – Darrin Smith
- Director of Client Services – Dale Kammerich
- Client Service Manager – Marla Risley

Implementation Services Plan

Project Managers (PMs) are responsible for managing the delivery of services to Crown Castle customers. The PM role is comprised of four stages - Order Validation, Order Kickoff, Service Provisioning and Order Completion.

Project Managers (PMs) will:

- Coordinate and lead customer meetings, including customer kick-off calls and regularly scheduled customer status update calls.
- Manage the activities of internal Crown Castle operational and engineering groups to ensure proper planning, communications, and implementation of solutions.
- Communicate customer requirements to other project stake holders to achieve required results.
- Perform critical path analysis for projects to identify, and manage all aspects of the service deployment and mitigate identified risks.
- Develop a relationship with the customer and serve as the primary point of contact for project status and deliverables.
- Resolve issues in a timely fashion as they present themselves during the project interval.
- Upon project completion insure project documents are complete, accurate, and archived appropriately. Deliver all required customer turn-up documentation to identified point of contact.

Project Plan

Summarized below are the “key” milestones and activities that make up a significant portion of the implementation timeline for network installation. The plan below is flexible and Crown Castle can adjust to meet the needs of the customer should you desire to meet with a project manager and other project team members more or less often.

“Key” milestones associated with the Project Plan:

Kickoff meeting: Once a signed contract is received, the designated project manager is assigned to the project and will schedule a kickoff meeting with all parties involved in the installation. Timelines and milestones will be discussed and agreed upon. Space and electrical requirements will be discussed for each individual site. Priority sites will be identified and receive precedence. Ongoing updates will be provided by the assigned project manager.

Aerial Network Extensions: This activity covers all required engineering, design, and documentation, the formal Right of Way and Municipal consent applications and approvals and the physical installation of the fiber optic cabling on utility infrastructure.

Building Entry Construction: Crown Castle will perform site surveys and document all engineering and construction work required to physically install the fiber optic network including outside conduit and inside extended wiring.

Splicing Termination and Testing: This activity takes place once construction of the aerial network and building entries are completed. Proposed WAN undergoes testing, acceptance and turn up.

Turn Over and Billing: Crown Castle will coordinate all testing of the network with the customer. Once the DF is performing as contracted, Crown Castle will turn over the network to the customer and initialize billing.

Each of the above milestones includes numerous activities that will be completed by Crown Castle across the design/engineering and construction of the network:

System Design/Engineering

Crown Castle shall provide complete design services. These services shall be:

Fiber Route: The Fiber Route consists of all buildings, streets, poles, conduits and manholes used for routing connectivity. The routing shall include:

- Overall Route Survey
- Trunk and Lateral Cabling Distances
- Pole & Span Measuring
- Conduit Evaluations
- Drafting and Strand Maps
- Ownership Submittals

Make Ready: Make Ready consists of all engineering and submittals for making the system compliant with the utilities guidelines for attaching or having fiber cable in the communications space. The make ready engineering shall specify:

- Cable Clearances
- Utility Pole Replacement
- Conduit and Pole Permits

Service Entrance: Service Entrance Engineering determines where the service enters and terminates in a structure. The Service Entrance Engineering shall include:

- Service Entrance Surveys
- Service Entrance Drawings

System Construction

Crown Castle shall provide all construction and make ready necessary to establish the service.

The following procedures shall be taken prior to installation:

- Develop a comprehensive overall design package
- Obtain all necessary permits
- Organize and direct pre-construction meetings
- Obtain all necessary insurance and bonding

Our services during the installation phase shall include:

- Initial Project kick-off review meeting with the customers project staff
- Site visits with the customers project staff
- Contract schedule and equipment delivery monitoring
- Shop drawings and submittals review
- System design updates
- Make-ready pole work

- Demarcation extensions in each building to the predetermined equipment rack location
- System stranding and accessories
- Optical cabling and accessories to provide single mode fiber to each building
- Splicing
- Final system testing
- Power Meter
- OTDR

Loss Estimates: The Loss Estimates shall be calculations based on the actual field conditions that will show the estimated loss and dispersion characteristics for each link. The calculations show:


- Fiber Optic Attenuation
- Fiber Optic Connector Loss
- Splice Loss
- Total Passive System Attenuation
- Chromatic Dispersion (ICB)

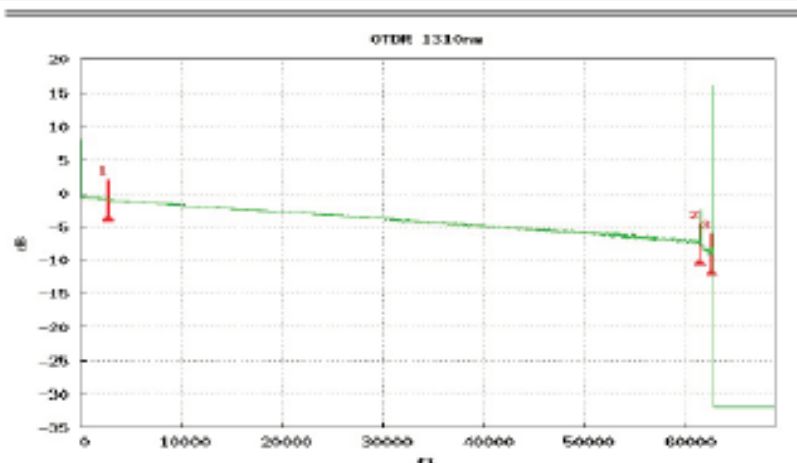
Sample Test Results

Print date : 11/01/2017 22:59

File : wnecdkspr.00007 p-1.sor.pdf

VIavi Cable Id : wnecdkspr.spr.00007 Fiber Id : PORT 1
 Location A : 1215 wilberham rd.sprgflid.ma Location B : 593 longmeadow rd.sprgflid
 Job Id : Technician Id : Tim A

T-BERD 2000 (S/N 15475)		4126 LA (S/N 6225)				Date : 11/01/2017 22:58		
Setup								
OTDR		1310nm	100ns	40km	8ft	20.0s	1.46750(G652 G657)	-79.0 dB
Alarms								
Thresholds		None						
Summary								
Filename	Laser nm	Link Loss dB	Link Or Fiber End dB	Fiber End ft	Direction	EventAlarms		
wnecdkspr.00007 p-1.sor	1310	7.924	31.38	62507.87	1215 wilberham rd.sprgflid.ma -> 593 longmeadow rd.sprgflid	3		
<div><div></div></div>								



Event	Distance ft	Loss dB	Reflect. dB	Slope dB/km	Section ft	T. Loss dB
1	2773.10	0.078		0.585	2773.10	0.278
2	61452.25	1.252	-50.15	0.347	58679.15	6.586
3	62507.87		> -9.02		1055.62	7.924

OTDR TEST RESULT SAMPLE

RFC 2544 Ethernet Test Report

Configuration Name	lg test
Customer	NYSE-Euronext
Technician	Adam Cohen
Location	777 Central Blvd
Comments	36244-et
Date	09/28/2012
Time Start	04:54:17 PM
Time End	05:09:46 PM
RFC 2544 Mode	Symmetric
Test Instrument Name	T-BERD/MTS5800
Serial Number	WMDP0100820045
Software Revision	BERT 3.0

RFC 2544 Ethernet Test Report

Test Set Setup

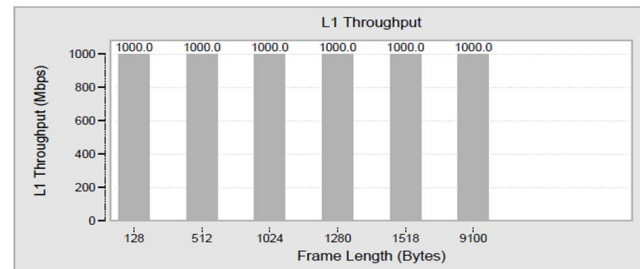
Termination	1GigE Layer 2 Traffic Term
Pause Advrt	Both
FDX Capable	Yes
HDX Capable	Yes
Framing	DIX
Encapsulation	None
Source Address	00:80:16:8A:69:90
Destination Address	00:80:16:8A:69:9D

Auto Negotiation Status

Pause Capable	Both Rx and Tx
FDX Capable	Yes
HDX Capable	Yes

RFC 2544 Ethernet Test Report

Throughput Test Results:

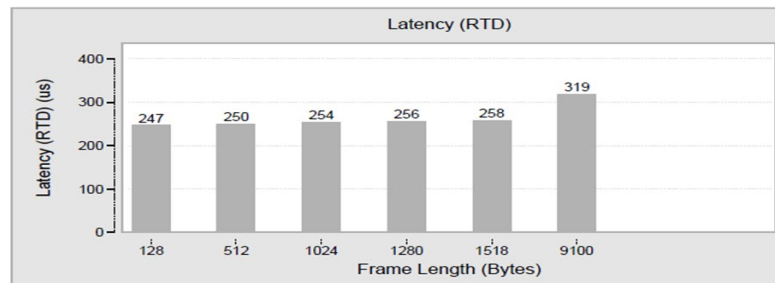


Test Configuration

Tests to Run	Throughput
	Latency (RTD)
	Frame Loss Rate
Maximum Test Bandwidth	1000.00 Mbps
Frame Lengths	128, 512, 1024, 1280, 1518, 9100
Bandwidth Measurement Accuracy	To within 0.01 (Mbps)
Throughput Zeroing-in Process	RFC 2544 Standard
Throughput Frame Loss Tolerance	0%
Throughput Trial Duration	20 seconds
Throughput Pass Threshold	Not Selected
Number of Latency (RTD) Trials	2 trials
Latency (RTD) Trial Duration	20 seconds
Latency (RTD) Load	100%
Latency (RTD) Pass Threshold	Not Selected
Frame Loss Test Procedure	RFC 2544
Frame Loss Trial Duration	20 seconds
Frame Loss Bandwidth Granularity	100 Mbps

RFC 2544 Ethernet Test Report

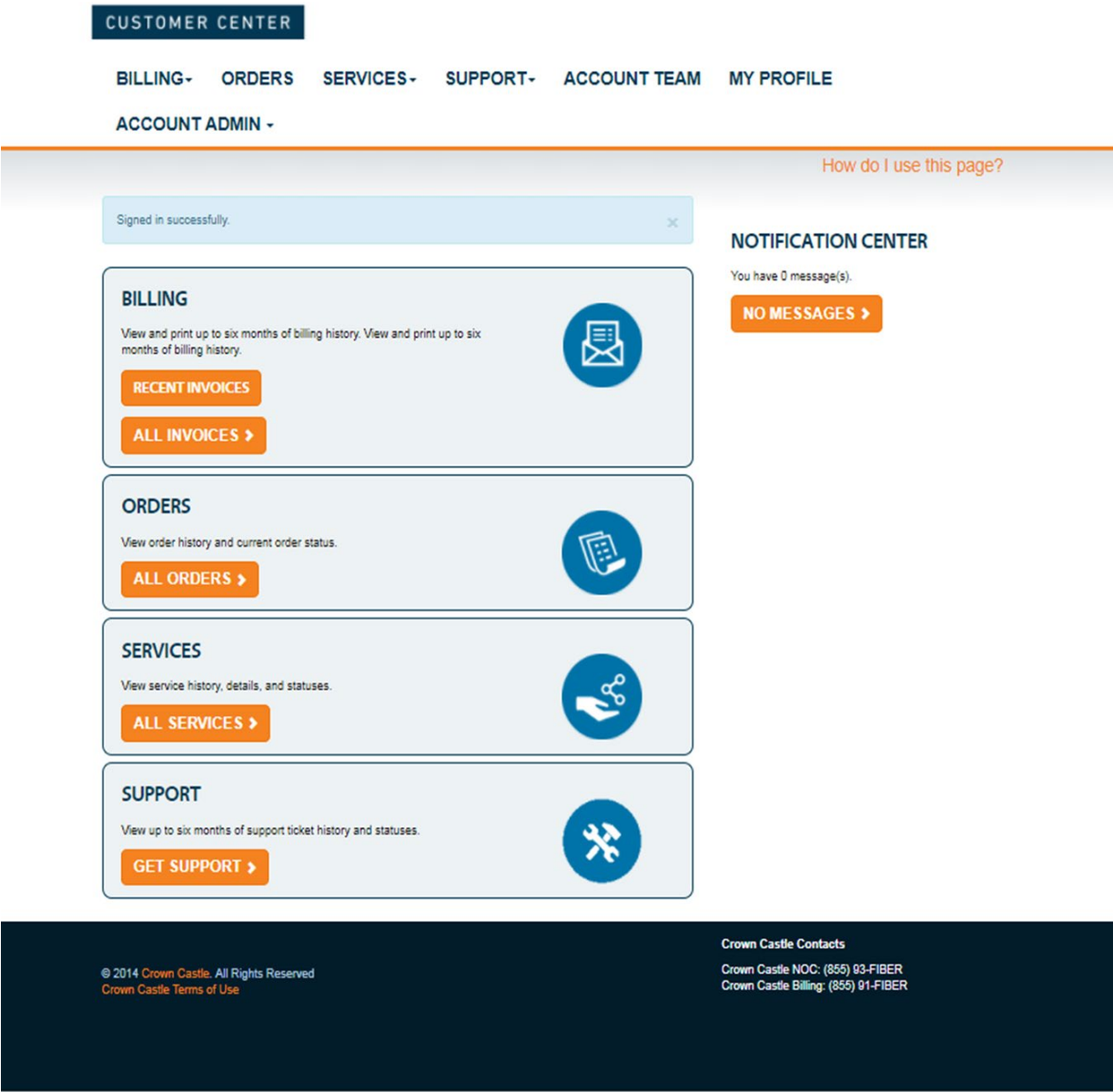
Latency (RTD) Test Results:



Frame Length (Bytes)	Latency (us)	Measured L1 Rate (Mbps)	Measured L1 (% of Line Rate)	Measured Rate (frms/sec)	Pause Detected
128	247	999.96	99.996	844561	No
512	250	999.96	99.996	234953	No
1024	254	999.96	99.996	119727	No
1280	256	999.96	99.996	96150	No
1518	258	999.97	99.997	81272	No
9100	319	999.99	99.999	13706	No

Crown Castle Customer Center Portal

The Customer Center portal provides around the clock access to information about your services from Crown Castle, including Billing, Orders, Services, Support and your Account Team contacts. Below are some sample screen shots.



