



REQUEST FOR PROPOSALS

Fiber Optic Network Construction

A project funded by Old Town – Orono Fiber Corporation and the Northern Border Regional Commission
Award # NBRC 15 G ME 00002

Old Town – Orono Fiber Corporation
59 Main Street
Orono, ME 04473

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1 Introduction

The Old Town - Orono Fiber Corporation (OTO Fiber) seeks proposals from qualified respondents to construct a fiber optic network in the communities of Orono and Old Town as discussed below. Respondents shall include in their response their approach and cost proposal for building the fiber optic network described in Section 4 and Exhibits B, C and D. It is expected that the selected respondent will operate as a General Contractor. The General Contractor shall be responsible for network construction and materials purchasing. A full enumeration of the General Contractor's responsibilities is contained herein.

Federal Participation Disclosure

This project will be partially funded with Federal funds from the Northern Border Regional Commission (NBRC), and therefore is subject to the Federal laws and regulations associated with that program, some of which are discussed in Section 5.

2 Background

OTO Fiber is a nonprofit 501(c)(3) corporation formed by three entities: the City of Old Town, the Town of Orono, and the University of Maine System, having its flagship campus located within these two municipalities. The corporate website can be found at www.OTOFiber.com. The three founding entities have joined with the goal of bringing open-access, high-speed, symmetric, fiber-based network connectivity to the communities, for economic growth, improved access to University resources, and improved entrepreneurial and innovation opportunities. The University of Maine System provides networking to schools and libraries across the State of Maine and provides multiple paths into and out of the State for research and education. Furthermore, the University is the largest concentration of computational resources and data storage in the State. These connections and resources, both computational and human, are expected to help make the proposed project successful.

The network infrastructure will be realized in a phased deployment, with the initial pilot (i.e., this project) being a backbone and build-out of a limited amount of coverage within each community. The network backbone will be designed and built such that full coverage of the commercial and developed residential areas of both communities can ultimately be served. The initial pilot deployment will be a gauge of take rates and the effect of gigabit or higher symmetric connectivity on economic development and initial success will fuel continued growth of the network.

About the Network

It is the objective of this project to build the first phase of OTO FiberNet, a network backbone of approximately three road-miles in each community, in a variety of neighborhoods, opportunistically picking up subscribers along or near the path. The network has been designed with the following characteristics:

- Entirely aerial on existing poles in the public right of way;
- Utilizes overlash construction as practical;
- Fiber Concentration Points (FCP) centrally located in each community;
- Generally, home-run fibers to the FCP;
- Network head-end to be co-located with Networkmaine's NOC in Neville Hall, Flagstaff Road, Orono, ME 04469;
- Pre-connectorized multiport service terminals used throughout;
- Scalable, with primary/core routes in each community and expansion neighborhoods to be quoted separately;
- OTO Fiber has completed the pole-application process and authorized make-ready.

OTO Fiber's Architect & Engineering firm, Tilson Technology Management, has completed a detailed engineering design of the network included in Exhibits B, C, and D.

3 General Information

RFP Contact Information

All questions and comments should be directed via email to Belle Ryder, President, OTO Fiber, at bryder@orono.org. Responses should be mailed to:

Belle Ryder
Town of Orono/OTO Fiber
59 Main Street
Orono, ME 04473

Notification of Intent to Respond

OTO Fiber requests that prospective bidders who intend to respond to notify OTO Fiber by the date noted in Section 3.6 of this RFP. Notifications should be sent via email to Belle Ryder at bryder@orono.org.

Questions and Inquiries

An optional pre-bid conference call will be held on the date noted. All prospective bidders who have notified OTO Fiber of their intent to respond will be provided with details on how to

participate no later than 3 days before the conference call. Please note that the mandatory deadline for notification of intent to respond is after the pre-bid conference. To accommodate bidders who have not yet responded, participation details will also be posted on OTOFiber.com no later than 3 days before the conference call.

Prospective respondents should email questions to the designated contact by the dates noted in the below table. Responses to questions that involve a change or interpretation to the RFP will be issued in writing and emailed to all parties that have expressed an intent to respond to the RFP. Only written responses to questions will be considered binding.

Materials submitted in response to this request become the property of the OTO Fiber and may become a part of any resulting contract. Respondents agree that they will bear all costs associated with responding to this RFP.

If any changes are made to this RFP, e-mail notification will be provided to all bidders who have notified OTO Fiber of their intent to bid.

Response Delivery

Please mail eight hard copies and one digital copy of the complete response, including all relevant attachments, to the designated contact in Section 3.1.

Schedule

Event	Date
RFP Released	Friday, February 01, 2019
Pre-Bid Meeting/Conference Call (Optional)	Monday, February 11, 2019
Questions due at 5 PM EST	Friday, February 15, 2019
Notification of Intent to Respond (Mandatory)	Friday, February 15, 2019
Responses to Questions Posted on OTOFiber.com	Friday, February 22, 2019
RFP Responses due by 5 PM EST	Friday, March 08, 2019
Award Announced (Estimated)	Friday, March 15, 2019

Evaluation Criteria

OTO Fiber seeks firms that:

- Can meet the project's timeline.
- Can demonstrate past performance and experience on similarly sized fiber builds.
- Are flexible and can efficiently work around the kinds of issues that often arise in construction projects.
- Are stable and well-capitalized enough to meet the insurance and bonding requirements mandated by the federal government.

Respondents shall describe in their responses to this RFP their project understanding and approach, experience building similar networks, regulatory plan, financial wherewithal, warranty, and firm, fixed price bid for constructing the full scope detailed herein. For bids consisting of teams of firms, one firm should identify itself as the General Contractor. The General Contractor shall be responsible for the scope of work detailed in this RFP, insurance, and bonding.

Respondents that address the entire RFP will be evaluated by the evaluation criteria in the below table:

Item	Points Possible
Project Understanding and Approach	25
Respondent’s Experience Building Similar Networks	15
Respondent’s Regulatory Plan	10
Respondent’s Timeline to Completion	10
Warranties, Documentation, and Demonstrated Financial Wherewithal	15
Bid Price	25
Total	100

- **Project Understanding and Approach.** OTO Fiber seeks to partner with a contractor that understands the goals for the project. Respondents should demonstrate their understanding of the project and its goals and provide a project plan in sufficient detail to provide a high degree of confidence they will successfully construct the project as scoped, scheduled, and budgeted.
 - Method of Points Award
 - Project schedule that conforms with the RFP requirements: 0-15 points
 - Clearly articulated project plan supporting the schedule: 0-10 points
- **Experience Building Similar Networks.** The ideal respondent will have at least five years of experience successfully deploying municipal-scale or similar fiber optic networks on time and on budget. Respondents should demonstrate ability to provide sufficient manpower and equipment rapidly enough to achieve the project’s construction objectives.
 - Method of Points Award
 - Experience building similar networks: 0-15 points
- **Regulatory Plan.** Respondents should demonstrate ability and experience in following appropriate regulatory requirements. Ideal respondents will have experience constructing federally-funded projects, but in any case, all respondents should show understanding of the NBRC requirements outlined in this document and its Exhibits. Respondents must not be currently debarred from participating in Federally-funded projects. Lastly, respondents should provide a plan for meeting the NBRC requirements.
 - Method of Points Award
 - Demonstrated understanding of regulatory requirements: 0-5 points

- Experience constructing federally-funded projects in the last three years: 0-5 points
- **Timeline to Completion**. Respondents should include a timeline for the construction of the project. In addition, respondents should demonstrate experience constructing similar projects on time and in budget.
 - Method of Points Award
 - Detailed construction timeline that meets OTO Fiber’s timeline: 5 points
 - Demonstrated experience building fiber optic networks within original timeline: 0-5 points
- **Warranties, Documentation, and Demonstrated Financial Wherewithal**. Respondents should demonstrate ability to warranty their design and work products and to generate documentation, such as as-builts, CAD drawings, and the like in accordance with industry standards. In addition, respondents should provide assurance (confidentially if desired by so noting in their response) of their ability to secure the required performance, payment, and bid bonds, as well as insurance requirements.
 - Method of Points Award
 - Warranty specifications included in response: 0-5 points
 - Confirmation of ability to comply with required documentation aspects: 0-5 points
 - Demonstrated ability (e.g., bank letter or other confirmation) of ability to secure required bonding and insurance: 5 points
- **Bid Price**. The bid pricing should include the following items:
 - Firm, fixed-price bid for the primary/core networks in both communities, including fit-out of the fiber concentration points and connection to the Headend.
 - Firm fixed-price bids for each expansion neighborhood, labeled as:
 - Orono Pine Street
 - Orono Forest-Noyes-Mahaney
 - Orono Westwood
 - Old Town Blueberry Hill
 - Old Town Oak Perkins
 - Firm fixed-price bid for additional drops as described in Section 4.6.3.