Services Screen: Circuit View example. Click any circuit to see specific Service Details

Circuit ID	Service Number	Order Number	A Location	Z Location
26855-ET-GDTWNYAH-W...	NE	O33607NE	131 Locust Ln, 1st Floor, Newburgh, NY 12550	400 Hamilton Ave, 3rd Floor,
26883-ET-GDTWNYAH-W...	HV	O33569HV	131 Locust Ln, 1st Floor, Newburgh, NY 12550	400 Hamilton Ave, 3rd Floor,
26884-ET-GDTWNYAH-W...	HV	O33569HV	131 Locust Ln, 1st Floor, Newburgh, NY 12550	400 Hamilton Ave, 3rd Floor,
26161-ET-COLNNYKS-H...	NE	O33600NE	1146 Route 9 G, 1st Floor, Hyde Park, NY 12538	2 Kross Keys Dr, 1st Floor, A
26885-ET-GDTWNYAH-W...	HV	O33570HV	131 Locust Ln, 1st Floor, Newburgh, NY 12550	400 Hamilton Ave, 3rd Floor,
26886-ET-GDTWNYAH-W...	HV	O33570HV	131 Locust Ln, 1st Floor, Newburgh, NY 12550	400 Hamilton Ave, 3rd Floor,
26125-ET-COLNNYKS-M...	S39308	O33548HV	31 Baileys Gap Rd, 1st Floor, Highland, NY 12528	2 Kross Keys Dr, 1st Floor, A
26993-ET-COLNNYKS-SF...	S39271HV	O33548HV	12 Hammond Hill Rd, 1st Floor, Millbrook, NY 12545	2 Kross Keys Dr, 1st Floor, A
26126-ET-COLNNYKS-M...	S39308NE	O33599NE	201 Baileys Gap Rd, 1st Floor, Highland, NY 12528	2 Kross Keys Dr, 1st Floor, A
26994-ET-COLNNYKS-SF...	S39271HV	O33548HV	12 Hammond Hill Rd, 1st Floor, Millbrook, NY 12545	2 Kross Keys Dr, 1st Floor, A

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Displaying circuits 1 - 10 of 890

Click icon to open Service Statistics view.

Open NOC Ticket on any Circuit

Use advanced filters to search – Begin typing any Circuit ID to locate specific ID

Locate Circuits based on A and Z Locations

Orders Screen: Here you will find pending and completed order information. Need status of a current order? Simply click on the Order# in column 1 and it will then show all information pertaining to that order.

ORDERS:

Order #	Order Type	Status ↑	Term in Months	Creation Date	Completion Date
O9957HV	New Service	Complete		Oct 25, 2011	Nov 22, 2011
O9972HV	New Service	Complete		Oct 27, 2011	Mar 29, 2012
O9983HV	New Service	Complete		Oct 31, 2011	Nov 22, 2011
O9265HV	New Service	Complete		Nov 29, 2011	Aug 01, 2011
O9359HV	New Service	Complete		Dec 12, 2011	Oct 06, 2011
O9360HV	New Service	Complete			Oct 06, 2011
O9402HV	New Service	Complete	60	Jul	Aug 01, 2011
O9408HV	New Service	Complete	60	Jul	Aug 31, 2011
O9410HV	New Service	Complete	60	Jul	Aug 01, 2011
O9411HV	New Service	Complete	36	Jul	Aug 02, 2011

Page 1 of 78

Displaying orders 1 - 10 of 772

Advance/Go Back by page when searching numerous records

Use advanced search features to sort or filter by status. Contact your CSM for order type definitions.

NHPS WAN

Support Screen: This section of the site will allow you to create a new ticket, view pending and closed tickets, and interact directly with the NOC via integrated messaging.

Link to specific ticket detail

Use advanced filters to narrow results

Sort by Circuit ID

Ticket #	Status	Trouble Reported	Start Date	Service ID	Circuit ID	Customer Circuit ID
LT1436135	Closed	Sort Ascending	Jul 07, 2014		1006-OC12-AVONM...	
LT1435764	Closed	Sort Descending	Jun 27, 2014		13/HFGS/003275/OED	
LT1435556	Closed	Columns	Jun 23, 2014		26857-ET-GDTWNY...	
LT1435401	Closed	Unlock	Jun 20, 2014		12273-ET-AVONMAC...	
LT1433736	Closed	Lock	May 20, 2014		26181-ET-COLNNYK...	
LT1433456	Closed	Filters	May 14, 2014		12275-ET-AVONMAC...	
LT1433195	Closed				25424-t3z-mdtwynyxa...	
TEST143...	Closed	Other			26987-ET-COLNNYK...	
LT1432940	Closed	Service Down			26634-ET-MONRNY...	
LT1432436	Closed	Service Down			1001-DS3-PHLAPAF...	

Page 1 of 7

Displaying orders 1 - 10 of 70

NOC Messaging Screen: Create Notes and view comments history.

Create Note:

Submit

Customer Updates

Crown Castle Comment At : 9/13/2017 12:09 PM
Your ticket is now resolved and set to a closed status. Results: Message sent successfully.

Customer Comment At : 9/12/2017 4:21 PM
Thank you, you can close out this ticket!

Crown Castle Comment At : 9/12/2017 4:18 PM
Greetings, We do see the following comments in the notes section of our ticket: "Miles and I were doing a test of the NOC comment feature of the portal. Please let me know if you see the Customer Comments in this dialogue." Regards, Lighttower NOC Results: Message sent successfully.

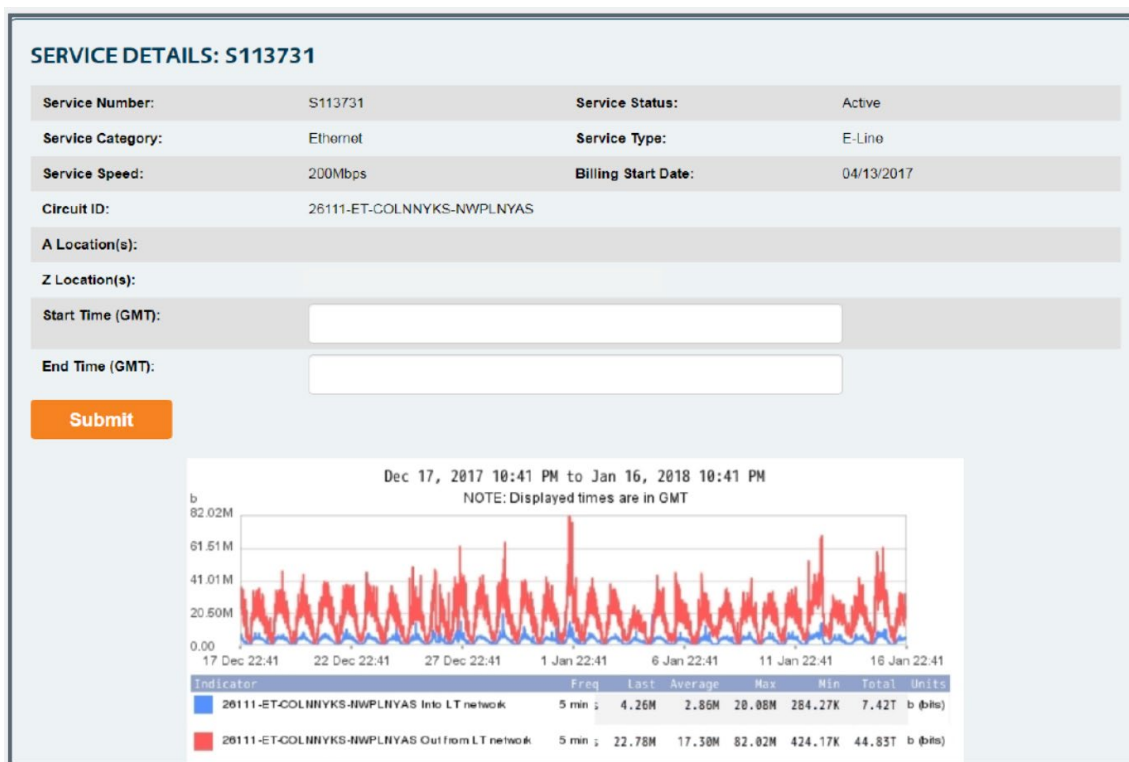
Customer Comment At : 9/12/2017 4:03 PM
Miles and I were doing a test of the NOC comment feature of the portal. Please let me know if you see the Customer Comments in this dialogue.

Crown Castle Comment At : 9/12/2017 3:58 PM
Greetings, We are currently showing the hand off to your equipment down located at 26 Broadway, New York, NY. You will want to verify your equipment at this location. Regards, Lighttower NOC Results: Message sent successfully.

Crown Castle Comment At : 9/12/2017 3:50 PM
Greetings, This ticket was opened via our customer portal, could you please provide some details as to what is wrong with the circuit? Regards, Lighttower NOC Results: Message sent successfully.

Customer Comment At : 9/12/2017 2:38 PM
Did the NOC get this?

Service Utilization Statistics Screen: Utilization graphs are real-time statistics that allow you to monitor and manage your E-Line and Internet service bandwidth more effectively. You will be able to see your information in easy-to-view graphs, and you can display your information across multiple time periods:



***The above utilization graph is only an example. The Service Utilization Statistics Screen varies in certain Crown Castle Markets.

These graphs are useful for:

- Long Term Capacity Planning - Analyze your bandwidth across time to plan long-term resource allocation across your entire network.
- Short Term Capacity Management - View real-time graphs to understand how data is traversing your network, and optimize your connections accordingly.
- End-User Experience Management - Make sure your internal customers are satisfied by detecting performance fall-off early and taking preemptive action to resolve service degradations before end-users are impacted.
- Non-Intrusive Visibility - Unlike other network reporting tools, Crown Castle Network Statistics does not need an in-line probe. The equipment that we deliver your bandwidth on supports Network Reporting.
- Executive Reporting - Provide easy-to-view graphs of your network to your internal customers.

Crown Castle Utilization Bandwidth graphing is just one more tool that Crown Castle provides. It empowers you and your organization to more effectively deploy, manage, solve, and optimize your network environment.

Network Management Services for Monitoring and Alerting

Geographic Diverse Locations

Generator & UPS Protected Facilities
On-Net Network Connectivity

- Melville, New York
- Rochester, New York
- Doral, Florida
- Canonsburg, Pennsylvania

Trouble Ticket Management

- 24x7 Onsite Management Support
- Tier I & II Troubleshooting
- Incident Management
- Customer Communications & Escalations
- Technical Support Engineers
- Tier III Troubleshooting
- Vendor TAC Engagement
- Engineering Engagement

Network Operations Center Systems and Tools

IBM Tivoli NETCOOL Network Management System

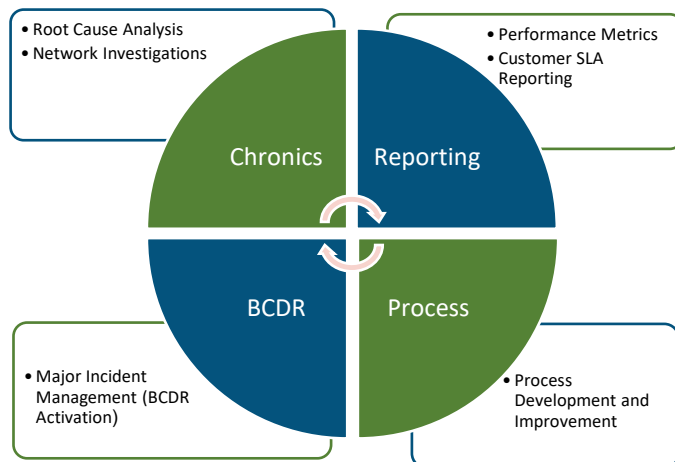
- Automation & Enhancements
- Alarm Filtering
- Alarm Enrichment
- Backbone Topology MAPS
- Customizable, dedicated customer alarm views

Microsoft Dynamics CRM Ticketing System

- Automation & Enhancements
- Automatic Notification upon ticket creation
- Standardize Templates for Communication
- Automatic Ticket Assignments
- Automated management escalation of unresolved Trouble tickets.

Systems & Tools

- Microsoft CRM
- NETCRACKER
- OSP Insight GIS System
- Operations Data Warehouse
- Traffic / Taper Reporting Tool



MTTR:

Max time to repair Severity 1 – 4 hrs
Max time to repair Severity 2 – 6 hrs
Max time to repair Severity 3 – 8 hrs

Status Update Frequency Severity 1 – 60 Min
Status Update Frequency Severity 2 – 2-4 hrs
Status Update Frequency Severity 3 – 8 hrs

Crown Castle NOC Escalation List

#	Title	Name	Email	Office #	Cell #
1st	Shift Managers	On duty	FiberSupport@crowncastle.com	Primary: 1-855-93-FIBER Secondary: (844) 583-4237 Non-toll free: (845) 458-7799	
2nd	Manager, NOC Operations	Tommy Fay	Thomas.Fay@crowncastle.com	(631) 300-3783	(516) 987-3578
	Manager, NOC Operations	Steve Cassianos	Steve.Cassianos@crowncastle.com	(212) 337-4083	(646) 745-4023
3rd	Sr. Manager, NOC Operations	Miles O'Shaughnessy	Miles.OShaughnessy@crowncastle.com	631) 300-3781	(631) 774-2412
4th	Director, Network Assurance	Steve George	Stephen.George@crowncastle.com	(978) 268-9370	(781) 254-8795
5th	Vice President, Network Operations	Sheldon Jordan	Sheldon.S.Jordan@crowncastle.com	(786) 701-7404	(305) 206-2976
6th	SVP Project Delivery and Design and Construction - Fiber	Karen Rohrkemper	Karen.Rohrkemper@crowncastle.com	(281) 640-3651	(513) 478-4448

Crown Castle Business Continuity

Today, there are many steps already being taken and actions defined within Crown Castle's standard operating policies and procedures that serve or act as business continuity guidelines.

- Diversity in Network Operations Centers from a systems and connectivity perspective, as well as geography.
- All NOC systems are supported by secondary power supplies, both UPS and generator.
- All NOC technicians are equipped with full remote secure logins and voice capability for remote access in all regions to perform their duties and responsibilities.
- Each region maintains maintenance spares depot for all core equipment technology hardware deployed within the network and region. Lessens our dependency on the manufacturer and decreases MTTR (mean time to repair).
- Operations team has a clear escalation and call-out policy and plan that is updated and reviewed weekly to determine coverage and back-up requirements.
- Emergency call-out agreements with retainer fees are established with prime vendors in all regions for support of the physical plant. This includes spare components and fiber cable to handle any network impact.
- All network equipment configurations are backed up and archived to facilitate immediate restoration in the event of network element failure.
- Establish a crisis conference bridge for all updates and information sharing during any event.

Legal / Insurance Clarifications, Exceptions

With respect to #20, #21, and #22, Respondent currently provides 1Gbps and 10Gbps Ethernet services for NHPS. Accordingly, Respondent proposes to provide the services set forth in this bid submission subject to and in accordance with the existing agreement between Respondent and NHPS.

Insurance exceptions

pg.5

7. insurance requirements

-third paragraph – all required policies will provide a waiver of subrogation. We cannot agree to do this for all of our policies. We have a very robust program and some insurance are not applicable to this relationship

-fourth paragraph – we cannot add the city as an “additional named insured”. We will add them as an additional insured on the general liability, auto, umbrella, and cyber policy per the checklist on pg. 16

In Reference to: PLEASE NOTE THAT ALL CERTIFICATES OF INSURANCE MUST INCLUDE:

- (1) - We will add City as an additional insured on the general liability, auto, umbrella
- (2) - endorsements are blanket and will apply per written agreement.
- (3) – 30 days’ notice of cancellation except for non-payment of premium is the available notice from our insurers.

Policy Review and Approval

We can make our policies available for review at an agreeable location. We will not release copies of our policies.

pg. 16 template

the top paragraph states that all policies except workers compensation shall provide additional insured on a primary and non-contributory basis. This conflicts with check list. In the checklist, there is no requirement for additional insured/primary and non-contributory for the professional policy. Similarly, the top section requires waiver of subrogation for all required policies but there is no requirement in the checklist for professional liability or cyber liability. The cyber and professional liability policies are not primary and non-contributory. This is industry standard, they respond to fault. At this time, we only agree to provide the coverages outlined in the checklist provided and will have this section take precedence over the top paragraph.

Third paragraph – renewal certificates will be available 5 business days before expiration. This is standard for a company of our size. 30 days’ notice of cancellation except for non-payment of premium is the available notice from our insurers.

Response Highlights

HIGHLIGHT	YES/NO	COMMENTS
100% Owned Fiber	YES	All fiber spans/routes included in the Crown Castle response are owned and maintained by Crown Castle.
Dedicated Project Team	YES	Crown Castle will provide a dedicated Project Management team that will assist the City of New Haven/NHPS from start to completion, providing timely updates throughout the deployment of the Network.
Implemented Networks of Similar Scope	YES	Crown Castle has deployed and is currently managing several large enterprise customers of similar size and scope.
Competitive Advantages	YES	<ul style="list-style-type: none"> • Crown Castle has extensive expertise and is solely focused on designing and deploying large, complex data networks for commercial corporations across all verticals, and other network providers. • Crown Castle designs networks for optimal latency measurements. • Crown Castle operates its own fiber plant and is not reliant on other network providers. We design our networks without reliance on carrier Central Offices. • Crown Castle core competency is building fiber into customer locations to create a complete design for the managed service. • Crown Castle will provide an experienced implementation team and 7x24x365 post cutover NOC support.

Attachments

- A. Crown Castle MTLA and Ethernet SLA [REFERENCE ONLY]
- B. Crown Castle Ethernet Products
- C. Crown Castle COI
- D. Crown Castle Tax Addendum
- E. Crown Castle Network Diagrams
- F. Crown Castle Pricing

Attachment

A. Crown Castle MTLA and Ethernet SLA [REFERENCE ONLY]



MASTER TELECOMMUNICATIONS LICENSE AGREEMENT

LICENSEE:	
Address:	
State of Organization:	

This **MASTER TELECOMMUNICATIONS LICENSE AGREEMENT** is effective as of the last date of execution below ("Effective Date") by and between **CROWN CASTLE FIBER LLC** ("Crown Castle" or "Company"), and Licensee (as named above). This Master Telecommunication License Agreement and any and all Supplements (as defined herein) and exhibits hereto are collectively referred to as the "Agreement". Crown Castle and Licensee are collectively referred to as the "Parties" or individually as a "Party".

1. PRODUCTS, ORDER FORMS, AND SUPPLEMENTS.

1.1 Products and Order Forms. This Agreement applies to each telecommunications facility, or product, provided or licensed by Crown Castle to Licensee (each a "Product"). Each Product will be specified in an order form executed by the Parties (each an "Order Form"). Purchase orders issued by Licensee shall not be deemed to amend, modify or supplement this Agreement or any Order Form issued hereunder and shall not be legally binding on Crown Castle unless otherwise agreed in writing by Crown Castle.

1.2 Supplements. From time to time, the Parties may execute one or more supplements to this Agreement that may contain technical specifications, service level objectives, and other terms and conditions applicable to specific types of Products (each a "Supplement"). Upon execution by the Parties, each such Supplement shall be incorporated into this Agreement. In the event Crown Castle and Licensee have not executed a Supplement or Service Level Agreement applicable to the type of product contemplated by an Order Form, then the product-specific portion of the then-current version of the "Crown Castle Terms and Conditions" available at <https://fiber.crowncastle.com/crown-castle-telecommunications-license-terms-and-conditions.pdf> ("Online Terms"), shall apply.

1.3 Crown Castle Affiliates. At Crown Castle's option, Products may be provided or licensed by Crown Castle, or by an Affiliate of Crown Castle. Any charges or other amounts received by the Crown Castle under this Agreement, to the extent attributable to Products provided or licensed by an Affiliate of Crown Castle, shall be received by Crown Castle in its capacity as an agent on behalf of such Affiliate. Internet access will be provided by Crown Castle's affiliate, Crown Castle Fiber Enterprise LLC. In addition, Order Forms may be executed by an Affiliate of Crown Castle, and in such event, any and all references to "Crown Castle" herein shall be deemed to be a reference to the applicable Affiliate of Crown Castle that executed such Order Form. The term "Affiliate" as used hereunder shall mean, with respect to either Party, any entity controlled by, in control of, or under common control with such Party.

2. TERM.

2.1 Agreement Term. The term of this Agreement commences on the Effective Date, and continues through the later of (i) five (5) years from Effective Date, or (ii) latest expiration of active Order Forms, unless earlier terminated as provided herein. This Agreement is a set of general terms and conditions, and does not obligate either Party to provide or pay for any Product other than as reflected in a particular Order Form executed by the Parties.

2.2 Product Term. The term (each a "Product Term") for each Product begins on the Acceptance Date (as defined below) applicable to such Product, and remains in effect until the expiration of the initial Product Term specified in the applicable Order Form unless earlier terminated as provided herein. The Product Term shall automatically extend for consecutive one-year renewal terms, unless either Party notifies the other of its intent not to renew at least ninety (90) days prior to the expiration of the then-current initial or renewal Product Term.

2.3 Acceptance Date. The "Acceptance Date" for each Product shall be the earliest of (a) the date on which Licensee delivers written notice of acceptance, (b) the date on which Licensee begins to use the Product, other than for testing purposes, or (c) the second (2nd) business day following Crown Castle's delivery of notice of the installation of the Product (such notice, a "Connection Notice"), unless Licensee notifies Crown Castle in writing within said two-day period of a Defect in the Product, specifying in detail the nature of such Defect. A "Defect" exists if the Product fails to perform materially in accordance with its technical specifications as set forth in the applicable Supplement ("Specifications"). Upon receipt of notice of a Defect, Crown Castle and Licensee shall work cooperatively to promptly remedy such Defect, and Crown Castle shall deliver another Connection Notice, whereupon the process described in the first sentence of this Section shall apply again. If the Acceptance Date is delayed as a result of any failure, act or omission of Licensee, Crown Castle will give Licensee written notice to cure such failure within five (5) calendar days. If Licensee fails to cure within such period, the Acceptance Date will be deemed to be the end of such five (5) calendar-day period.

3. PAYMENT TERMS.

3.1 Charges. Crown Castle will invoice Licensee for any non-recurring charge (“NRC”) associated with the Product upon or after execution of the applicable Order Form. The monthly-recurring charge (“MRC”) associated with the Product shall begin to accrue on the Acceptance Date of such Product. Crown Castle will invoice Licensee the MRC associated with the Product in advance, except Crown Castle will invoice Licensee usage based charges (if any) associated with the Product in arrears. An MRC for a partial month will be pro-rated. Licensee shall be responsible for payment of the MRC for the entire Product Term specified in the applicable Order Form.

3.2 Payments; Late Payments. Licensee shall pay each invoice within thirty (30) days of the date of the invoice (the “Due Date”), without setoff or deduction. In the event Licensee fails to make any payment by the Due Date, Licensee shall pay a late charge on all past due amounts at the rate of one and one-half percent (1.5%) per month, compounded monthly (or, if lower, the maximum rate allowed by law). Further, Crown Castle shall be entitled to recover from Licensee all collection costs, including attorney fees.

3.3 Disputed Payments. Licensee may in good faith dispute charges set forth in an invoice, provided Licensee notifies Crown Castle of such dispute in writing no later than sixty (60) days after the date of the invoice. Failure of Licensee to so notify Crown Castle of any dispute shall constitute a waiver by Licensee of any dispute. In the event Licensee so disputes any amount in good faith, Licensee must submit a documented claim in writing for the disputed amount and pay the undisputed amounts in accordance with Section 3.2. Licensee shall submit all documentation as may reasonably be required to support the claim. If the dispute is resolved in favor of Licensee and Licensee previously paid the disputed amount to Crown Castle, Crown Castle will apply a credit to Licensee’s account in the amount of the dispute. If the dispute is resolved in Crown Castle’s favor and Licensee has withheld the disputed amount, Licensee must pay the disputed amount (together with the late payment charge pursuant to Section 3.2) within five (5) business days following notice of the resolution of the dispute.

4. TAXES AND FEES.

4.1 Taxes and Fees. All charges set forth in an Order Form(s) are exclusive of, and Licensee shall be responsible for and agrees to pay, any and all applicable international, federal, state and local use, excise, sales, value added, consumption, gross receipts, access, franchise and other taxes, fees, assessments, duties and surcharges (including, without limitation, any universal service fund surcharge) levied or imposed upon Crown Castle or Licensee in connection with the provision, sale or use of the Product or facility furnished to Licensee and which Crown Castle is required or permitted to collect from Licensee (collectively referred to as “Taxes”). Licensee shall not be responsible for, and Taxes will not include, taxes on Crown Castle’s net income. If Licensee believes it is exempt from Taxes, Licensee shall provide Crown Castle with a valid and duly executed exemption certificate and any other information with respect to such exemption as Crown Castle may require; such certificate will be honored from the date that Crown Castle receives such certificate and additional information from Licensee. If any such exemption is ruled invalid by the tax or governmental authority for any reason, Licensee shall reimburse Crown Castle for any Taxes, including without limitation any penalties and interest, arising from or in connection with such invalid claim of exemption.

4.2 REIT Status. Licensee acknowledges that: (i) Crown Castle is directly or indirectly owned in whole or in part by an entity (“REIT Owner”) that qualifies as a “real estate investment trust” (“REIT”) under Sections 856 through 860 of the Internal Revenue Code of 1986, as amended (the “Code”); and (ii) Crown Castle and REIT Owner are therefore subject to operating and other restrictions under the Code. The Parties intend that this Agreement shall constitute a lease of the Products for purposes of Section 856 of the Code, and the Parties shall not take any position on any tax return inconsistent therewith except as required by law.

5. CROWN CASTLE EQUIPMENT AND NETWORK; LICENSEE EQUIPMENT.

5.1 Crown Castle Equipment; Crown Castle Network. The telecommunications devices, apparatus and associated equipment owned, leased, or otherwise obtained by Crown Castle to provide Products (“Crown Castle Equipment”) and Crown Castle’s fiber optic cable network and associated optical/electronic equipment used to deliver Products, whether owned, leased or otherwise obtained by Crown Castle (the “Crown Castle Network”) shall remain the sole and exclusive property of Crown Castle notwithstanding that it may be or become attached or affixed to real property, and nothing contained herein or in any Order Form grants or conveys to Licensee any right, title or interest in any Crown Castle Equipment or the Crown Castle Network. Licensee may not, and may not permit others to, alter, adjust, encumber, tamper, repair, rearrange, change, remove, relocate, or damage any Crown Castle Equipment or the Crown Castle Network without the prior written consent of Crown Castle. Licensee may not cause any liens to be placed on any Crown Castle Equipment or the Crown Castle Network, and will cause any such liens to be removed within ten (10) days of Licensee’s knowledge thereof. Licensee shall be liable to Crown Castle for any loss or damage to the Crown Castle Equipment or Crown Castle Network caused by Licensee or Licensee’s employees, contractors, agents or end users. Nothing herein shall prevent Crown Castle from using the Crown Castle Network and Crown Castle Equipment to provide products to other customers.

5.2 Extension of Network. To the extent an Order Form requires Crown Castle to complete construction, extend the Crown Castle Network and/or obtain additional Underlying Rights, Licensee shall use commercially reasonable efforts to assist Crown Castle in obtaining such Underlying Rights as necessary to provide the Product. Crown Castle may, without liability to either Party, terminate a Product prior to delivery, if Crown Castle encounters unexpected construction costs, or unavailability of or excess costs for Underlying Rights, that make the construction economically or legally unfeasible. Following the Acceptance Date of the Product, in the event that Crown Castle is unable to maintain any necessary Underlying Rights without incurring additional costs, unless Licensee bears the costs of obtaining such Underlying Rights, Crown Castle may cancel the applicable Order Form and shall incur no liability to Licensee hereunder. Without limiting the foregoing, Crown Castle shall not be deemed to be in breach of this Agreement for its failure to meet any anticipated Product installation or delivery date if such failure is caused, in whole or in part, by (i) a Force Majeure Event, (ii) failure to obtain, or delay in obtaining, any required Underlying

Rights, (iii) construction delays, or (iv) any other circumstances beyond the control of Crown Castle. “Underlying Rights” means any and all agreements, licenses, conduit use agreements, pole attachment agreements, leases, easements, rights-of-way, franchises, permits, governmental and regulatory approvals and authorizations, and other rights, consents, and approvals that are necessary to construct, install, maintain, operate, and repair the Crown Castle Network and/or for Crown Castle to provide a Product other than building access rights described in Section 7.1. Without limiting the foregoing, Underlying Rights include agreements for Off-Net Products that are necessary for Crown Castle to provide a Product. “Off-Net Products” shall mean any products provided by a third-party. “On-Net Products” shall mean Products that use transmission and related facilities owned and controlled by Crown Castle.

5.3 Licensee Equipment. Licensee shall, at its own expense, procure any equipment necessary to implement or receive each Product (“Licensee Equipment”). Crown Castle will have no obligation to install, maintain, or repair Licensee Equipment. Promptly upon notice from Crown Castle, Licensee shall eliminate any hazard, interference or Product obstruction that any such Licensee Equipment is causing or may cause as reasonably determined by Crown Castle.

6. MAINTENANCE.

6.1 Scheduled Maintenance. Crown Castle will endeavor to conduct (or cause to be conducted) scheduled maintenance that is reasonably expected to interrupt the Product between 12:00 midnight and 6:00 a.m. local time or, upon Licensee’s reasonable request, at a time mutually agreed to by Licensee and Crown Castle. Crown Castle will use commercially reasonable efforts to notify Licensee of scheduled maintenance that is reasonably expected to interrupt the Product via telephone or e-mail, no less than five (5) days prior to commencement of such maintenance activities. Licensee shall provide a list of Licensee contacts for maintenance and escalation purposes, which may be included on the Order Forms, and Licensee shall provide updated lists to Crown Castle, as necessary.