Proposal Acceptance

OTO Fiber reserves the right to accept or reject any or all proposals as deemed to be in the best interest of OTO Fiber.

Costs of Preparation

The Respondent shall be solely responsible for all expenses it incurs in responding to this RFP. This includes any presentations or demonstrations associated with the RFP.

4 Project

Overall Design

4.1.1 Old Town Design

The network was divided into the Core, Blueberry Hill, and Oak Perkins neighborhoods. The Core Network measures out to 3.4 route miles. The Core Network design includes a dedicated buffer tube to serve the large shopping center along Stillwater Ave. This and other design features are marked on the design prints in Exhibit D.

4.1.2 Orono Design

The network was divided into the Core, Forest-Noyes-Mahaney, Westwood and Pine Street neighborhoods. Each neighborhood has a separate cable terminating to the FCP.

The FTP and splicing for all the Expansion Neighborhood options are included in the neighborhood SOWs and BOMs.

Installation Materials

Contractor will be responsible for procuring all materials and providing a warranty for the major materials. Required materials and quantities are listed in Exhibit C. Any and all substitutions made to this bill of materials must meet or exceed the warranty specifications of the materials listed in Exhibit C.

The Contractor is held responsible for all materials through OTO Fiber's acceptance of the network. If the materials supplied by the Contractor are found to be defective, or do not conform to the specifications upon testing, OTO Fiber reserves the right to have the Contractor immediately replace the materials at the contractor's expense and through its procurement process. Excess materials purchased but not used during the construction will become property of OTO Fiber upon acceptance of the network.

Staging Area

If the Respondent determines that a staging area is necessary to meet the project requirements, it should clearly indicate this in its response. If the proposed staging area is on City, Town, or University property, or its access is otherwise controlled by the City, Town or University, Respondent should make clear its requirements for access to the proposed staging area, including but not limited to desired term, hours, and space needed.

Proposed staging areas should be located within the geographic Project area. Respondents shall warrant that their use of the area for staging purposes will follow applicable regulations and laws.

Pole Licensing, Make Ready, and Permitting

The project will span approximately 142 poles for the Core network in the City of Old Town, with the potential of up to an additional 158 poles in expansion neighborhoods. The Core network in the Town of Orono spans approximately 156 poles with the potential of up to an additional 88 poles in expansion neighborhoods. The vast majority of poles in Orono have existing carrier strand to which new fiber will be overlashed as part of this project. Respondents will not be responsible for pole or conduit licensing or make ready.

The fiber route is in the public right-of-way or on private property for which easements and agreements have already been secured, as needed.

Construction Scopes

This section outlines the scopes of construction for the project. Respondents are required to respond to all scopes outlined; they are separated here only for convenience's sake.

4.1.3 Construction Scope A

OTO FiberNet will require connection to Maine Fiber Company's Three Ring Binder, which is primarily comprised of Corning SMF28e+ fiber. Fiber cable for OTO FiberNet shall be of equivalent quality to that used for Three Ring Binder and meet applicable industry guidelines, including Telcordia GR-20 and ITU-T G.652.D.

OTO Fiber seeks respondents to perform the following:

1. Review the final, engineered design and determine a viable construction plan that satisfies the scheduling requirements outlined in this document.
2. Identify any probable constructability issues or concerns in the network design, and work with OTO Fiber to arrive at suitable remedies.
3. Procure adequate amounts of fiber optic cable conforming to the project's specifications to build the network as specified by the final engineered network design.
4. All required anchors or guying will be per pole owner guidelines as noted in the Design Prints (Exhibit D).
5. Install fiber optic cable aerially, per the project design specifications in Exhibit B – Statements of Work and Exhibit D – Design Prints.
6. Develop and execute a traffic management plan in coordination with the municipal Public Works Directors and in compliance with applicable regulations of the State of Maine, the City of Old Town and the Town of Orono.
7. Perform ongoing quality control checks of the as-built network throughout the construction period. Escalate issues to OTO Fiber as needed.
 - a. Submit weekly quality control report with the weekly progress/status report.
 - b. Perform OTDR testing on each fiber strand installed.
 - c. For all terminated strands, report true span loss not to exceed 0.35 dB/km.

8. Perform all testing required by OTO Fiber after construction is completed or as required by federal grant conditions.
9. OTO Fiber will schedule a final inspection after construction has been completed. Any defects identified must be remedied before final project acceptance and payment.
10. Document and deliver all as-built specifications as ESRI-compatible shapefiles.
11. Complete outstanding issues and close the project.

4.1.4 Construction Scope B: Fiber Concentration Points

The winning bidder shall:

1. Construct the fiber concentration facilities in the two fiber concentration points, one located in each community, per the project requirements.
2. Procure and install cabinets, patch panels, and other materials as defined in Exhibit C - Bills of Materials.

4.1.5 Additional Drops

Bidders are asked to provide a price to install drops to premises along the route that request service, as directed by OTO Fiber. The price bid for these additional service drops is outside the scope of the OTO Fiber- and Federally-funded network construction and will be an optional additional service.

Additional service drops under this scope are limited to those to be constructed at the same time as initial network construction. The price bid herein is only considered binding during this time, and not after the network construction is complete.

Bidders are encouraged to identify a quantity discount mechanism whereby the price for all drops could be reduced as the number of additional drops increases. Bidders' responses to this scope should include:

- A firm fixed price per additional drop, specifying labor and materials breakdown. Multiple prices can be quoted for varying drop lengths or underground/aboveground. Drop price can also be quoted per foot if preferred.
- Required amount of advance notice of an additional drop to be constructed
- Suggested quantity discount mechanism, if any

Other Installation Requirements

- All construction is to be per industry standards including, but not limited to, Telcordia Blue Book and NESC code.
- All fiber optic cable shall be installed per manufacturer's best practices and tensioned per manufacturer's specifications.
- The Contractor is responsible to install all necessary pole hardware suitable for the provided cable.

- High visibility cable tags or markings containing the Owner's information shall be installed at every pole, splice enclosure, and riser guard, and be visible while standing on the ground.
- Serving terminals are to be installed approximately 18 inches to the right of the pole, and drop ports are to be installed on the left side of the terminal.
- An 8-foot slack loop shall be placed at all serving terminal locations for splicing. The remaining slack not used for splicing is to be coiled in the back of the serving terminal for storage and proper access to the fibers.
- Labeling of the cable sizes and direction is required. All fiber strands spliced into ports will be tagged and identified per terminal splice design.
- At each aerial splice location 150 feet of cable will be left on each cable end for splicing, or as otherwise indicated on the construction drawing. The cable ends must be sealed watertight to prevent water from entering the cable.

Splicing Requirements

- All splicing shall be completed as per splice details provided prior to the start of construction for each identified splice location.
 - Any changes shall be approved prior to completion.
- All fibers and connector assemblies (pigtails) shall be fusion spliced.
 - All splices are to be organized and secured within an approved fiber optic splice closure.
 - The Contractor shall follow the manufacturer's recommended cable preparation and routing procedures for cable entry into the provided fiber optic splice closure.
- The Contractor shall maintain a Splice Log Book for each splice enclosure.
 - Each splice enclosure will have a unique identifier as per the design prints and shall be large enough to be visible from the road. The splice enclosure identifier shall also be referenced on the Splice Log Book cover.
 - The Splice Log Book shall include a copy of the original splice detail sheet, a red-lined copy of the as-built detail, LID readings from the fusion splicer, Optical Time Domain Reflectometer (OTDR) Test results of the fibers spliced at that location, pictures of the organization and layout of the interior of the enclosure, and pictures of the enclosure on the cable or strand.
 - The Splice Log Book shall also include any additional pertinent information not listed.
 - The Splice Log Book shall be delivered to the OPM electronically upon request and at the end of the project.
- All splicing shall be monitored with an OTDR and tested to ensure acceptable splice loss values are achieved.
- Labeling of the cable sizes and direction is required. All fiber strands spliced into ports will be tagged and identified per terminal splice design. All labeling is expected to meet applicable standards and recognized best practices.