6.2 Emergency Maintenance. Crown Castle may perform emergency maintenance in its reasonable discretion, with or without prior notice to Licensee, to preserve the overall integrity of the Crown Castle Network. Crown Castle will notify Licensee as soon as reasonably practicable of any such emergency maintenance activity that materially and adversely impacts a Product.

6.3 Product Issues. Licensee may notify Crown Castle’s Network Operating Center (“NOC”) of Product problems by telephone 888-LT-FIBER, or at the contacts listed in Crown Castle’s Customer Support Information provided to Licensee, which may be updated by Crown Castle from time to time. If Crown Castle dispatches a field technician to Licensee or an end-user location and the problem is caused by (i) the Licensee Equipment or any end-user’s equipment or (ii) any acts or omissions of Licensee or its end user, or of any of its or their invitees, licensees, customers or contractors, Licensee will pay Crown Castle for any and all associated time and materials at Crown Castle’s then-standard rates.

7. IMPLEMENTATION REQUIREMENTS.

7.1 Access to Premises. Unless otherwise provided for in the applicable Order Form, Licensee, at its own expense, shall secure throughout the Product Term any easements, leases, licenses or other agreements necessary to allow Crown Castle to use pathways into and in each building at which Licensee’s or its end-user’s premises is located, to the Demarcation Point. Such access rights shall grant to Crown Castle the right to access such premises to the extent reasonably requested by Crown Castle to install, maintain, repair, replace and remove any and all equipment, cables or other devices Crown Castle deems necessary to provide the Product. Upon expiration or termination of the applicable Product Term, Licensee shall grant Crown Castle access to its premises as necessary to enable Crown Castle to remove the Crown Castle Equipment. Crown Castle, its employees, contractors and agents shall have access to any Crown Castle Equipment or facilities at a Licensee or end user premises. Notwithstanding anything to the contrary herein, Crown Castle shall have no liability for any delay or failure in its performance to the extent caused by any delay or failure of Licensee (including, but not limited to, the failure to provide Crown Castle prompt access) and/or caused by any notice or access restrictions or requirements. “Demarcation Point” shall mean the network interface point where Crown Castle hands off the Product to Licensee. The Demarcation Point delineates where responsibility for the Parties’ respective networks, equipment and/or maintenance obligations begin and end. Licensee is responsible, at its sole cost and expense, for connecting to the Demarcation Point.

7.2 Space and Power. Licensee shall procure and make available to Crown Castle, at Licensee’s locations and at end user locations where a Product is provided or licensed, at Licensee’s sole cost and expense, adequate space, AC power and HVAC for Crown Castle Equipment.

7.3 Property Owner Not Liable. Neither Licensee nor any of Licensee’s end-users shall have any recourse against any property owner or property manager of any premises to which any Product is delivered and/or at which Crown Castle Network or Equipment is located, as a result of or in reliance upon this Agreement. Without limiting the foregoing, this provision shall not be construed to impose any liability on Crown Castle, nor shall Crown Castle have any liability, for or on behalf of such property owner or property manager.

8. DEFAULT & REMEDIES

8.1 Default By Licensee; Suspension. In the event (i) Licensee fails to timely and fully make any payment required hereunder, and such payment breach is not cured within five (5) days after written notice thereof, or (ii) Licensee breaches any other provision of this Agreement and such breach is not cured within thirty (30) days after receipt of written notice thereof, then Crown Castle may, at its sole option, either (a) terminate any and all Products, (b) suspend the affected Product to which the breach is related without further notice to Licensee, and/or (c) pursue any other remedies available to Crown Castle at law, or in equity.

8.2 Default By Crown Castle. Licensee may terminate a Product in the event Crown Castle breaches this Agreement with respect to such Product and such breach is not cured within thirty (30) days after Crown Castle's receipt of written notice thereof, provided that if a breach subject to this Section 8.2 cannot be cured within thirty (30) days, but is capable of being cured within a reasonable time thereafter, then Licensee may not terminate the Product if Crown Castle commences to cure within said thirty (30) days and thereafter diligently and continuously pursues such cure to completion, or Crown Castle provides Licensee reasonable assurance that the same breach to the same Product will not subsequently occur.

9. INSURANCE.

9.1 Insurance. Each Party shall procure and maintain the following insurance coverage:

- Commercial General and Umbrella Liability Insurance. Commercial general liability (CGL) and, if necessary, commercial umbrella insurance with a limit of not less than \$5,000,000 for each occurrence. CGL insurance shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal and advertising injury, and liability assumed under an insured contract. Each Party shall name the other Party as an additional insured to provide coverage for the additional insured on a primary and non-contributory basis. The coverage provided to the additional insured shall apply to the extent of the indemnification obligation identified in paragraphs 10.2.
- Workers Compensation Insurance. Workers compensation and employers liability insurance as required by the laws and regulations applicable to the employees who are engaged in the performance of any activities hereunder or under an Order Form.

9.2 Type and Proof of Insurance. The insurance coverage required by this Section 9 shall be obtained on an occurrence basis from carriers having a Best Rating Product rating of A- or better. Upon request, a Party will provide the other Party a certificate of insurance or other proof of such insurance.

10. LIMITATION OF LIABILITY; INDEMNIFICATION.

10.1. LIMITATION OF LIABILITY. NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY INDIRECT, CONSEQUENTIAL, SPECIAL, EXEMPLARY, INCIDENTAL, OR PUNITIVE DAMAGES, INCLUDING WITHOUT LIMITATION LOSS OF USE OR DATA, OR LOST BUSINESS, REVENUE, PROFITS OR GOODWILL, ARISING IN CONNECTION WITH THIS AGREEMENT OR ANY PRODUCT OR ANY ORDER FORM, EVEN IF THE PARTY KNEW OR SHOULD HAVE KNOWN OF THE POSSIBILITY OF SUCH DAMAGES.

CROWN CASTLE'S TOTAL LIABILITY TO LICENSEE IN CONNECTION WITH THIS AGREEMENT FOR ANY AND ALL CAUSES OF ACTION AND CLAIMS, INCLUDING WITHOUT LIMITATION, BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE, STRICT LIABILITY, MISREPRESENTATION AND OTHER TORTS, SHALL BE LIMITED TO THE LESSER OF: (A) PROVEN DIRECT DAMAGES OR (B) THE AGGREGATE AMOUNT OF PAYMENTS MADE BY LICENSEE TO CROWN CASTLE FOR THE AFFECTED PRODUCT DURING THE TWELVE (12) MONTH PERIOD IMMEDIATELY PRECEDING THE MONTH IN WHICH THE CIRCUMSTANCES GIVING RISE TO THE CLAIM OCCURRED. IN NO EVENT SHALL CROWN CASTLE BE LIABLE FOR ANY DAMAGES ARISING OUT OF THE ACTS OR OMISSIONS OF UNAFFILIATED THIRD PARTIES, INCLUDING UNDERLYING PRODUCT PROVIDERS, OR ANY THIRD-PARTY EQUIPMENT OR PRODUCTS NOT PROVIDED OR LICENSED BY CROWN CASTLE.

10.2. Indemnification. Except to the extent of the other Party's negligence or willful misconduct, each Party shall indemnify, defend, release, and hold harmless the other Party, its Affiliates, directors, members, officers, employees, managers, agents, representatives, and contractors (collectively, "Indemnitees") from and against any third-party action, claim, suit, judgment, damage, demand, loss, or penalty, and any cost or expense associated therewith (including but not limited to reasonable attorneys' fees, expert fees and costs) (collectively, "Claims") imposed upon such Indemnitee(s) by reason of damage to real or tangible personal property or for bodily injury, including death, as a result of any willful misconduct or negligent act or omission on the part of the indemnifying Party in connection with the performance of this Agreement. In addition to the foregoing, Licensee shall indemnify, defend, release, and hold harmless Crown Castle and its Indemnitees from and against any third-party Claims brought against such Crown Castle and its Indemnitees arising from or in connection with Licensee's (or its end users') unlawful use of a Product.

10.3. Indemnification Process. If a Party ("Indemnifying Party") is required to indemnify the other Party ("Indemnified Party") pursuant to Section 10.2, the Indemnified Party shall promptly notify the Indemnifying Party. The Indemnifying Party will be permitted to assume primary control of the defense of the action with counsel of the Indemnifying Party's choice. The Indemnified Party will cooperate in the defense of the action as requested by the Indemnifying Party. The Indemnified Party may, but shall not be required to, participate in the defense of the action with its own counsel, at its own expense. The Indemnifying Party will assume the cost of the defense on behalf of the Indemnified Party and its Affiliates (other than the expense of Indemnified Party's counsel pursuant to the immediately preceding sentence) and will pay all expenses and satisfy all judgments which may be incurred or rendered against the Indemnified Party or its Affiliates in connection therewith, provided that without the Indemnified Party's written consent, the Indemnifying Party shall not enter into or acquiesce to any settlement containing any admission of or stipulation to any guilt, fault, or wrongdoing on the part of the Indemnified Party, which would otherwise adversely affect the Indemnified Party, or which results in less than a full release of all claims.

11. REPRESENTATIONS AND WARRANTIES.

11.1 EXCEPT AS EXPRESSLY PROVIDED IN THIS AGREEMENT, CROWN CASTLE MAKES NO REPRESENTATIONS AND WARRANTIES UNDER THIS AGREEMENT, EITHER EXPRESS, IMPLIED OR STATUTORY, AND CROWN CASTLE HEREBY EXPRESSLY EXCLUDES AND DISCLAIMS ALL OTHER WARRANTIES, INCLUDING, WITHOUT LIMITATION, (i) NON-INFRINGEMENT, (ii) IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND (iii) PERFORMANCE OR INTEROPERABILITY OF THE PRODUCT WITH ANY LICENSEE OR END-USER EQUIPMENT. NO WARRANTY IS MADE OR PASSED ON WITH RESPECT TO ANY PRODUCTS OR SERVICES PROVIDED BY OR FURNISHED BY ANY THIRD PARTY.

11.2 Each Party 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 Agreement, (b) it will comply with all applicable federal, state and local laws, statutes, rules and regulations in connection with the provision and use of the Products (including but not limited to the FCC's "intermediate provider" requirements, 47 CFR § 64.2119, where applicable), and (c) this Agreement constitutes a legal, valid and binding obligation of such Party enforceable against such Party in accordance with its terms.

12. CONFIDENTIALITY; SERVICE MARKS; PUBLICITY.

12.1 Confidentiality. "Proprietary Information" means any information supplied by the disclosing Party, or its Affiliate, to a receiving Party, or its Affiliate, or obtained by the receiving Party, or its Affiliate, in the provision or receiving of a Product hereunder, in each instance relating to the disclosing Party, its Affiliates, and/or its customers which has been designated as confidential, proprietary or private or which, from the circumstances, in good faith should be treated as confidential. Proprietary Information shall not include any of the following: (i) information that has been, or is subsequently, made public by the disclosing Party through no wrongful act of the receiving Party; (ii) information that is independently developed by the receiving Party without using any Proprietary Information of the disclosing Party; and (iii) information that has been previously known by or disclosed to the receiving Party by a third party not bound by confidentiality restrictions. Pricing information exchanged in connection with this Agreement, or included in any Order Form hereunder, and the terms and conditions of this Agreement, are hereby designated as confidential without further obligation on the part of either Party to mark or designate it as such. Each Party shall maintain in strict confidence all Proprietary Information of the other. Neither Party shall disclose Proprietary Information to any third person, except a receiving Party shall be permitted, without the disclosing Party's prior written consent, to disclose Proprietary Information to its employees and Affiliates, financial, technical and professional advisors, representatives, contractors, subcontractors and consultants provided that the receiving Party has taken reasonable steps to ensure that such Proprietary Information is kept strictly confidential consistent with the confidentiality obligations hereunder. If a receiving Party is required by any governmental authority or by applicable law to disclose any Proprietary Information, then to the extent permitted by applicable law, such receiving Party shall provide the disclosing Party with written notice of such requirement as soon as possible and prior to such disclosure. Upon receipt of written notice of the requirement to disclose Proprietary Information, the disclosing Party, at its expense, may then either seek appropriate protective relief in advance of such requirement to prevent all or part of such disclosure or shall waive the receiving Party's compliance with the requirements of the foregoing sentence with respect to all or part of such Proprietary Information.

12.2 Service Marks, Trademarks and Publicity. Neither Party shall: (a) use the name, service mark, trademark, trade name, logo, or trade dress of the other Party; or (b) refer to the other Party in connection with any advertising, promotion, press release or publication, unless it obtains the other Party's prior written approval.

13. ASSIGNMENT. Neither Party will assign or transfer this Agreement or any license or Order Form hereunder without the other Party's prior written consent, such consent not to be unreasonably withheld. Any assignment made in violation of this requirement shall be void and invalid. Notwithstanding the foregoing, either Party may assign this Agreement without the other Party's consent to a person or entity (i) that controls, is controlled by or is under common control with the assigning Party, (ii) which purchases all or substantially all of its assets or equity, or (iii) resulting from any merger, consolidation or other reorganization involving such Party.

14. FORCE MAJEURE. Neither Party shall be liable, nor shall any credit or other remedy be extended, for any delay or failure to fulfill any obligation under this Agreement or any Order Forms due to any cause beyond a Party's reasonable control, including, but not limited to: acts of God, flood, extreme weather, fire, natural calamity, terrorism, any moratorium, law, order, regulation, action or inaction of any governmental entity or civil or military authority, power or utility failures, fiber or cable cuts caused by third parties, unavailability of rights-of-way, national emergencies, insurrection, riots, wars, strikes, lock-outs, work stoppages or other labor difficulties, pole hits, or material shortages (each a "Force Majeure Event").

15. NOTICES. Any request to terminate this Agreement, or any claim for breach thereof, shall be in writing and transmitted either via (i) overnight courier or hand delivery, or (ii) certified or registered mail, postage prepaid and return receipt requested, to the other Party at the following address. Notices shall be deemed delivered upon receipt.

Address for Licensee Notices:

Address for Crown Castle Notices:

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
Attention: Legal Department – Networks

A Party may change the address for notices by notice to the other Party provided pursuant to this Section 15. All other notices, requests, or communications may be transmitted by email as specified in the relevant invoice or Order Form, at <http://fiber.crowncastle.com/support>, or as otherwise directed by Crown Castle.

16. MISCELLANEOUS

16.1 Governing Law. This Agreement shall be governed by the laws of the State of Delaware without regard to its choice of law principles.

16.2 No Third-Party Beneficiaries. The covenants, undertakings, and agreements set forth in this Agreement are solely for the benefit of and enforceable by the Parties or their respective successors or permitted assigns. It is the explicit intention of the Parties hereto that no person or entity other than the Parties (and, with respect to the provisions of Section 10, the Indemnitees) is or shall be entitled to any legal rights under this Agreement.