- All tools and equipment used shall be in excellent working order and all splicing equipment shall have been calibrated within 6-months prior to use on this project.
- Certificates of calibration for splice equipment shall be submitted to OTO Fiber for review and approval.

Testing Requirements

Contractor shall test the network in accordance with the testing requirements in Exhibit A.

Change Orders

If a need arises to change the scope of the project in a reasonably significant way, a change order shall be requested in writing prior to starting work or incurring costs. Change orders shall clearly state the Contractor's expected profit and overhead accruing from the associated change in scope and conform to the requirements of Sections 4.6 – Section 4.8.

All change orders shall be subject to approval by OTO Fiber.

Documentation Requirements

As-built drawings, in either AutoCAD or ESRI shapefiles, including any and all changes implemented. Drawings provided to respondents by OTO Fiber may be used as the basis of as-built drawings.

- Detailed splicing report consisting of:
 - Network
 - FDH
 - POP
 - Splice cases
 - Terminals
- Fiber span footages
- Terminal splice locations
- Strand grounding locations
- Multi-port locations
- Slack loop locations
- Routes of all wire/cables installed (in ESRI shapefile format)
- Test results for optical fiber testing
- Warranty Package to include dates (Product Warranty)
- Certificate of Acceptance (pre- and post-installation)
- Summary sheet of test results for quick reference
- POP Shelter and Compound diagrams

Job Completion

Job completion occurs when the following conditions are satisfied:

1. Contractor submits last invoice.
2. Contractor notifies OTO Fiber that construction is complete.
3. Final inspection has occurred.
4. All punch list items have been completed.
5. All equipment and material warranties have been transferred to OTO Fiber.
6. All construction materials and fiber reels have been returned with a list of remaining items.
7. All the Documentation for the Fiber Project is submitted:
 - Design As-Builts
 - Fiber Organization Drawing
 - Fiber testing results end to end for attenuation and continuity
 - OTDR results, including each individual Splice Enclosure Log Book.

Warranty Requirements

1. The Contractor shall warrant that all materials furnished shall be new, and free from defects.
2. The Contractor shall warrant that the materials and workmanship used in this installation are as herein specified and shall provide all material and labor required to make good any defects due to faulty materials or workmanship which become apparent within a one-year period from substantial completion.
3. The equipment and materials manufacturers are expected to recognize that they are responsible for the failure of their products to perform in accordance with data furnished by them or their authorized representatives, as well as misrepresentations of such data.
 - When the products have been installed in accordance to the manufacturer's published or written instructions and recommendations, and such products fail, then the Contractor and the manufacturers are responsible for replacement of the products and all associated work and materials without additional cost to the Owner.
4. Warranty information is required for all materials supplied by the Contractor.
5. Damage by vandals, fire, traffic accidents or "acts of God" is excluded from warranty

5 General Conditions

The following are required of General Contractors responding to this solicitation.

Bid Submission

Final responses are due via mail or hand-delivery by the date and time specified in Section 3.6 to the RFP point of contact. OTO Fiber reserves the right to reject any bids that fail to meet this deadline. OTO Fiber reserves the right to issue extensions to this deadline at its discretion. Responses should be submitted on thumb drives as Adobe PDF files with eight hard copies.

Schedules and cost estimates can be included in the PDF or detailed in an accompanying Excel workbook.

Proposal Life

Respondents shall assert that their proposals are valid for 120 days post bid deadline. If the deadline is extended, proposals shall remain valid for 120 days post the extended deadline. This includes all equipment costs, labor costs, and other costs associated with the network construction.

Disclosure of Proprietary Records

Bidders may preserve proprietary rights as to confidential or business process information provided that: (i) Bidder shall inform OTO Fiber upon submission of its Bid, in writing, that such records are going to be furnished, are proprietary and are not to be disclosed; and (ii) said records shall be sufficiently identified; and (iii) Bidder shall state the reasons why the information should be exempted from disclosure; and (iv) designation of said records as exempt from disclosure is reasonable and accepted by OTO Fiber. Acceptance of the claimed materials does not constitute a determination on the exemption request, which determination will be made in accordance with statutory procedures.

Northern Border Regional Commission Bonding Requirements

This project is funded with money from the Northern Border Regional Commission. The Northern Border Regional Commission has the minimum requirements as follows:

- A. A bid guarantee from each bidder equivalent to five percent of the bid price. The “bid guarantee” must consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of the bid, execute such contractual documents as may be required within the time specified.
- B. A performance bond on the part of the contractor for 100% of the contract price. A “performance bond” is one executed in connection with a contract to secure fulfillment of all the contractor’s obligations under such contract.
- C. A payment bond on the part of the contractor for 100% of the contract price. A “payment” bond” is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract.

6 Response Format and Content

Cover Letter

Respondent(s) must submit a cover letter signed by an authorized representative with power to legally bind the respondent. The cover letter must include the following:

- The number of years the entity has been in business.
- An overview of the experience and background of the entity and its key personnel.
- Identify the legal name of the entity, its headquarters address, its principal place of business, and its legal form (i.e. corporation, joint venture, limited partnership, etc.).
- Identify the name, address, and telephone number(s) of the principal contact for all communications pertaining to the RFP.

Executive Summary

Respondents shall provide an executive summary, that explains the respondent's understanding of the OTO Fiber's objectives, lists the capital cost estimate, and describes the business model at a high level. This summary should discuss the respondent's approach to implementing their solution, their approach to project management, strategies, tools, and safeguards for ensuring performance of all required services.

Respondents should include any additional factors they wish considered in the summary.

Professional Qualifications and Experience

The Respondent shall provide a detailed description of its experience building fiber optic networks and working on projects funded by government grants. The Respondent shall provide names and resumes of key personnel to be involved in the project.

6.1.1 Past Performance

The Respondent shall list relevant past performance building fiber optic networks. In their description of past performance, the respondent shall list:

- Description of the technology employed
- The number of premises served
- Description of the physical environment (urban, rural)
- Description of available speeds at premises
- Dates of performance
- Project size (in subscribers and cost)
- Customer contact information (name, title, phone, email, physical address)

6.1.2 References

Respondent shall provide at least three references for similar projects completed within the last five years. Similar projects include construction of municipal-scale fiber networks, projects involving Federal grants, or both.

Timeline for Completing Work

The Respondent shall discuss its proposed timeline and how it will meet the deadlines cited in this RFP. Specifically, construction should be performed and completed within 120 calendar days. At a minimum, construction shall begin no later than 90 days after the award is made and

contract signed and be completed within 90 days of the final make-ready work being completed including final testing and inspection.

Demonstration of ability to complete construction in less than 120 days without an increase in cost will be looked upon favorably in evaluating responses.

Capital Cost Proposal

The bidder shall use the attached spreadsheet for providing their capital cost proposal for building the network in compliance with the specification outlined in Appendix A. All bids shall be either not-to-exceed or flat fee.

In addition, bidders shall demonstrate that they have access to all materials required in order to complete the project within the project schedule.

Federal Requirements

Bidders shall affirm they have read, understood, and can meet all the requirements outlined in Section 5.4 of this RFP.

Exhibit A – Fiber Testing

OTO Fiber requires OTDR testing that verifies an end-to-end signal on the network that meets future performance requirements.

Required Equipment

Equipment required for testing will consist of OTDR, Pulse Suppression Box, Fiber Scope, and SC/APC fiber jumpers.

Contractor will test with a certified OTDR, to be within manufactures required re-calibration period, usually one years' time.

Acceptance Test

The following tests shall be performed as part of the Acceptance Test:

Optical Time Domain Reflectrometer Tests (OTDR) Continuity Uniformity Tests:

Each fiber shall be tested end-to-end, bi-directionally at 1310 nm and 1550 nm using an OTDR. The test will include fiber loss, splice loss, and connector loss. Test results are to be saved and provided to client electronically for review.

Splices within spec (bi-directional average of ≤ 0.15 dB per splice and ≤ 0.08 dB average for the entire span) or documented on the out of spec splice form with appropriate OTDR Re-burn traces.

Fiber connectors shall meet fiber loss requirements no greater than .3 db loss per connector, measured with a 1km pulse suppression box. If connectors do not meet these standards and new connector shall be installed.

All connectors shall be fiber scoped and screen shot to prove that connector passed software test. Results will be labeled, saved and provided to client electronically

Optical Length and Loss:

The OTDR will be used to determine the end-to-end optical length and loss of the cable. True span loss is not to exceed 0.35 dB/km.

Prior to testing, all fiber jumpers will need to be scoped, cleaned, and tested.

Exhibit B – Statements of Work

Core Network

Old Town (3.39 Miles)

Starting at Old Town's Fiber Concentration Point (FCP) at 160 Center St, Old Town, ME 8,488' of 288ct loose-tube fiber cable is to be placed from Consolidated Communication's (CCI) P. 1 heading in a southwesterly direction along Center St to CCI's P. 62 along Stillwater Ave. 640' of 48ct loose-tube fiber cable will be spliced and placed from CCI's P. 3 at the intersection of Center and 4th St along 4th St to CCI's P. 4 with strand continuing one additional pole through the intersection with Middle St.

Additionally, a second 288ct loose-tube fiber cable 2,026' in length is to be placed from 160 Center St, overlashing one span from CCI's P. 1 to P. ½, to N Brunswick St and ending at CCI's P. 6 at the intersection with Stillwater Ave. There will be two 48ct loose-tube fiber cable laterals required off of N Brunswick St. The first will be 2,042' from CCI's P. 5 heading northeasterly along Middle St connecting onto Water St and ending at an unidentified pole at 44.933512, -68.644246. An additional 48ct lateral will branch off of Middle St at CCI's P. 3 and be placed 424' down Shirley St to CCI's P. 2. The second lateral along N Brunswick St will begin at the intersection with Stillwater Ave at CCI's P. 6 and travel 1,624' along Stillwater Ave to CCI's P.5 on Main St

A 48ct loose-tube fiber cable will also be required from 160 Center St placed 437' northeast two spans to an unidentified pole located at 44.934471, -68.646519.

To complete the Old Town Core network, 818' of 48ct loose-tube fiber cable will be placed from the Old Town FCP and over-lashed to the 288ct fiber cable along Center St to CCI's P. 4. Here we will splice into an existing Maine Fiber Company (MFC) FOSC-450 splice case to provide transport between the headend on UMaine's campus and the FCP.

Fiber slack loops (18 at 100' each), serving terminals (74), anchors (16), and down guys (20) have been designed to adequately meet all network requirements and will be installed along the above routes.

Orono (2.2 Miles)

Starting at Orono's Fiber Concentration Point (FCP) at 59 Main St., Orono, ME, 2,395' of 288ct loose-tube fiber cable is to be overlashed to the existing University of Maine System Network (UMaine) from Emera's P. (44.883182, -68.673836) heading in a north towards Forest Ave to Emera's P. (44.884385, -68.673063) along Bennoch Rd. Continuing on Bennoch Rd., a slack loop will be left at Emera's P. (44.887701, -68.675919) for future expansion along Bennoch Rd. Six serving terminals will be placed to accommodate businesses and residents along Bennoch Rd.

Additionally, a second 288ct loose-tube fiber cable 8,454' in length is to be placed from 59 Main St, overlashing on to UMaine Network, south to Emera's P.3 to Emera's P. 8 on Goodridge and

Main St (Rt.2) intersection. The 288ct loose-tube fiber will then continue South on Main St to Emera's P.64 at the intersection of Old Kelley Ave.

Next, 400' of 48ct loose-tube fiber will be placed and leaving the FCP, heading south towards Goodridge Drive in which it will stop at the splice location between Emera's P.3 and P.4. The 48ct loose-tube transport fiber will be spliced into the existing UMaine Network splice case to provide transport between the headend on UMaine's campus and the FCP.

To complete the Orono Core network, 24 fibers from the 288ct loose-tube cable will be spliced into the existing 96ct loose-tube fiber provided by OTO Fiber Corporation. Fiber counts used from the existing 96ct fiber will start from the intersection of Old Kelley Rd. and Main St (Rt. 2) to Emera's P. 6.5 at the Kelley Road Self Storage (130 Kelley Rd). Serving terminals (7) will be placed at existing OTO slack locations. Existing OTO slacks will remain in place or may need to be migrated to accommodate residents and businesses. Please note in the drawing, the red figure-8 slack loops represent where the slack loops currently reside and the snow shoes represent the slack loops new location according to the design. Additional to the serving terminals, 14 multiport service terminals (MST) will be overlashed on existing Town of Orono Strand 400' from the serving terminals to serve more residents and businesses and reduce the usage of serving terminals along Old Kelley Rd. Forty-five serving terminals and fourteen MSTs are required.

Fiber slack loops (15 at 100' each), serving terminals (52), MSTs (14), anchors (1), and down guys (3) have been designed to adequately meet all network requirements and will be installed along the above routes.

Fiber Concentration Points

Old Town

Location: 160 Center Street, Old Town, Maine



The Fiber Concentration Hut is located in the basement of 160 Center St Old Town Maine, in the back-right corner. The cabinets will be shipped to 59 Main Street Orono. This is where the contractor will pick up the cabinets and overall project major material for the installation of the FCH. The contractor will be responsible to transport and install the 2 main cabinets.

The cabinets will be assembled on site to become one unit, there is one cabinet for the Future DC Power Plant and Future Electronics. The Load Center will come preinstalled. The contractor will unpack and assemble the Main Cabinet from the factory. This will include, fastening the cabinet to the concrete floor, the doors, battery shelf, and all misc. hardware to complete the installation.

Cabinet #2 is the Fiber Distribution Cabinet. The contractor will unpack and assemble the second Cabinet from the factory. This will include, fastening the cabinet to the concrete floor, the doors, the Fiber Distribution Panels and all misc. hardware to complete the installation. The joining collar is to be installed to join the cabinets making the unit one assembly.

Install Fiber Distribution Panels and Splice Fibers Per Fiber Design. Install (2) 48 Fiber Distribution Panels and (2) 288 Fiber Distribution Panels and Splice Fibers per Design. A total of 516 HO-1 Splices are designed to be terminated in the Panels.

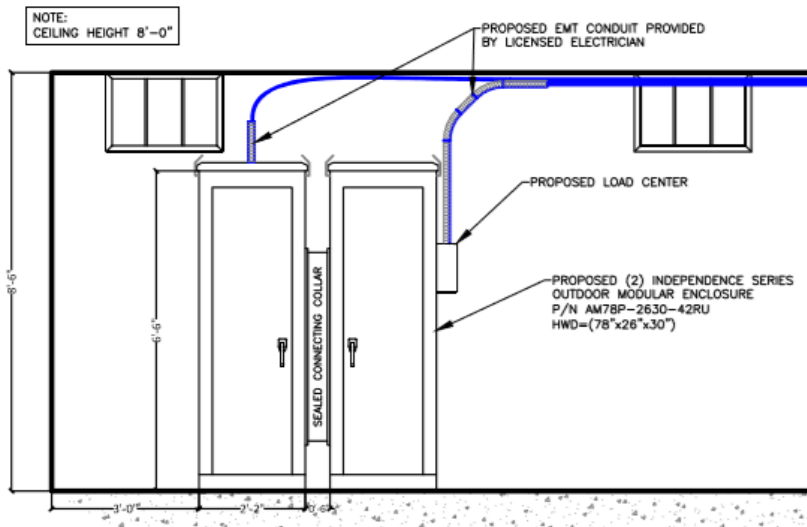
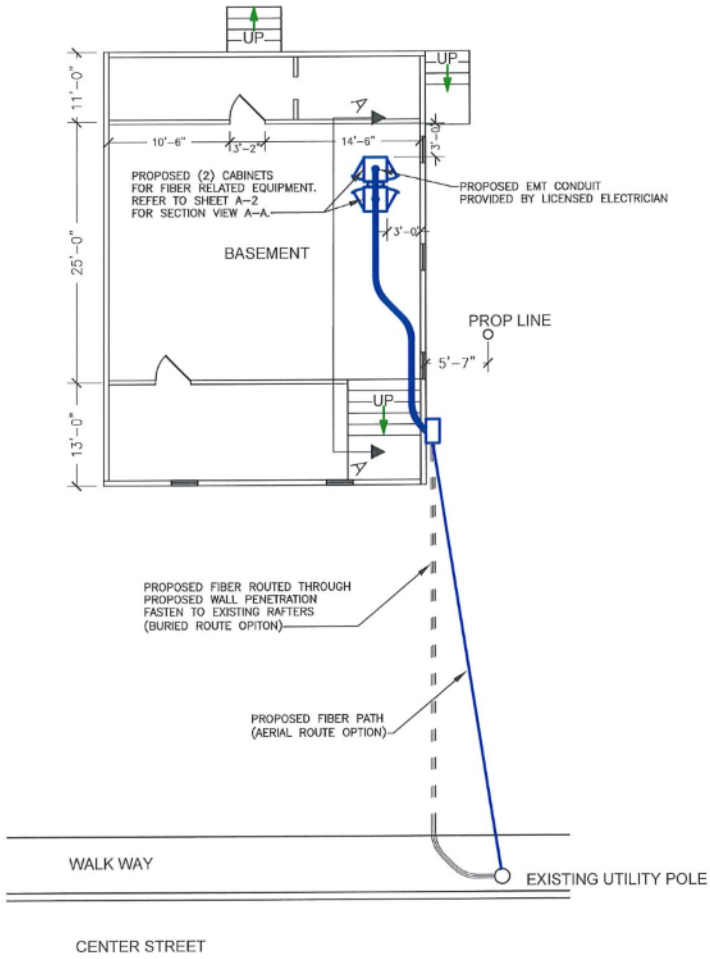
Electrical-