16.3 Relationship of the Parties. The relationship between the Parties hereunder is not that of partners or agents for one another and nothing contained in this Agreement shall be deemed to constitute or create a partnership, joint venture or similar relationship. Nothing in this Agreement shall be construed to authorize either Party to represent the other Party for any purpose whatsoever without the prior written consent of such other Party.

16.4 Order of Precedence. If any conflict or contradiction exists between these general terms and conditions and a Supplement, the terms of a Supplement will control. If any conflict or contradiction exists between a Supplement and the terms of an Order Form, the terms of the Order Form will control. If any conflict or contradiction exists between these general terms and conditions and the terms of an Order Form, the terms of the Order Form will control.

16.5 Non-Exclusivity. This Agreement is non-exclusive. Both Parties may enter into similar arrangements with others, and Crown Castle may, as part of its normal business undertakings, actively market its products to any person or entity anywhere in the world, including but not limited to in competition with Licensee and/or Licensee's end users.

16.6 Non-Waiver. The waiver by any Party hereto of a breach or a default under any of the provisions of this Agreement, any Supplement or any Order Form, or the failure of any Party, on one or more occasions, to enforce any of the provisions of this Agreement or to exercise any right or privilege hereunder shall not thereafter be construed as a waiver of any subsequent breach or default of a similar nature, or as a waiver of any such provision, right or privilege hereunder.

16.7 Survival. The terms and provisions contained in this Agreement that by their nature and context are intended to survive the performance thereof by the Parties hereto shall so survive the completion of performance and termination or early termination of this Agreement, including, without limitation, provisions for indemnification, confidentiality, and the making of payments due hereunder.

16.8 Headings. Section and subsection headings contained in this Agreement are inserted for convenience of reference only, shall not be deemed to be a part of this Agreement for any purpose, and shall not in any way define or affect the meaning, construction or scope of any of the provisions hereof.

16.9 Severability; Void or Illegal Provisions. If any part of this Agreement, Supplement or an Order Form shall be determined to be invalid or unenforceable by a court of competent jurisdiction, said part shall be ineffective to the extent of such invalidity or unenforceability only, without in any way affecting the remaining parts of this Agreement or such Order Form. The remainder of this Agreement will continue in full force and effect insofar as it remains a workable instrument to accomplish the intent and purposes of the Parties. The Parties will replace the severed provision with a provision that reflects the initial intention of the Parties.

16.10 Entire Agreement; Amendment. This Agreement, including all Supplements, Order Forms, exhibits and addenda attached hereto is the entire agreement between the Parties with respect to the subject matter hereof and supersedes any and all prior negotiations, understandings and agreements, whether oral or written, with respect to such subject matter. This Agreement may be amended only by a written instrument executed by the Parties.

16.11 Counterparts. This Agreement may be executed in one or more counterparts, all of which taken together shall constitute one and the same instrument. The Parties agree that fully-executed electronic copies or facsimile copies of this Agreement and corresponding Order Forms are legally binding and shall act as originals for the purpose thereof.

16.12 Disconnection Notice Requirement. Licensee shall submit all requests for disconnection of Products in writing to Crown Castle. The effective date of any such disconnection will be the later of (i) thirty (30) days from Crown Castle's receipt of such disconnection request, or (ii) the date requested by Licensee in the disconnection request. Each disconnection request must specify the Licensee name and address, email address and telephone number of the person authorizing the disconnect, the circuit ID for the Product to which the disconnect request applies, the product type, and requested disconnection date. Upon termination of a Product, Crown Castle shall have the right (but not the obligation) to act on behalf of and as agent for Licensee to terminate all cross-connects relating to such Product, including cross-connects ordered by Licensee. Upon request Licensee shall confirm to the applicable supplier of the cross-connect(s) that Crown Castle is authorized to terminate such cross-connects on Licensee's behalf. Disconnections shall not affect Licensee's obligation to make payments as agreed in each Order Form.

The Parties have executed this Agreement as of the last date of execution below.

LICENSEE:

By: _____

Print Name: _____

Title: _____

Date: _____

CROWN CASTLE FIBER LLC

By: _____

Print Name: _____

Title: _____

Date: _____



ETHERNET SUPPLEMENT TO THE MASTER TELECOMMUNICATIONS LICENSE AGREEMENT LICENSEE: _____

This Ethernet Supplement (“Supplement”) is effective as of the last date of execution below (“Supplement Effective Date”) by and between **CROWN CASTLE FIBER LLC** (“Crown Castle”) and Licensee, and is hereby incorporated into and made a part of the **Master Telecommunications License Agreement** or Master Service Agreement between Licensee and Crown Castle (the “Agreement”). Unless otherwise defined herein, capitalized terms in this Supplement shall have the meanings given in the Agreement. Section and subsection headings contained in this Supplement are inserted for convenience of reference only, shall not be deemed to be a part of this Supplement for any purpose, and shall not in any way define or affect the meaning, construction or scope of any of the provisions hereof.

1. SCOPE OF SUPPLEMENT

This Supplement applies to Ethernet licensed to Licensee under an Order Form that specifies Ethernet. This Supplement shall not apply to other products, including dark fiber, wavelength, Internet, or colocation.

1.1 “Ethernet” or “Product” means a method of switched communication between or among two or more Locations using the Ethernet protocol defined by IEEE 802.3. Ethernet may be ordered and provisioned either as On-Net Products or Off-Net Products. Ethernet includes, without limitation, the following types of Products:

- (a) ***E-Line or Fixed Wireless E-Line (if fixed wireless technology is utilized)***: a port-based Product providing dedicated UNIs for point to point connections. E-Line supports a single EVC between two (2) UNIs.
- (b) ***Ethernet Virtual Private Line (EVPL) or Fixed Wireless Ethernet Virtual Private Line (EVPL) (if fixed wireless technology is utilized)***: a VLAN based Product providing multiplexed UNIs allowing multiple EVCs per UNI.
- (c) ***Ethernet LAN (E-LAN) or Fixed Wireless Ethernet LAN (E-LAN) (if fixed wireless technology is utilized)***: a VLAN based meshed Product providing many-to-many communication with dedicated or service-multiplexed UNIs. E-LAN supports transparent LAN and multipoint Layer 2 VPNs.
- (d) ***Metro-E Advanced Private Line or Fixed Wireless Metro-E Advanced Private Line (if fixed wireless technology is utilized)***: dedicated point-to-point switched Ethernet provided within a metro area over dedicated fiber transport and/or fixed wireless transport if fixed wireless technology is utilized.
- (e) ***ENNI (External Network to Network Interface)***: an interconnection point between the Crown Castle and Licensee Ethernet networks as defined in MEF Specification 26.

1.2 “Class of Service” or “CoS”: Crown Castle offers CoS with Ethernet. CoS enables Licensee to differentiate traffic by assigning Bandwidth with various classes of network priority designated by Licensee. If Licensee elects CoS, (i) Licensee’s traffic must be marked by Licensee in accordance with Crown Castle’s available classes of network priority, and (ii) Licensee traffic will be prioritized in accordance with the assigned network priority. If Licensee does not elect CoS, Licensee’s traffic will be treated with the default network priority level. Crown Castle offers the following classes of CoS ranging from highest to lowest in terms of network priority:

- Mission Critical
- Business Critical
- Business Priority
- Standard (Default class for all Ethernet)

1.3 **Protection Options.** Ethernet comes with various Protection Options, as described below.

Protection Option	Description	Minimum Location Requirements			
		Space	Power	Environmental Control	Back Up Power
Unprotected (Level A Access)					
1	Level A Access means the access portion of the Ethernet (i.e. the segments from the last Crown Castle Network switching hub (or for Metro-E Advanced Private Line or Fixed Wireless Metro-E Advanced Private Line Products - the lateral segments supporting the respective Product) to the point of entry of the Location) is provided over a single transmission path by fiber and/or fixed wireless without protection. Level A Access consists of the following minimum requirements at each Location: (i) a single point of entry into the Location; (ii) one (1) Crown Castle Equipment chassis; (iii) one (1) port; (iv) a 2-fiber handoff to the Licensee from the Crown Castle Equipment; and (v) one (1) Crown Castle fixed wireless receiver equipment chassis if fixed wireless technology is utilized by Crown Castle for the applicable Product.	(1)	(2)	(4)	Not applicable
Optical Protection (Level AA Access)					
2	Level AA Access means the access portion of the Ethernet (i.e. the segments from the last Crown Castle Network switching hub to the point of entry of the Location) is provided over two (2) separate transmission paths by fiber and/or fixed wireless, one of which is the working (primary) path and the other the protect (secondary) path. Crown Castle is responsible for managing the Failover Switching at each Location. Level AA Protection consists of the following minimum requirements at each Location: (i) a single point of entry into the Location; (ii) one (1) Crown Castle Equipment chassis; (iii) one (1) port; (iv) a 2-fiber handoff to the Licensee from the Crown Castle Equipment; and (v) one (1) Crown Castle fixed wireless receiver equipment chassis if fixed wireless technology is utilized by Crown Castle for the applicable Product.	(1)	(2)	(4)	(6)
Dual Path Protection (Level AAA)					
3	Level AAA Access means the access portion of the Ethernet (i.e. the segments from the last Crown Castle Network switching hub to the point of entry of the Location) is provided over two (2) separate transmission paths by fiber and/or fixed wireless, one of which is the working (primary) path and the other the protect (secondary) path. Failover Switching at each Location will be provided by Licensee or by Crown Castle as specified in the Order Form. Level AAA Protection consist of the following minimum requirements at each Location: (i) two (2) separate points of entry into the Location; (ii) two (2) Crown Castle Equipment chassis; (iii) one (1) line card per chassis; (iv) 4-fiber handoff to the Licensee from the Crown Castle Equipment, with two fibers handed off from one of the Crown Castle Equipment chassis and two fibers handed off from the other Crown Castle Equipment chassis; (v) Licensee Equipment must have hardware redundancy (i.e., separate cards, one for one of the 2-fiber handoffs and the other for the second 2-fiber handoff); and (vi) two (2) Crown Castle fixed wireless receiver equipment chassis if fixed wireless technology is utilized by Crown Castle for the applicable Product.	(1)	(3)	(5)	(7)

(1) Secure space for Crown Castle Equipment at each Location with 24x7x365 access.

(2) Dedicated electrical circuit for Crown Castle Equipment (i.e. the circuit has no other load from the Crown Castle Equipment to a circuit breaker) at each Location from the public utility.

(3) Redundant, dedicated electrical circuit at each Location from the public utility (i.e. each power circuit is fed from a different circuit breaker panel and has its own circuit breaker).

(4) For Crown Castle Equipment installed indoors - Substantially dust free with temperature control that maintains temperature between 50 and 80 degrees Fahrenheit and humidity control that maintains relative humidity below 80%.

(5) For Crown Castle Equipment installed indoors - Substantially dust free with temperature control that maintains temperature between 60 and 80 degrees Fahrenheit and humidity control that maintains relative humidity between 40% and 60%.

(6) Crown Castle (or Licensee if the Parties agree) to install and maintain a minimum of four (4) hours of standby power.

(7) Crown Castle (or Licensee if the Parties agree) to install and maintain a minimum of eight (8) hours of standby power and Licensee shall provide emergency power generation.

2. ADDITIONAL DEFINITIONS

“Bandwidth” or “BW” means the amount of data (quantified as “Mbps” or “Gbps”) made available to Licensee.

“Ethernet Virtual Connection” or “EVC” is a logical connection between two or more UNIs.

“Failover Switching” means the automatic restore and reroute of a Product to an alternate transmission path.

“Location” is an address wherein Crown Castle will hand off Ethernet to Licensee.

“Product Availability” means the percentage of minutes during a calendar month that the licensed Product has not incurred a Product Outage. Product Availability is calculated as follows: (43,200 - total number of minutes of Product Outage during the calendar month) divided by 43,200.

“Product Credit” means a credit that Licensee is eligible to receive if Crown Castle fails to meet the parameters set forth in Section 5.2 below.

“Product Outage” means a complete interruption of communications between any two (2) or more Locations.

“Product Performance Failure” means a failure of the Product to meet any performance parameters set forth in Section 5.2(B) through 5.2(D) below. Product Performance Failure is not a Product Outage.

“User Network Interface” or “UNI” means the interface used to interconnect Licensee to the Crown Castle Network which provides a reference point for demarcation between the Licensee’s network and the Crown Castle Network.

“Virtual Local Area Network” or “VLAN” means a data communication network, configured using the IEEE 802.1q standard that logically interconnects computers and network devices, allowing a group of hosts to communicate, regardless of Location, as if they were attached to the same physical media.

“VPN” means a virtual private network.

3. SPECIFICATIONS

3.1 The Specifications applicable to Ethernet are as follows:

Technical Specifications:

- IEEE 802.3

4. USE BY LICENSEE

4.1 **Interstate Traffic.** Licensee acknowledges that Crown Castle has no ability to determine whether the communications traffic carried via the licensed Ethernet is jurisdictionally interstate or intrastate. Licensee acknowledges and agrees that the communications traffic to be carried via the Crown Castle Network shall be treated as jurisdictionally interstate, pursuant to the Federal Communications Commission’s mixed-use “10% Rule” (47 CFR 36.154, 4 FCC Red. 1352), unless Licensee provides timely written certification on Crown Castle’s prescribed form that the traffic is jurisdictionally intrastate under the 10% Rule.

4.2 **Permitted Use.** Licensee may use the Ethernet for its own use. Licensee acknowledges that Crown Castle does not monitor the content of the Ethernet traffic unless required by law and Licensee shall be solely liable and responsible for the content of any communications transmitted via the Ethernet.

5. SERVICE LEVEL AGREEMENT

5.1 **Product Service Level.** Subject to this Section 5, in the event of a Product Outage to any licensed Ethernet or a Product Performance Failure, Licensee may be entitled to a Product Credit in accordance with the applicable Service Level Objective set

forth in Section 5.2 below. A Product Outage, or Product Performance Failure as the case may be, shall be deemed to begin upon the earlier of Crown Castle's actual knowledge of the same or Crown Castle's receipt of notice from Licensee of the same, and end when the Product is operational and in material conformance with the applicable Specifications. Notwithstanding anything to the contrary in this Supplement, the Agreement or any Order Form, in no event shall a Product Outage and/or Product Performance Failure and/or any other defect or failure in the Product be deemed to be or constitute a breach by Crown Castle of this Supplement, the Agreement or any Order Form.

5.2 Service Level Objectives.

A. Product Availability

If the total minutes of Product Outage in any month exceeds the number of minutes or hours set forth in the table below, Licensee shall be entitled to a Product Credit equal to the percentage of the applicable MRC set forth in the following table:

Quality Level		Product Availability Objective	Measurement Timeframe	Product Credit	
				Cumulative Duration of Product Outage(s)	% of MRC
On-Net - Level A Access					
1	Product Availability	99.9%	One Month	0 to 43.2 mins.	0%
				>43.2 mins. to 10 hrs.	5%
				>10 hrs. to 16 hrs.	10%
				>16 hrs. to 24 hrs.	20%
				>24 hrs. to 36hrs.	40%
				> 36 hrs.	50%
On-Net - Level AA Access					
2	Product Availability	99.99%	One Month	0 to 4.32 mins.	0%
				>4.32 mins. to 30 mins.	5%
				>30 mins. to 1 hr.	10%
				>1hrs. to 8 hrs.	20%
				>8 hrs. to 16 hrs.	30%
				>16 hrs. to 24 hrs.	40%
				>24 hrs.	50%
On-Net - Level AAA Access					
3	Product Availability	99.999%	One Month	0 to 43 secs.	0%
				> 43 secs. to 4 mins.	5%
				>4 mins. to 10 mins.	10%
				>10 mins. to 2 hrs.	20%
				>2 hrs. to 8 hrs.	40%
				>8 hrs.	50%

B. Network Latency

"Network Latency" is the average round-trip transmission time (in milliseconds) for packets to travel on the Crown Castle Network (including, but not limited to, link insertion delays, propagation delays and queuing delays in the Crown Castle Network). Network Latency is determined by Crown Castle by averaging sample measurements taken each calendar month between Crown Castle's designated points of presence.

If Network Latency in any month exceeds the number of milliseconds set forth in the table below and such failure is quality-impacting, Licensee shall be entitled to a Product Credit equal to the percentage of the applicable MRC set forth in the following table:

NETWORK LATENCY				
	CoS Designation - % of MRC			
Domestic US	Standard	Business Priority	Business Critical	Mission Critical
>120ms	10%	20%	30%	50%

C. Frame Delivery Rate (Packet Delivery)

“Frame Delivery Rate” is the ratio of performance test frames successfully received from the Crown Castle Network relative to the number of performance test frames offered to the Crown Castle Network. Frame Delivery Rate is determined by Crown Castle by averaging sample measurements taken each calendar month between Crown Castle’s designated points of presence.

If Frame Delivery Rate in any month is less than the percentages set forth in the left column of the table below and such failure is quality-impacting, Licensee shall be entitled to a Product Credit equal to the percentage of the applicable MRC set forth in the following table:

FRAME DELIVERY RATE				
	CoS Designation - % of MRC			
Domestic US	Standard	Business Priority	Business Critical	Mission Critical
99.999% or greater	No Credit	No Credit	No Credit	No Credit
99.99% to 99.998%	No Credit	No Credit	No Credit	10%
99.9% to 99.98%	No Credit	No Credit	10%	20%
99% to 99.8%	No Credit	10%	20%	30%
Less than 99%	10%	20%	30%	50%

D. Frame Delay Variation (Jitter)

“Frame Delay Variation”, also known as packet jitter, is a measurement of the average variation (measured in milliseconds) in the time delay for packet transfers between two performance test frames. Frame Delay Variation is determined by Crown Castle by averaging sample measurements taken each calendar month between designated points of presence.

If Frame Delay Variation in any month exceeds the number of milliseconds set forth in the table below and such failure is quality-impacting, Licensee shall be entitled to a Product Credit equal to the percentage of the applicable MRC set forth in the following table:

FRAME DELAY VARIATION				
	CoS Designation - % of MRC			
Domestic US	Standard	Business Priority	Business Critical	Mission Critical
2ms or less	No Credit	No Credit	No Credit	No Credit
>2ms to 3ms	No Credit	No Credit	No Credit	10%
>3ms to 4ms	No Credit	10%	15%	30%
>4ms	10%	20%	30%	50%

5.3 Product Credits. Product Credits hereunder are calculated as a percentage of the MRC set forth in the Order Form, and may not be applied to usage charges, government fees, taxes, or surcharges, or any third party charges passed through to Licensee by Crown Castle. Product Credits hereunder may be paid only once per any given billing cycle. Product Credits issued to Licensee hereunder shall be Licensee’s sole and exclusive remedy at law or in equity on account of any Product Outage and/or Product Performance Failure and/or any other defect or failure in the Product. Product Credits will not be issued to Licensee if Licensee’s account with Crown Castle is in arrears. If an incident affects the performance of the Product and results in a period or periods of interruption, disruption, failure or degradation in quality, entitling Licensee to one or more credits under multiple quality level standards, only the single highest credit with respect to that incident will be applied, and Licensee shall not be entitled to credits under multiple quality level standards for the same incident. Notwithstanding anything to the contrary herein, the above-stated Product Credits shall not apply to Off-Net Products; in the event of a Product Outage or Product Performance Failure, Crown Castle agrees to pass through a credit equal to the credit received by Crown Castle from its underlying provider(s) for such Product Outage or Product Performance Failure, in lieu of the above-stated Product Credits. In no event shall Product Credits in any month for any and all interruptions, disruptions, failures, and/or degradations in quality (including, without limitation, any Product Outage or Product Performance Failure) exceed fifty percent (50%) of the MRC for the affected Product for that month.

5.4 Product Credit Request. Licensee must submit a written request to claim a Product Credit no later than thirty (30) days following the event which gives rise to Licensee’s right to the Product Credit. Failure to request a Product Credit within such period shall constitute a waiver of any claim for a Product Credit.

5.5 Events Excepted From Product Credit. Notwithstanding the foregoing, Licensee shall not receive any Product Credit for any Product Outage, Product Performance Failure, failure to meet any objectives or parameters hereunder, or delay in performing repairs, arising from or caused, in whole or in part, by any of the following events:

- a. Licensee's (including its agents, contractors and vendors) acts or omissions;
- b. Failure on the part of Licensee Equipment, end user equipment or Licensee's vendor's equipment;
- c. Failure of electrical power not provided by Crown Castle;
- d. Election by Licensee, after requested by Crown Castle, not to release the Product for testing and repair;
- e. Crown Castle's inability to obtain access required to remedy a defect;
- f. Scheduled maintenance periods;
- g. Scheduled upgrade of Product at the request of Licensee;
- h. Force Majeure Event;
- i. Unavailability of spectrum not due to the fault or negligence of Crown Castle when fixed wireless is utilized in the provisioning of the Product;
- j. Disconnection or suspension of the Product by Crown Castle pursuant to a right provided under this Agreement; and/or
- k. Crown Castle's inability to repair due to utility safety restrictions.

The Parties have executed this Supplement as of the last date of execution below.

LICENSEE:

CROWN CASTLE FIBER LLC:

By: _____

By: _____

Print Name: _____

Print Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

Attachment

B. Crown Castle Ethernet Products

Metro-E Advanced Private Line

Demand for high-performance, reliable and cost-efficient connectivity is higher than ever—and for businesses with multiple locations within a metro market the needs are no different. Our Metro-E Advanced Private Line (MAPL) solution provides a fully managed, fiber-based, dedicated connection that you can rely on.

With Ethernet switches deployed at your premises and managed by us, MAPL uses point-to-point Ethernet Virtual Circuits (EVC) over dedicated fiber to deliver service within a metro market. From implementation to ongoing operations, we manage the service and equipment—giving you peace of mind, significantly lowering capital expenses, and reducing risk for your organization.

Key Benefits

Privacy

We provide private Ethernet point-to-point connectivity directly between your locations with no shared transport elements (such as repeaters) avoiding potential network congestion and creating a truly private connection.

Security

On premises switches and dedicated fiber connectivity provide a high level of security.

Expertise

With more than 25 years of experience in building and maintaining fiber networks, we design and deliver turn-key Ethernet solutions with you in mind. And since we install the switches on your premises, turn up is seamless for you.

Service

We have locally based service teams who are available to you whenever you need them, and with our around-the-clock Network Operations Center, you can be sure your network is always in good hands.

More than
25 Years
of Expertise

NYSE
S&P 500

Our Solutions

- › Towers
- › Small cells
- › Dark Fiber
- › Ethernet
- › Wavelength
- › Managed SD-WAN
- › Internet Access
- › **Private Networks**
- › Colocation
- › Cloud Connect
- › Optical Encryption
- › DDoS Defense
- › Cyber Defense One
- › Bandwidth on Demand
- › Fixed Wireless
- › Ultra-Low Latency
- › Video Transport

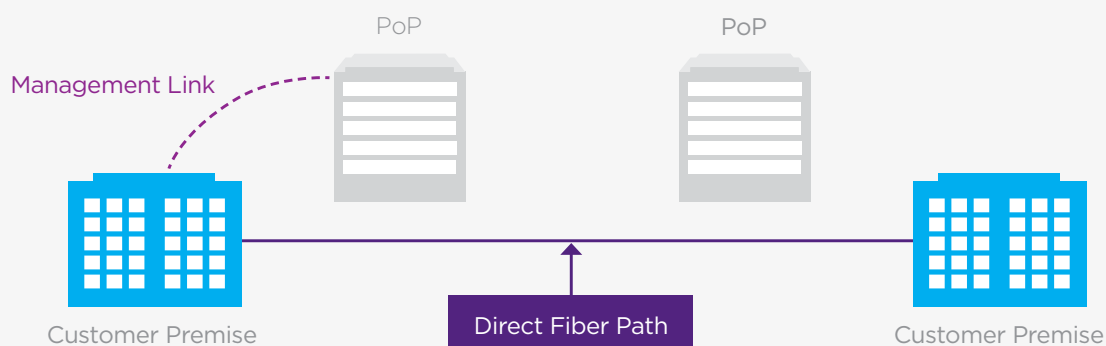
Key Features

- Supports capacity options from 1Gbps to 10Gbps
- Provides secure, private Ethernet connectivity between customer locations
- Direct fiber path provides consistent, low latency performance for delay sensitive applications
- Our dense metro fiber footprint gives you more diverse paths and unique routes
- Our Ethernet product portfolio is backed by strong Service Level Agreements (SLA)

Technical Specifications

SPECIFICATION	DESCRIPTION
Technology	Layer 2 Ethernet over private fiber
Throughput	1Gbps to 10Gbps
Interface	1GE or 10GE
Framing	Jumbo frames to 9100 bytes
Network Management	24/7 monitoring and surveillance
Network Options	Metro configurations
Availability	Most on-net locations throughout our network
Topology	Point-to-point

Metro-E Advanced Private Line



Crown Castle owns, operates and leases more than 40,000 cell towers and approximately 85,000 route miles of fiber supporting small cells and fiber solutions across every major US market. This nationwide portfolio of communications infrastructure connects cities and communities to essential data, technology and wireless service—bringing information, ideas and innovations to the people and businesses that need them.

Attachment

C. Crown Castle COI



CERTIFICATE OF LIABILITY INSURANCE

Page 1 of 2

DATE (MM/DD/YYYY)
01/19/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Willis Towers Watson Northeast, Inc. c/o 26 Century Blvd P.O. Box 305191 Nashville, TN 372305191 USA	CONTACT NAME: Crown Castle Inc. PHONE (A/C, No. Ext): FAX (A/C, No): E-MAIL ADDRESS: COIRequest@crowncastle.com														
INSURED Crown Castle Inc. f/k/a Crown Castle International Corp. See Attached Named Insured List 8020 Katy Freeway Houston, TX 77024	<table><tr><th>INSURER(S) AFFORDING COVERAGE</th><th>NAIC #</th></tr><tr><td>INSURER A: Continental Casualty Company</td><td>20443</td></tr><tr><td>INSURER B: Berkshire Hathaway Specialty Insurance Com</td><td>22276</td></tr><tr><td>INSURER C: Continental Insurance Company</td><td>35289</td></tr><tr><td>INSURER D: AIG Specialty Insurance Company</td><td>26883</td></tr><tr><td>INSURER E:</td><td></td></tr><tr><td>INSURER F:</td><td></td></tr></table>	INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A: Continental Casualty Company	20443	INSURER B: Berkshire Hathaway Specialty Insurance Com	22276	INSURER C: Continental Insurance Company	35289	INSURER D: AIG Specialty Insurance Company	26883	INSURER E:		INSURER F:	
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INSURER C: Continental Insurance Company	35289														
INSURER D: AIG Specialty Insurance Company	26883														
INSURER E:															
INSURER F:															

COVERAGES**CERTIFICATE NUMBER:** W27933382**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:	Y	Y	7018331477	04/01/2022	04/01/2023	EACH OCCURRENCE \$ 2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 4,000,000 PRODUCTS - COMP/OP AGG \$ 4,000,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY	Y	Y	BUA 7018331432	04/01/2022	04/01/2023	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 25,000	Y	Y	47-UMO-303445-08	04/01/2022	04/01/2023	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N No	N/A	WC7018331446	04/01/2022	04/01/2023	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
D	Professional Liability			01-818-14-13	11/30/2022	11/30/2023	Each Claim \$1,000,000 Policy Aggregate \$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

This Voids and Replaces Previously Issued Certificate Dated 01/19/2023 WITH ID: W27933247.

Re: 2023-01-1510.

SEE ATTACHED

CERTIFICATE HOLDER

City of New Haven 200 Orange Street Rm 301 New Haven, CT 06510	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE
--	--

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ACORD 25 (2016/03)

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SR ID: 23635477

BATCH: 2816806



ADDITIONAL REMARKS SCHEDULE

AGENCY Willis Towers Watson Northeast, Inc.		NAMED INSURED Crown Castle Inc. f/k/a Crown Castle International Corp. See Attached Named Insured List	
POLICY NUMBER See Page 1		8020 Katy Freeway Houston, TX 77024	
CARRIER See Page 1	NAIC CODE See Page 1	EFFECTIVE DATE: See Page 1	

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,

FORM NUMBER: 25 **FORM TITLE:** Certificate of Liability Insurance

City of New Haven is included as an Additional Insured under the General Liability, Automobile Liability, and Umbrella Liability as their interest may appear and as required by written agreement and only with respect to the liability arising out of the operations performed by or on behalf of the Named Insured.

City of New Haven is included as an Additional Insured as respects to Cyber Liability.

It is further agreed that such insurance as is afforded shall be Primary and Non-Contributory with any other insurance in force for or which may be purchased by Additional Insureds if agreed in written contract. Automobile Liability is Primary and Non-Contributory for owned autos. The Umbrella Liability policy shall be Primary and Non-Contributory with any other insurance in force for or which may be purchased by Additional Insureds if agreed in written contract.

General Liability include a Waiver of Subrogation in favor of the Additional Insureds when agreed in written contract prior to the loss, but always subject to the policy terms, conditions and exclusions as permitted by law.

Automobile Liability includes a Waiver of Subrogation in favor of the Additional Insureds, when agreed in written contract prior to the loss, but always subject to the policy terms, conditions and exclusions as permitted by law.

The Umbrella Liability policy include a Waiver of Subrogation in favor of the Additional Insured when agreed in written contract prior to the loss, but always subject to the policy terms, conditions and exclusions as permitted by law.