The Electrical Scope of work consist of a new power entrance to the building from the main line feed. And the 3" EMT conduit run from the side of the building, building entrance, and EMT conduit to the cabinet location. See Diagram on Design. Drilling a 3" hole in the top of the FDP cabinet, to accept a liquid tight connection. A certified electrical contractor is required to perform this work.

- City of Old Town electrical permit.
- Complete electrical install per plans and details.
- Upgrade existing 100A service entrance, abandon existing service and panel.
- New 100A branch circuit feeder from MDP to IT/Data rack.
- Provide and install new 100A, 22 Circuit, 1 Phase 240/120V, electrical panel.
- (1) 4" PVC conduit from 14"x14"x10 j-box at exterior of building to IT/Data rack.
- Riser on building for fiber service entrance.
- Power connections for server equipment.
- Install (3) 4' strip lights and switching.

Complete Test and Turn up of Netsure 211 DC Plant including the installation of batteries.

See diagrams and design below:



Orono

Location: 59 Main Street, Orono, Maine



The Fiber Concentration Hut is located in the garage connected to the Town Hall, 59 Main Street Orono Maine, in the back-right corner. The cabinets will be shipped to 59 Main Street Orono. This is where the contractor will pick up the cabinets and overall project major material for the installation of the FCH. The contractor will be responsible to install the 2 main cabinets.

The cabinets will be assembled on site to become one unit, there is one cabinet for the Future DC Power Plant and Future Electronics. The Load Center will come preinstalled. The contractor will unpack and assemble the Main Cabinet from the factory. This will include fastening the cabinet to the concrete floor, the doors, and all misc. hardware to complete the installation.

Cabinet #2 is the Fiber Distribution Cabinet. The contractor will unpack and assemble the second Cabinet from the factory. This will include, fastening the cabinet to the concrete floor, the doors, the Fiber Distribution Panels and all misc. hardware to complete the installation. The joining collar is to be installed to join the cabinets making the unit one assembly.

Install Fiber Distribution Panels and Splice Fibers Per Fiber Design. Install (1) 48 Fiber Distribution Panel and (2) 288 Fiber Distribution Panels and Splice Fibers per Design. A total of 432 HO-1 Splices are designed to be terminated in the Panels.

Electrical-

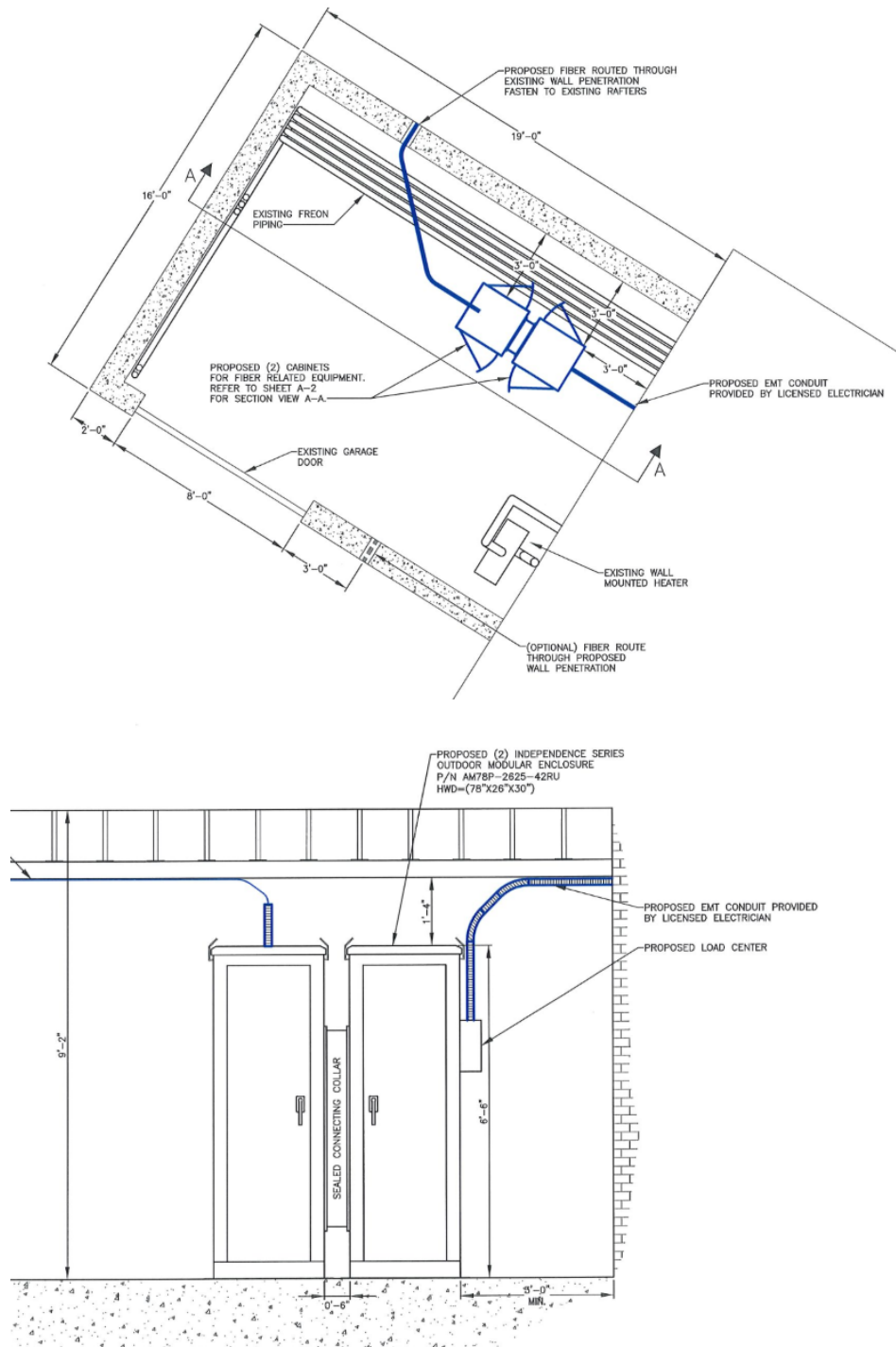
The Electrical Scope of work consist of a new power entrance from the MDP to the FCH, EMT conduit to the cabinet location. See Diagram on Design. Drilling a 3" hole in the top of the FDP cabinet, to except a liquid tight connection. A certified electrical contractor is required to perform this work.

- Town of Orono electrical permit.
- Complete electrical install per plans and details.
- New 100A branch circuit feeder from MDP to IT/Data rack. (Rack/cabinets by others)
- New 100A breaker in MDP.

- Provide and install new 100A, 22 Circuit, 1 Phase 240/120V, electrical panel.
- One 4" PVC conduit from 14"x14"x10 j-box at exterior of building to IT/Data rack.
- Power connections for server equipment and DC plant. (Server equipment by others)

Complete Test and Turn up of Netsure 211 DC Plant including the installation of batteries.

See diagrams and design below:



Expansion Neighborhoods

Old Town

Blueberry Hill Neighborhood (2.96 Miles)

Old Town's Blueberry Hill neighborhood is defined as N Brunswick St, starting at the intersection with Stillwater Ave, heading north onto Gilman Falls Ave and stopping at CCI's P 46. Included are the following streets located off Gilman Falls Ave; 4th Street, Sewall Drive, Sargent Drive, Bachelder Drive, and Leonard Lane. Additionally, Wood St, off N Brunswick St, is included as well.

Starting along N Brunswick St at the intersection with Stillwater Ave, 5,458' of 288ct loose-tube fiber cable is to be placed from CCI's P 6 to CCI's P 46 on Gilman Falls Ave.

The first lateral is located on N Brunswick St takes place at CCI's P. 16 and travels 810' down Wood St ending at an unidentified pole with location 44.939573, -68.648651

Next at CCI's and Emera's P. 30 on Gilman Falls Ave; a 48ct loose-tube fiber cable will be spliced to the 288ct loose-tube fiber cable to create a lateral down 4th St 1,252' in length. Four terminals will be required to serve residents and businesses along 4th St.

Next at CCI's and Emera's P. 37 on Gilman Falls Ave, two 48ct loose-tube fiber cables will be spliced to the 288ct fiber cable to serve Sewall Drive and Sargent Drive independently. The two 48ct fiber cables will be over-lashed for two spans before diverging; requiring 1,946' down Sewall Drive, and 2,238' down Sargent Drive. Fifteen serving terminals will be required.

The last lateral is at CCI's and Emera's P. 42 on Gilman Falls Ave, two additional 48ct loose-tube fiber cables will be spliced to the 288ct fiber cable to serve Bachelder Drive and Leonard Lane. The two 48ct fiber cables will be over-lashed for two spans before diverging; requiring 1,912' down Bachelder Drive, and 1,300' down Leonard Lane. Ten serving terminals will be required.

Fiber slack loops (23 at 100' each), anchors (39), and down guys (41) have been designed to adequately meet all network requirements and will be installed along the above routes.

Oak Perkins Neighborhood (2.64 Miles)

Old Town's Oak Perkins neighborhood is defined by the following streets; Brunswick St (from Center St to Carroll St), Oak St (from Brunswick St to 7th St), Summer St (from 7th St to Bradbury St), Perkins Ave (from Brunswick St to Meadow Ln), Meadow Ln, and Bradbury, 4th, 5th, 6th, and 7th St (from Center St to Perkins Ave).

Starting at Old Town's Fiber Concentration Point (FCP) at 160 Center St, Old Town, ME; 3,970' of 288ct loose-tube fiber cable is to be placed from Consolidated Communication's (CCI) P. 1, over-lashing one span to CCI's P. ½, south down Brunswick St, turning onto Oak St, and down 7th St to Perkins Ave. 48ct loose-tube fiber laterals will then be splice and placed to serve the remainder of the neighborhood.

The first will be at CCI's P. 3 at the intersection of Brunswick and Oak St. 1,965' of 48ct loose-tube fiber will be placed along Brunswick St and onto Carroll St to CCI's P. 2.

Next, there will be three 48ct loose-tube fiber laterals off of Oak St; 1,180' starting at CCI's P.3 on Oak St ending at P. 9 on Bradbury St, 1,367' starting at CCI's P. 2 (at the intersection of Oak and 4th) along 4th St ending at 44.929940, -68.648219 (an unidentified pole), and 1,112' along 5th St starting at 44.932854, -68.650427 and ending at 44.930432, -68.649571 (an unidentified pole).

Lastly, 48ct loose-tube fiber laterals will be spliced and placed east and west from the intersection of 7th and Perkins where the 288ct loose-tube fiber cable ends. 1,620' of the 48ct fiber will be placed east from CCI's P. 14, two spans to P. 12, and turn onto 6th St ending at P. 4. An additional two spans of 48ct fiber will be spliced at CCI's P. 12 on Perkins Ave to continue 445' to P. 10 along Perkins Ave. Then back at CCI's P. 14 on Perkins Ave; we will splice and place the last 48ct fiber 1,122', following Perkins Ave West, to the end of Meadow Ln.

Fiber slack loops (22 at 100' each), serving terminals (62), anchors (17), and down guys (23) have been designed to adequately meet all network requirements and will be installed along the above routes.

Orono

Forest-Noyes-Mahaney Neighborhood (1.7 miles)

Orono's Forest-Noyes Neighborhood is defined by the following streets located off Forest Avenue from P.216 going west; Noyes Drive, Sunrise Terrace, Haskell Street, Woodland Drive, Averill Street, Mountainview Drive, Frost Lane and Edgewood Drive.

Starting at Emera's P. NT (44.883182, -68.673836) from the Fiber Concentration Point (FCP); a 144ct loose-tube fiber cable will be placed from the FCP going north towards Forest Avenue. At Emera's P. 216, the cable will continue west on Forest Avenue to Emera's P. 15 at the intersection of Forest Avenue and Noyes Drive. The cable will then continue north on Noyes Drive and will end at Emera's P. 4 at the intersection of Noyes Drive and Averill Street. Eleven serving terminals will be required.

Next, at Emera's P. 4 located at the intersection of Noyes Drive and Averill Street, a 48ct loose-tube fiber cable will be spliced to the 144ct loose-tube fiber cable. The 48ct loose-tube fiber will head west on Averill Street to the intersection of Averill Street and Woodland Drive, it will then head south to the intersection of Woodland Drive and Haskell Street. At Emera's P. 3 on Haskell Street and Woodland Drive, the fiber cable will head east on Haskell Street and be dead-ended at Emera's P. 2. Three serving terminals will be required.

At Emera's P. 1 (at the intersection of Noyes Drive and Sunrise Terrace), a 48ct loose-tube fiber will be spliced to the 144ct loose-tube fiber cable. The 48ct loose-tube fiber cable will continue east and north on Sunrise Terrace to be dead-ended at Emera's pole at the intersection of Sunrise Terrace and Noyes Drive towards Bennoch Road. Five serving terminals will be required.

Lastly, at Emera's P. 15, a 48ct loose-tube fiber cable will be spliced to the 144ct loose-tube fiber cable at Emera's P. NT located at the intersection of Forest Avenue and Mountainview Drive. The fiber cable will then continue south on Mountainview Drive to Emera's P.5 at the intersection of Mountainview Drive and Edgewood Drive. The fiber cable will then head west on Edgewood Drive and be dead-ended at Emera's P. 11. Six serving terminals will be required.

An additional 48ct loose-tube fiber cable will be spliced to the fiber cable along Mountainview Drive at Emera's P.3 (intersection of Mountainview Drive and Frost Lane). The new 48ct loose-tube fiber will then continue west on Frost Lane to be dead-ended at Emera's P.9. Four serving terminals will be required.

Fiber slack loops (7 at 100' each), anchors (26), and down guys (28) have been designed to adequately meet all network requirements and will be installed along the above routes.

Pine Street Neighborhood (0.96 Miles)

Orono's Pine Street Neighborhood is defined by the following streets located off of Main Street (Route 2) from the intersection of Goodridge Drive and Main Street going northeast; Myrtle Street (back of Bank of America east to Pine Street), Pine Street (intersection of Pine Street and Myrtle Street to the intersection of Beech Street), Pleasant Street, Middle Street, Beech Street, Mill Street (between Wagner Drive and Beech Street), Summer Street (between Mill Street and Oak Street) and Oak Street.

Starting at Emera's P. (44.883182, -68.673836) from the Fiber Concentration Point (FCP); a 144ct loose-tube fiber cable will be placed from the FCP going south to Goodridge Road then east to Emera's P. 8 at the intersection of Goodridge Road and Main Street (Route 2). The 144ct loose-tube fiber will then continue north to the parking lot of Bank of America. At Emera's P.6 ½ the fiber cable will continue through the parking lot to Emera's P. 3 at the intersection of Myrtle Street then head in a northerly direction to Emera's P. 4 at the intersection of Myrtle Street and Pine Street. The cable will then go east towards Pleasant Street at Emera's P. 7 and go north on Pleasant Street to the intersection of Pleasant Street, Mill Street and Summer Street. The cable will continue north on Summer Street to the intersection of Summer Street and Oak Street, Emera's P. 2. The cable will then continue west on Oak Sstreet to Emera's P. 3 across the street from the intersection of Main Street and Oak Street. A 100' slack loop will be left at Emera's P. 3 to future expansion going north on Main Street. Twelve serving terminals will be required.