The Workers Compensation policies include a Waiver of Subrogation in favor of the Additional Insureds when agreed in written contract prior to the loss, but always subject to the policy terms, conditions and exclusions as permitted by law.

INSURER AFFORDING COVERAGE: AIG Specialty Insurance Company

NAIC#: 26883

POLICY NUMBER: 01-818-14-13 EFF DATE: 11/30/2022 EXP DATE: 11/30/2023

ADDITIONAL INSURED: Y

TYPE OF INSURANCE:	LIMIT DESCRIPTION:	LIMIT AMOUNT:
Cyber Liability/Tech E&O	Limit:	\$1,000,000

Named Insured	Named Insured (cont.)
AirComm of Avon, LLC	Crown Castle Solutions LLC
Assurable Insurance LLC	Crown Castle South LLC
Atlantic Coast Communications LLC	Crown Castle Towers 05 LLC
CC Edge LLC	Crown Castle Towers 06-2 LLC
CC Holdings GS V LLC	Crown Castle Towers 09 LLC
CC Site Acquisitions II LLC	Crown Castle Towers LLC
CC Strategic Investment Corp.	Crown Castle USA Inc.
CC TM PA LLC	Crown Communication LLC
CC Towers Guarantor LLC	Crown Communication New York, Inc.
CC Towers Holding LLC	Fibertech Facilities Corp.
CCATT Holdings LLC	Global Signal Acquisitions II LLC
CCATT LLC	Global Signal Acquisitions III LLC
CCATT PR LLC	Global Signal Acquisitions IV LLC
CCGS Holdings Corp.	Global Signal Acquisitions LLC
CCPR VI Tower Newco LLC	Global Signal GP LLC
CCS & E LLC	Global Signal Holdings III LLC
CCTM Holdings LLC	Global Signal Operating Partnership, LP
CCTM1 LLC	GoldenState Towers LLC
CCTM2 LLC	GS Savings Inc.
CCTMO LLC	GSPN Intangibles LLC
ComSite Venture, Inc.	High Point Management Co. LLC
Coverage Plus Antennas Systems LLC	ICB Towers LLC
Crown Atlantic Company LLC	Interstate Tower Communications LLC
Crown Castle AS LLC	Intracoastal City Towers LLC
Crown Castle Atlantic LLC	Light Tower Clearinghouse LLC
Crown Castle CA Corp.	Md7 Capitol One, LLC
Crown Castle Fiber Enterprise LLC	MW Cell Reit 1 LLC
Crown Castle Fiber Holdings Corp.	MW Cell TRS 1 LLC
Crown Castle Fiber LLC	OP LLC
Crown Castle GS III Corp.	OP 2 LLC
Crown Castle GT Company LLC	Pinnacle Towers Acquisition Holdings LLC
Crown Castle GT Corp.	Pinnacle Towers Acquisition LLC
Crown Castle GT Holding Sub LLC	Pinnacle Towers Asset Holding LLC
Crown Castle Inc. f/k/a Crown Castle International Corp	Pinnacle Towers Canada Inc.
Crown Castle International LLC	Pinnacle Towers III LLC
Crown Castle Investment Corp.	Pinnacle Towers Limited
Crown Castle Investment II Corp.	Pinnacle Towers LLC
Crown Castle MU LLC	Pinnacle Towers V Inc.
Crown Castle MUPA LLC	PR Site Development Corporation
Crown Castle NG East LLC	Radio Station WGLD LLC
Crown Castle Operating Company	Shaffer & Associates, Inc.
Crown Castle Operating LLC	Sidera Networks UK Limited (UK)
Crown Castle Orlando Corp.	Sierra Towers, Inc.
Crown Castle PR LLC	Tower Development Corporation
Crown Castle PR Solutions LLC	Tower Systems LLC
Crown Castle Puerto Rico Corp.	Tower Technology Company of Jacksonville LLC

Named Insured	Named Insured (cont.)
Tower Ventures III LLC	Fiber Technologies Networks, L.L.C. (NY)
TowerOne Partners, LLC	Fibernet Direct Florida LLC
TriStar Investors LLC	Fibernet Direct Holdings LLC
TVHT LLC	Fibernet Direct TEL LLC
WCP Wireless Lease Subsidiary, LLC	Fibernet Direct Texas LLC
WCP Wireless Site Funding LLC	Fibertech Holdings Corp.
WCP Wireless Site Holdco LLC	Fibertech Networks, LLC
WCP Wireless Site Non-RE Funding LLC	Freedom Telecommunications, LLC
WCP Wireless Site Non-RE Holdco LLC	Global Signal Services LLC
WCP Wireless Site RE Funding LLC	InfraSource FI, LLC
WCP Wireless Site RE Holdco LLC	InSITE Fiber of Virginia LLC
Merged Entities to Crown Castle Fiber LLC	InSITE Solutions LLC
24/7 Chesapeake Holdings, LLC	IX2 Center, LLC
24/7 Mid-Atlantic Network of Virginia, LLC	IX2 Wilshire, LLC
24/7 Mid-Atlantic Network, LLC	JBCM Towers LLC
Access Fiber Group Holdings LLC	Light Tower Fiber New York, Inc. (NY)
Access Fiber Group, Inc.	Light Tower Holdings LLC
CA - CLEC LLC	Light Tower Management, Inc.
CC Castle International LLC	Light Tower Metro Fiber LLC
CC Edge Solutions LLC	Lighttower Fiber Infrastructure Corp.
CC Finance LLC	Lighttower Fiber Networks I, LLC
CC FN Holdings LLC	Lighttower Fiber Networks II, LLC n/k/a Crown Castle Fiber LLC
CC Sunesys Fiber Networks LLC	LL Q1-18, LLC
CC TS LLC	LTS Buyer LLC
CCPE Acquisitions LLC	LTS Group Holdings LLC n/k/a Crown Castle Fiber Holdings Corp
CCT2 Holdings LLC	LTS Intermediate Holdings A LLC
Chesapeake Fiber, LLC	LTS Intermediate Holdings B LLC
Coastal Antennas LLC	LTS Intermediate Holdings C LLC
Cross Connect Solutions, Inc. (PA)	Mobile Media California LLC
Crown Castle Atlantic LLC	Mobile Media National LLC
Crown Castle Augusta LLC	Modeo LLC
Crown Castle BP ATT LLC	NEON Transcom, Inc.
Crown Castle International Corp. de Puerto Rico	NewPath Networks Holding LLC
Crown Castle MM Holding Corp.	NewPath Networks LLC
Crown Castle MM Holding LLC	NY - CLEC LLC
Crown Castle NG Atlantic LLC	P3 CHB-1, LLC
Crown Castle NG Central LLC	P3 Holdings 2014 LLC
Crown Castle NG Networks LLC	P3 OASA-1, LLC
Crown Castle NG West LLC	P3 PBA-1, LLC
Crown Castle PT Inc.	PA - CLEC LLC
Crown Castle Services LLC	Pinnacle San Antonio L.L.C.
Crown Castle TDC LLC	Pinnacle St. Louis LLC
Crown Castle TLA LLC	PR TDC Corporation
Crown Mobile Systems, Inc.	Princeton Ancillary Services II LLC
DAS Development Corporation	Princeton Ancillary Services III LLC

Named Insured	Named Insured (cont.)
RGP Tower Group, LLC	
Sidera Networks, Inc.	
Sunesys Enterprise LLC n/k/a Crown Castle Fiber Enterprise LLC	
Sunesys of Massachusetts, LLC	
Sunesys of Virginia, Inc.	
Sunesys, LLC	
Thunder Towers LLC	
TowerOne 2012, LLC	
TowerOne Allentown 001, LLC	
TowerOne Bethlehem 001, LLC	
TowerOne Doylestown, LLC	
TowerOne East Rockhill 001, LLC	
TowerOne Marple, LLC	
TowerOne Middletown 001, LLC	
TowerOne Middletown 002, LLC	
TowerOne Middletown 003, LLC	
TowerOne North Coventry, LLC	
TowerOne Richland, LLC	
TowerOne Upper Pottsgrove 002, LLC	
TowerOne Upper Pottsgrove, LLC	
TowerOne Warminster 001, LLC	
TowerOne Warrington 002, LLC	
Towers Finco II LLC	
Towers Finco III LLC	
Towers Finco LLC	
WA - CLEC LLC	
Wilcon Holdings LLC	
Wilcon Operations LLC	
Wilshire Connection, LLC	
Wilshire Services, LLC	
Wireless Funding, LLC	
Wireless Realty Holdings II, LLC	
Wireless Revenue Properties, LLC	
Yankee Metro Parent, Inc.	

Attachment

D. Crown Castle Tax Addendum

Tax Exceptions to RFP Terms and Conditions

Interstate Usage

Licensee acknowledges that Company has no ability to determine whether the communications traffic carried via the licensed Ethernet is jurisdictionally interstate or intrastate. Unless otherwise stated in the applicable Order Form, Licensee acknowledges and agrees that the communications traffic to be carried via the Company Network shall be treated as jurisdictionally interstate, pursuant to the Federal Communications Commission's mixed-use "10% Rule" (47 CFR 36.154, 4 FCC Rcd. 1352).

Order Form clarification

All charges set forth in an Order Form(s) are exclusive of, and Licensee shall be responsible for and agrees to pay, any and all applicable international, federal, state and local use, excise, sales, value added, consumption, gross receipts, access, franchise and other taxes, fees, assessments, duties and surcharges (including, without limitation, any universal service fund surcharge) in connection with the provision, sale or use of the Product or facility furnished to Licensee (collectively referred to as "Taxes"). Licensee shall not be responsible for, and Taxes will not include, taxes on Crown Castle's net income. If Licensee believes it is exempt from Taxes, Licensee shall provide Crown Castle with a valid and duly executed exemption certificate and any other information with respect to such exemption as Crown Castle may require; such certificate will be honored from the date that Crown Castle receives such certificate and additional information from Licensee. If any such exemption is ruled invalid by the tax or governmental authority for any reason, Licensee shall reimburse Crown Castle for any Taxes, including without limitation any penalties and interest, arising from or in connection with such invalid claim of exemption.

RFP Exceptions/Clarification

In addition to the agreed upon fees, the Customer shall pay all taxes imposed upon the provision of the services it purchases that are not subject to the Customer's exemption. Taxes are not incorporated within or included in any prices quoted in Crown Castle's proposal. If Crown Castle's proposal does quote taxes, any such tax quote is an estimate and is not fixed over the term of the agreement. To the extent additional taxes are imposed that do not provide an exemption to the Customer, current exemptions are lost, or there are taxes other than the current sales, use or excise taxes imposed upon the provision of the services to the Customer, such taxes will be passed through to the Customer. The Customer shall pay all taxes, surcharges and fees at the then current rate.



2022 ANNUAL CERTIFICATION FOR FEDERAL UNIVERSAL SERVICE FUND

Dear Customer:

Federal law requires each Crown Castle affiliate¹ (collectively, “Crown”) to pay Federal Universal Service Fund (“FUSF” or “Federal USF”) charges on interstate and international telecommunications services provided to you **UNLESS** your services qualify for an exclusion. Should you fail to return this Certification, Crown will assume that your services are assessable FUSF revenues.

Generally, telecommunication services are excluded from FUSF charges only if they are either

- (i) **resold** by you as telecommunications or Interconnected VoIP, at least in part, and you in turn pay FUSF charges on the services you provide to your customers, or
- (ii) if the service provided by Crown is **jurisdictionally intrastate**, which, for non-switched services, means that 10% or less of the traffic on the telecommunication circuits crosses state lines.

Customers claiming an exclusion from FUSF charges are required to certify the basis of the exclusion .

RESELLERS: If you **resell** the services provided by us **and** you are a FUSF filer and contributor, please complete and sign and return the **Reseller Certification**. This certification is required annually.

END USER: If you use our services for your own operational purposes (i.e., you do not resell these services as a carrier) and you have not previously completed an End User Certification, please complete, sign and return the **End User Certification**.

Crown Castle utilizes the service provider TTR to collect and administer its FUSF certificates as well as numerous state and local certificates. If you are providing your certificate via email, please email it to crown-castle-fiber-llc@ttrecms.com. If you have an account or billing question, please send an email to the Fiber Billing Help Desk at FiberBillingHD@crowncastle.com.

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Thank you for your cooperation. If you have any questions, please send an email to
FiberBillingHD@crowncastle.com

¹

Crown Castle Fiber LLC (formerly Lightower Fiber Network II, LLC) is a wholly-owned, indirect affiliate of Crown Castle International Corp.

The operations of 24/7 Mid-Atlantic Network, LLC; Crown Castle Solutions LLC; Fibernet Direct Florida LLC; Fibernet Direct Texas LLC; Freedom Telecommunications, LLC; Sunesys, LLC; Wilshire Connection, LLC; Lightower Fiber Networks I, LLC; and Fiber Technologies Networks, LLC, merged into Crown Castle Fiber LLC effective December 31, 2018.



2022 RESELLER CERTIFICATION

The undersigned is a Reseller of the Services purchased from Crown Castle.

Please check A or B:

A. _____ The service(s) we purchase and will purchase from Crown is for resale at least in part, and we incorporate the services that are or will be purchased into our own offerings which are, at least in part, assessable U.S. telecommunications or interconnected Voice over Internet Protocol service, and:

(a) We are an FCC Form 499 worksheet filer; and

(b) We contribute directly to the Federal USF; and/or

(c) Where we do not contribute to the FUSF, each entity to which we resell Crown's service is itself an FCC Form 499 worksheet filer and a contributor to the FUSF, or we have a reasonable expectation that another entity in the downstream chain of resellers directly contributes to the federal universal service support mechanisms on the assessable portion of revenue from offerings that incorporate the purchased services,

except with respect to the following Crown service orders (if any), which are **not** exempt from FUSF (attach additional sheets if necessary):

OR

B. _____ We are a 499 Filer; however, we do not directly contribute to the Federal USF. Services are subject to Federal USF Surcharges.

The undersigned understands and agrees that:

1. The Customer acknowledges that Crown Castle may provide a copy of this Certification to the Universal Service Administrator, the FCC, state regulatory authorities, legal counsel, or an auditor.

2. The Customer acknowledges that Crown Castle's determination of exemption will be based upon the information provided by the Customer in this Certification. In the event Crown Castle exempts the Customer from the payment of FUSF related charges (in whole or in part) based upon the information, representations and certifications contained in this Certification, and Crown Castle thereafter determines that the exemption was granted based upon the Customer's false, inaccurate, or erroneous information, then Crown Castle may bill the Customer, and the Customer will pay, the FUSF related charges that were not billed as the result of the exemption, plus applicable late fees. Accordingly, if the Customer does not provide accurate or timely information to Crown Castle, the Customer may be responsible for payment to both Crown Castle and the Universal Service Administrator for contribution to Universal Service support mechanisms. Furthermore, the Customer agrees to indemnify and hold harmless Crown Castle from any and all claims arising from any breaches of the information, representations or certifications made hereunder.