Next, at Emera's P. 7 located at the intersection of Pine Street and Pleasant Street, a 48ct loose-tube fiber cable will be spliced to the 144ct loose-tube fiber cable. The 48ct loose-tube fiber will head southeast on Pine Street to the intersection of Pine Street and Beech Street, which it will then head north on Beech Street at Emera's P. 11. At Emera's P.5 located at the intersection of Beech Street and Middle Street, the cable will continue west on Middle Street to Emera's P.1. Six serving terminals will be required.

Lastly at Emera's P. 6 (at the intersection of Pleasant Street, Mill Street and Summer Street) a 48ct loose-tube fiber will be spliced to serve Mill Street and part of Beech Street. The cable will

go east on Mill Street to Emera's P. 129720 (44.882795, -68.667918) then will go south on Beech Street and stop at Emera's P. 2. Nine serving terminals will be required.

Fiber slack loops (11 at 100' each), anchors (5), and down guys (9) have been designed to adequately meet all network requirements and will be installed along the above routes.

Westwood Drive Neighborhood (0.70 Miles)

Orono's Westwood Drive neighborhood is defined by the following streets located off of Main St (Rt. 2); Goodridge Drive and Westwood Drive (intersection of Westwood Drive and Goodridge Drive going west).

Starting at Fiber Concentration Point (FCP) located at the garage in the back of the Orono Town Office (59 Main St., Orono, ME); a 48ct loose-tube fiber cable is to be placed from Emera's pole (44.883182, -68.673836) in the Town offices parking lot to Emera's P.3 on Goodridge Drive. The fiber will then continue southwest on Goodridge Drive to Emera's P.4 at the intersection of Goodridge Drive and Westwood Drive (1,327'). Two terminals will be required to serve residents and businesses along Goodridge Drive.

Lastly at Emera's P. 4 on Westwood Drive, the 48ct loose-tube fiber will continue approximately 1,906' in a northwesterly direction to Emera's P. 19, where it marks the end of the "Westwood Drive Neighborhood". Six serving terminals will be required.

Fiber slack loops (3 at 100' each), anchors (5), and down guys (7) have been designed to adequately meet all network requirements and will be installed along the above routes.

Exhibit C – Bills of Materials

Core Network

Old Town

Assembly	Status	Description	Part Number	Number	Length	Amount
10(M)	Planned	5/16 EHS		2	885	885
6.6 (M)	Planned	6.6M Strand		13	13943	13943
CFO 288	Planned	AERIAL DIELECTRIC - LOOSE TUBE - DRY CABLE	288EU4-T4100D20	8	11420	11420
CFO 48	Planned	AERIAL DIELECTRIC - LOOSE TUBE - DRY CABLE	048EU4-T4100D20	7	6494	6494
Down Guy	Planned	Aerial Down Guy PE-1-3		4	0	4
Expansion Anchor	Planned	PF1-5a		16	0	16
PM2A	Planned	GROUND WIRE ASSEMBLY		11	0	11
SCA-9T-24 (4:2)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T24-046CPL-BR	13	0	13
SCA-9T-24 (4:3)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T24-046CPL-BR	2	0	2
SCA-9T-24 (4:4)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T24-046CPL-BR	11	0	11
SCA-9T-34 (4:0)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T34-046CPL-BR	3	0	3
SCA-9T-34 (4:2)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T34-046CPL-BR	23	0	23
SCA-9T-34 (4:3)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T34-046CPL-BR	2	0	2
SCA-9T-34 (4:4)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T34-046CPL-BR	20	0	20
Snow Shoes	Planned	Snow Shoes		18	0	18
Terminal Splicing	Planned	Terminal Splicing		4	120	120

Orono

Assembly	Status	Description	Part Number	Number	Length	Amount
10(M)	Planned	5/16 EHS		1	174	174
CFO 288	Planned	AERIAL DIELECTRIC - LOOSE TUBE - DRY CABLE	288EU4-T4100D20	2	11356	11356
CFO 48	Planned	AERIAL DIELECTRIC - LOOSE TUBE - DRY CABLE	048EU4-T4100D20	3	450	450
Down Guy	Planned	Aerial Down Guy PE-1-3		2	0	2
Expansion Anchor	Planned	PF1-5a		1	0	1
PM2A	Planned	GROUND WIRE ASSEMBLY		1	0	1
SCA-9T-24 (4:1)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T24-046CPL-BR	2	0	2
SCA-9T-24 (4:2)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T24-046CPL-BR	4	0	4
SCA-9T-24 (4:3)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T24-046CPL-BR	1	0	1
SCA-9T-34 (4:2)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T34-046CPL-BR	14	0	14
SCA-9T-34 (4:3)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T34-046CPL-BR	5	0	5
SCA-9T-34 (4:4)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T34-046CPL-BR	26	0	26
Snow Shoes	Planned	Snow Shoes		15	0	15
Migrate Slack	Planned	Migrate Slack		1	1000	1000
Terminal Splicing	Planned	Terminal Splicing		21	101	101
4 Port MST	Planned	4 Port MST - 400ft tail	MST-04MH00-A0400U	13	13	13
4 Port MST	Planned	4 Port MST - 600ft tail	MST-04MH00-A0600U	1	1	1

Fiber Concentration Points

Old Town

Assembly	Status	Description	Part Number	Quantity	Unit
Cabinet Details					
			<u>OC-OTH-PW00X-023</u>		
AM78P-2630-42RU		78" INDEPENDENCE CABINET (42RU)	AM78P-2630-42RU	2	each
AMP-2630-BB		23" Battery Tray Battery Tray 23" Mounting for 30-36" Depth Cabinets	AMP-2630-23BT	1	each
AM58-84P-LC		LOAD CENTER PANEL - ASM (58-84")	AM58-84P-LC	1	each
AM-GP		30 AMP GENERATOR PLUG ASSEMBLY	AM-GP	1	each
AMMF-HEXS-7-48IQ		HEAT EXCHANGER 5.7W 48V DC	AMMF-HEXS-7-48IQ	1	each
AM58-84P-BP		58-84" SIDE BLANK PANEL OPTION	AM58-84P-BP	1	each
AM58-84P-CLR		JOINING COLLAR ASM 58IN	AM58-84P-CLR	1	each
582136600-20343272		NetSure 211 MINI POWER SYSTEM	582136600-20343272	1	each
1R481000		Rectifier, NetSure, 1000W, -48VDC	1R481000	2	each
1R481000		Blank Panel, 1x2U	1R481000	2	each
PSK4820R-1		BAT,ENERSYS SRS190F,12V Mod,190 Ah	PSK4820R-1	4	each
138176		Breaker 2-Pole 20-amp for Rectifier Feeds	138176	2	each
SQDQ0220		Misc Lugs, Power Wire and Labeling	SQDQ0220	5	each
LABOR		Assembly, Wiring, Testing Charges	LABOR	15	each
Plinth	Planned	6" Mounting Plinth	AMGP-2630-MP	2	each
Cabinet Install & Fiber Management					
Install Cabinets & Fiber Distribution Panels	Planned			1	each
Fiber Jumpers	Planned	TBD		50	each
Fiber Management	Planned	Fiber Management for cabinets & fiber jumpers		1	each
Fiber Distribution Panels & Splicing					
FDP-48	Planned	Century Fiber Distribution Panel	FTS-350-48SCDLS48P-4/S-2/B	1	each
	Splicing	Splicing Fibers into Fiber Distribution Panel		12	each
FDP-288	Planned	Century Fiber Distribution Panel	FTS-210-288SCDLS288P-12/24S	1	each
	Splicing	Splicing Fibers into Fiber Distribution Panel		288	each
FDP-288	Planned	Century Fiber Distribution Panel	FTS-210-288SCDLS288P-12/24S	1	each
	Splicing	Splicing Fibers into Fiber Distribution Panel		192	each
FDP-48	Planned	Century Fiber Distribution Panel	FTS-350-48SCDLS48P-4/S-2/B	1	each
	Splicing	Splicing Fibers into Fiber Distribution Panel		24	each
Power Feed & Installation - Power and Conduits for Fiber					
Electrical	Planned	Electrical Installation for Power , Conduits, and Cabinets		1	each
Restoration of Basement	Planned	Remove Rug, Repair Ceiling, Seal & RePair Concrete	TBD - Need Repair Estimate	1	Each

Orono

Assembly	Status	Description	Part Number	Quantity	Unit
Cabinet Details					
			<u>OC-OTH-PW00X-023</u>		
AM78P-2630-42RU		78" INDEPENDENCE CABINET (42RU)	AM78P-2630-42RU	2	each
AMP-2630-23BT		BATTERY TRAY 23"	AMP-2630-23BT	1	each
AM58-84P-LC		LOAD CENTER PANEL - ASM (58-84")	AM58-84P-LC	1	each
AM-GP		30 AMP GENERATOR PLUG ASSEMBLY	AM-GP	1	each
AMMF-HEXS-7-48IQ		HEAT EXCHANGER 5.7W 48V DC	AMMF-HEXS-7-48IQ	1	each
AM58-84P-BP		58-84" SIDE BLANK PANEL OPTION	AM58-84P-BP	1	each
AM58-84P-CLR		JOINING COLLAR ASM 58IN	AM58-84P-CLR	1	each
582136600-20343272		NetSure 211 MINI POWER SYSTEM	582136600-20343272	1	each
1R481000		Rectifier, NetSure, 1000W, -48VDC	1R481000	2	each
1R481000		Blank Panel, 1x2U	1R481000	2	each
PSK4820R-1		BAT,ENERSYS SRS190F,12V Mod,190 Ah	PSK4820R-1	4	each
138176		Breaker 2-Pole 20-amp for Rectifier Feeds	138176	2	each
MISC H		Misc Lugs, Power Wire and Labeling	SQDQ0220	5	each
LABOR		Assembly, Wiring, Testing Charges	LABOR	15	each
Plinth	Planned	Mounting Plinth 6"	AMGP-2630-MP	2	each
Cabinet Install & Fiber Management					
Install Cabinets & Fiber Distribution Panels	Planned			1	each
Fiber Jumpers	Planned	TBD		50	each
Fiber Management	Planned	Fiber Management for cabinets & fiber jumpers		1	each
Fiber Distribution Panels & Splicing					
FDP-48	Planned	Century Fiber Distribution Panel	FTS-350-48SCDLS48P-4/S-2/B	1	each
	Splicing	Splicing Fibers into Fiber Distribution Panel		12	each
FDP-288	Planned	Century Fiber Distribution Panel	FTS-210-288SCDLS288P-12/24S	1	each
	Splicing	Splicing Fibers into Fiber Distribution Panel		288	each
FDP-288	Planned	Century Fiber Distribution Panel	FTS-210-288SCDLS288P-12/24S	1	each
	Splicing	Splicing Fibers into Fiber Distribution Panel		144	each
Power Feed & Installation - Power and Conduits for Fiber					
Electrical	Planned	Electrical Installation for Power , Conduits, and Cabinets		1	each

Note: DC power system, batteries, and electrical work should be priced separately.

Expansion Neighborhoods

Old Town

Blueberry Hill Neighborhood

Assembly	Status	Description	Part Number	Number	Length	Amount
6.6 (M)	Planned	6.6M Strand		9	11565	11565
CFO 288	Planned	AERIAL DIELECTRIC - LOOSE TUBE - DRY CABLE	288EU4-T4100D20	5	5458	5458
CFO 48	Planned	AERIAL DIELECTRIC - LOOSE TUBE - DRY CABLE	048EU4-T4100D20	8	10192	10192
Down Guy	Planned	Aerial Down Guy PE-1-3		2	0	2
Expansion Anchor	Planned	PF1-5a		39	0	39
PM2A	Planned	GROUND WIRE ASSEMBLY		8	0	8
SCA-9T-24 (4:2)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T24-046CPL-BR	13	0	13
SCA-9T-24 (4:4)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T24-046CPL-BR	20	0	20
SCA-9T-34 (4:2)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T24-046CPL-BR	11	0	11
SCA-9T-34 (4:4)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T34-046CPL-BR	9	0	9
Snow Shoes	Planned	Snow Shoes		23	0	23
Terminal Splicing	Planned	Terminal Splicing		4	120	120

Oak Perkins Neighborhood

Assembly	Status	Description	Part Number	Number	Length	Amount
6.6 (M)	Planned	6.6M Strand		10	11750	11750
CFO 288	Planned	AERIAL DIELECTRIC - LOOSE TUBE - DRY CABLE	288EU4-T4100D20	5	4320	4320
CFO 48	Planned	AERIAL DIELECTRIC - LOOSE TUBE - DRY CABLE	048EU4-T4100D20	8	9595	9595
Down Guy	Planned	Aerial Down Guy PE-1-3		6	0	6
Expansion Anchor	Planned	PF1-5a		17	0	17
PM2A	Planned	GROUND WIRE ASSEMBLY		7	0	7
SCA-9T-24 (4:2)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T24-046CPL-BR	9	0	9
SCA-9T-24 (4:4)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T24-046CPL-BR	34	0	34
SCA-9T-34 (4:2)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T34-046CPL-BR	7	0	7
SCA-9T-34 (4:4)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T34-046CPL-BR	12	0	12
Snow Shoes	Planned	Snow Shoes		22	0	22
Terminal Splicing	Planned	Terminal Splicing		7	476	476
FDP-288	Planned	Century Fiber Distribution Panel	FIS-210-288SCDLS288P-12/245	1	0	1

Orono

Forest-Noyes-Mahaney Neighborhood

Assembly	Status	Description	Part Number	Number	Length	Amount
6.6 (M)	Planned	6.6M Strand		6	7653	7653
CFO 144	Planned	AERIAL DIELECTRIC - LOOSE TUBE - DRY CABLE	144EU4-T4101D20	1	3293	3293
CFO 48	Planned	AERIAL DIELECTRIC - LOOSE TUBE - DRY CABLE	048EU4-T4100D20	4	5669	5669
Down Guy	Planned	Aerial Down Guy PE-1-3		2	0	2
Expansion Anchor	Planned	PF1-5a		26	0	26
PM2A	Planned	GROUND WIRE ASSEMBLY		11	0	11
SCA-9T-24 (4:3)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T24-046CPL-BR	1	0	1
SCA-9T-24 (4:4)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T24-046CPL-BR	28	0	28
Snow Shoes	Planned	Snow Shoes		7	0	7
Terminal Splicing	Planned	Terminal Splicing		4	192	192
144-FDP	Planned	144-FDP	FIS-105-144SCDLS144P-6/245	1	120	120

Pine Street Neighborhood

Assembly	Status	Description	Number	Length	Amount
6.6 (M)	Planned	6.6M Strand	7	2357	2357
CFO 144	Planned	AERIAL DIELECTRIC - LOOSE TUBE - DRY CABLE	5	5669	5669
CFO 48	Planned	AERIAL DIELECTRIC - LOOSE TUBE - DRY CABLE	4	3293	3293
Down Guy	Planned	Aerial Down Guy PE-1-3	1	0	1
Expansion Anchor	Planned	PF1-5a	4	0	4
PM2A	Planned	GROUND WIRE ASSEMBLY	1	0	1
POLE 35WC3	Planned	Pole - 35 FT Wood Class 3	10	0	10
POLE 50WC4	Planned	Pole - 50 FT Wood Class 4	1	0	1
SCA-9T-24 (4:3)	Planned	AERIAL TERMINAL (4 PORT)	3	0	3
SCA-9T-24 (4:4)	Planned	AERIAL TERMINAL (4 PORT)	25	0	25
Snow Shoes	Planned	Snow Shoes	11	0	11
Terminal Splicing	Planned	Terminal Splicing	4	80	80

Westwood Neighborhood

Assembly	Status	Description	Part Number	Number	Length	Amount
6.6 (M)	Planned	6.6M Strand		3	2638	2638
CFD 48	Planned	AERIAL DIELECTRIC - LOOSE TUBE - DRY CABLE	048E114-14100020	2	5056	5056
Down Guy	Planned	Aerial Down Guy PE-1-3		2	0	2
Expansion Anchor	Planned	PE1-5a		3	0	3
PWZA	Planned	GROUND WIRE ASSEMBLY		1	0	1
SCA-9T-24 (4-2)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T24-046CPL-BR	4	0	4
SCA-9T-24 (4-3)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T24-046CPL-BR	1	0	1
SCA-9T-24 (4-4)	Planned	AERIAL TERMINAL (4 PORT)	SCA-9T24-046CPL-BR	3	0	3
Snow Shoes	Planned	Snow Shoes		3	0	3
Terminal Splicing	Planned	Terminal Splicing		1	24	24
48-FDP	Planned	48-FDP	FTS-350-48SCDU548P-4/5-2/B	1	24	24

Exhibit D – Design Drawings

Please download at www.OTOFiber.com

Exhibit E – Make Ready

Please download at www.OTOFiber.com