3. If, at any time, the Customer's information, representations or certifications made hereunder are no longer accurate, the Customer will notify Crown Castle within thirty (30) calendar days by completing and submitting a new Certification form or written request to cancel this Certification. Otherwise, this Certification will remain in effect during the year in its entirety. Customer understands and agrees that in the event Customer's representations or certifications made hereunder are no longer accurate and a new Certification form or cancellation of this Certification occurs within the calendar year of 2022, such changes will apply prospectively only and Crown Castle shall have no obligation to either retroactively charge or credit any FUSF fees that may be affected by such changes to this certification.

4. The individual named below is a representative of the Customer and is authorized to make the representations and certifications contained herein on behalf of the Customer.

I certify under penalty of perjury that my company is purchasing service(s) for resale, and that the company is incorporating the purchased services into its own offerings which are, at least in part, U.S. telecommunications or interconnected Voice over Internet Protocol services. I also certify under penalty of perjury that the company either directly contributes or has a reasonable expectation that another entity in the downstream chain of resellers directly contributes to the federal universal service support mechanisms on the assessable portion of revenues from offerings that incorporate the purchased services.

Full Name (printed):	
Title:	
Signature:	
Date:	
Customer Legal Name:	
Account Number (on Invoice):	
Customer FCC Form 499 Filer ID (required):	
Customer FCC Form 499 Certification Contact Name:	
Phone number of Contact person:	
Email address for FUSF certification requests:	

Return completed and signed form to:

Via email: crown-castle-fiber-llc@ttrecms.com

By mail: Crown Castle – Tax Department
2000 Corporate Drive
Canonsburg, PA 15317



END USER CERTIFICATION

The Federal Communications Commission (“FCC”) classifies non-switched services as interstate based upon the nature of the traffic over the non-switched service, rather than the physical endpoints of the facilities over which the service(s) is delivered. Internet traffic is considered interstate.

You are the End User of the Service—Please check A or B

A. _____ With respect to dedicated (non-switched) circuits we have purchased and will purchase from Crown, no more than 10% of the traffic carried by means of the non-switched service that is being purchased from Crown is jurisdictionally interstate, pursuant to the FCC’s mixed use rule (47 C.F.R. § 36.154(a)), except with respect to the following service orders (if any), which carry greater than 10% interstate traffic are thus interstate services that are not exempt from the Federal Universal Service Fund (“Federal USF” or “FUSF”) (attach additional sheets if necessary):

OR

Services are Subject to Federal USF Surcharge

B. _____ We do not meet the exemption set forth above.

The undersigned customer acknowledges and agrees that: (i) it has a duty to update this certification within thirty (30) days to the extent to that its usage changes and this Certificate is no longer accurate with respect to any Service(s); and (ii) Crown may provide a copy of this Certificate to the Universal Service Administrator, the FCC, state regulatory agencies and taxing authorities, legal counsel, or an auditor.

Customer acknowledges that Crown’s determination of jurisdiction of the Services will be based upon the information provided by Customer in this Certificate. If Crown determines that the jurisdiction has been established based upon Customer’s false, inaccurate, or erroneous information, then Crown may bill Customer, and Customer will pay, any applicable taxes, fees, and surcharges that were not billed based upon the prior determination of jurisdiction, plus applicable late fees. Customer agrees to indemnify and hold harmless Crown from any and all claims arising from any breaches of the certifications made hereunder.

Full Name (printed):	
Title:	
Signature:	
Date Executed:	
Customer Legal Name:	
Account Number (on Invoice):	
Customer Contact Name:	
Phone number Contact person:	
Email address for FUSF certification requests:	

Return completed and signed form to:

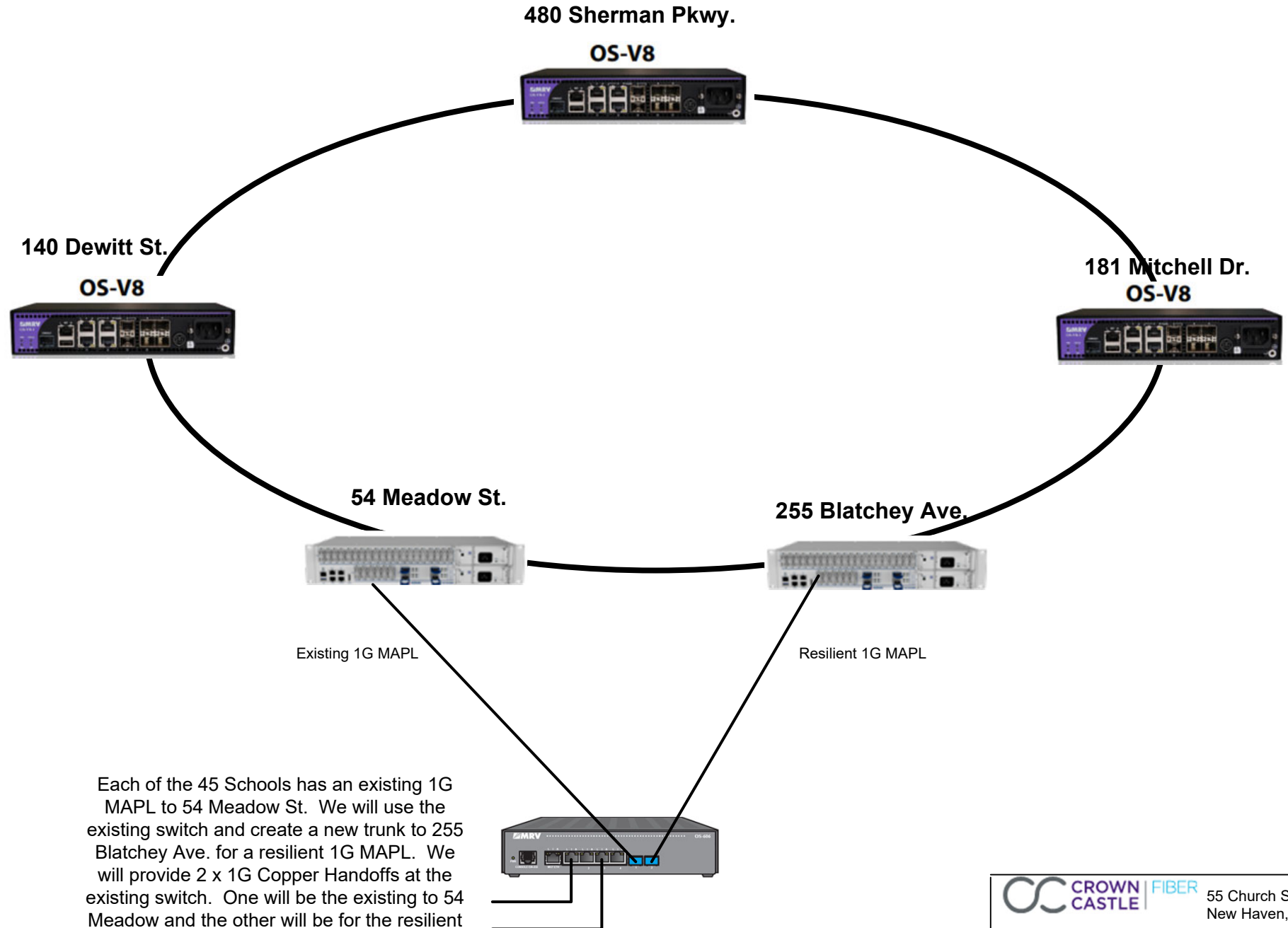
Via email: crown-castle-fiber-llc@ttrecms.com

By mail: Crown Castle – Tax Department
2000 Corporate Drive
Canonsburg, PA 15317

Attachment


E. Crown Castle Network Diagrams

New Haven Public Schools - RFP



CONFIDENTIAL

This diagram contains confidential and commercially sensitive information

 CROWN CASTLE FIBER 55 Church St. New Haven, CT	
Engineer: Ken Felton 585-743-1747	Date: 1/27/23
Subject: NHPS RFP 2023	Page 1 of 1

Attachment

F. Crown Castle Pricing

New Haven Public Schools-A9512									
Service Number	Status	Circuit ID	Service Type	Service Category	Service Speed	MRC	LOCA	LOCZ	A-B Number
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	69 Farnham Ave, 1st Floor, New Haven, CT 06515	*255 Blatchey Ave, 1st Floor, New Haven, CT 06513	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	495 Blake St, 1st Floor, New Haven, CT 06515	*255 Blatchey Ave, 1st Floor, New Haven, CT 06513	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	35 Davis St, 1st Floor, New Haven, CT 06515	*255 Blatchey Ave, 1st Floor, New Haven, CT 06514	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	100 Jewell St, 1st Floor, New Haven, CT 06515	*255 Blatchey Ave, 1st Floor, New Haven, CT 06515	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	737 Edgewood Ave, 1st Floor, New Haven, CT 06515	*255 Blatchey Ave, 1st Floor, New Haven, CT 06516	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	130 Orchard St, 1st Floor, New Haven, CT 06519	*255 Blatchey Ave, 1st Floor, New Haven, CT 06517	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	140 Legion Ave, 1st Floor, New Haven, CT 06519	*255 Blatchey Ave, 1st Floor, New Haven, CT 06518	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	580 Ella T Grasso Blvd, 1st Floor, New Haven, CT 06519	*255 Blatchey Ave, 1st Floor, New Haven, CT 06519	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	114 Truman St, 1st Floor, New Haven, CT 06519	*255 Blatchey Ave, 1st Floor, New Haven, CT 06520	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	103 Hallock Ave, 1st Floor, New Haven, CT 06519	*255 Blatchey Ave, 1st Floor, New Haven, CT 06521	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	60 S Water St, 1st Floor, New Haven, CT 06519	*255 Blatchey Ave, 1st Floor, New Haven, CT 06522	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	500 Boston Post Rd, 1st Floor, West Haven, CT 06516	*255 Blatchey Ave, 1st Floor, New Haven, CT 06523	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	480 Townsend Ave, 1st Floor, East Haven, CT 06512	*255 Blatchey Ave, 1st Floor, New Haven, CT 06524	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	15 Lexington Ave, 1st Floor, New Haven, CT 06513	*255 Blatchey Ave, 1st Floor, New Haven, CT 06525	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	460 Lexington Ave, 1st Floor, New Haven, CT 06513	*255 Blatchey Ave, 1st Floor, New Haven, CT 06526	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	375 Quinnpiac Ave, 1st Floor, New Haven, CT 06513	*255 Blatchey Ave, 1st Floor, New Haven, CT 06527	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	293 Clinton Ave, 1st Floor, New Haven, CT 06513	*255 Blatchey Ave, 1st Floor, New Haven, CT 06528	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	360 Columbus Ave, 1st Floor, New Haven, CT 06519	*255 Blatchey Ave, 1st Floor, New Haven, CT 06529	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	150 Kimberly Ave, 1st Floor, New Haven, CT 06519	*255 Blatchey Ave, 1st Floor, New Haven, CT 06530	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	569 Congress Ave, 1st Floor, New Haven, CT 06519	*255 Blatchey Ave, 1st Floor, New Haven, CT 06531	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	185 Goffe St, 1st Floor, New Haven, CT 06511	*255 Blatchey Ave, 1st Floor, New Haven, CT 06532	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	1481 Quinnpiac Avenue, New haven, CT 06513	*255 Blatchey Ave, 1st Floor, New Haven, CT 06533	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	311 Valley St, 1st Floor, New Haven, CT 06515	*255 Blatchey Ave, 1st Floor, New Haven, CT 06534	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	199 Wilmot Rd, 1st Floor, New Haven, CT 06515	*255 Blatchey Ave, 1st Floor, New Haven, CT 06535	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	200 Wilmot Rd, 1st Floor, New Haven, CT 06515	*255 Blatchey Ave, 1st Floor, New Haven, CT 06536	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	177 College St, 1st Floor, New Haven, CT 06510	*255 Blatchey Ave, 1st Floor, New Haven, CT 06537	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	130 Bassett St, 1st Floor, New Haven, CT 06511	*255 Blatchey Ave, 1st Floor, New Haven, CT 06538	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	400 Canner St, 1st Floor, New Haven, CT 06511	*255 Blatchey Ave, 1st Floor, New Haven, CT 06539	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	180 Canner St, 1st Floor, New Haven, CT 06511	*255 Blatchey Ave, 1st Floor, New Haven, CT 06541	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	175 Water St, 1st Floor, New Haven, CT 06511	*255 Blatchey Ave, 1st Floor, New Haven, CT 06542	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	191 Fountain St, 1st Floor, New Haven, CT 06515	*255 Blatchey Ave, 1st Floor, New Haven, CT 06543	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	21 Wooster Pl, 1st Floor, New Haven, CT 06511	*255 Blatchey Ave, 1st Floor, New Haven, CT 06544	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	511 Chapel St, 1st Floor, New Haven, CT 06511	*255 Blatchey Ave, 1st Floor, New Haven, CT 06545	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	444 Orange St, 1st Floor, New Haven, CT 06519	*255 Blatchey Ave, 1st Floor, New Haven, CT 06546	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	185 Barnes Ave, 1st Floor, New Haven, CT 06513	*255 Blatchey Ave, 1st Floor, New Haven, CT 06547	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	75 Barnes Ave, 1st Floor, New Haven, CT 06513	*255 Blatchey Ave, 1st Floor, New Haven, CT 06548	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	115 Water St, New Haven, CT 06513	*255 Blatchey Ave, 1st Floor, New Haven, CT 06549	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	133 Nash St, 1st Floor, New Haven, CT 06511	*255 Blatchey Ave, 1st Floor, New Haven, CT 06550	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	164 Grand Ave, 1st Floor, New Haven, CT 06513	*255 Blatchey Ave, 1st Floor, New Haven, CT 06551	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	100 James St, 1st Floor, New Haven, CT 06513	*255 Blatchey Ave, 1st Floor, New Haven, CT 06552	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	259 Edgewood Ave, 1st Floor, New Haven, CT 06511	*255 Blatchey Ave, 1st Floor, New Haven, CT 06553	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	55 Foote St, 1st Floor, New Haven, CT 06511	*255 Blatchey Ave, 1st Floor, New Haven, CT 06554	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	170 Derby Ave, 1st Floor, New Haven, CT 06511	*255 Blatchey Ave, 1st Floor, New Haven, CT 06555	A9512-B11987
*New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	150 Fournier St, 1st Floor, New Haven, CT 06511	*255 Blatchey Ave, 1st Floor, New Haven, CT 06556	A9512-B11987
New	Proposed		Metro-E Advanced Private Line	Ethernet	1Gbps	\$575.00	691 Whitney Avenue, 1st Floor, New Haven, CT 06511	*255 Blatchey Ave, 1st Floor, New Haven, CT 06557	A9512-B11988

\$25,875.

* Pricing has been formulated with NHPS selecting the full solution, all locations, on a 60month contract.