CONSTRUCTION AGREEMENT

Southern Tier Network
And
draft
Services for the construction of fiber optic facilities

Prepared By:

August 2021
Table of Contents

<table>
<thead>
<tr>
<th>SECTION</th>
<th>REQUIREMENTS</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SECTION I</td>
<td>GENERAL REQUIREMENTS</td>
<td>3</td>
</tr>
<tr>
<td>SECTION II</td>
<td>SCOPE OF WORK</td>
<td>5</td>
</tr>
<tr>
<td>SECTION III</td>
<td>PROCUREMENT SPECIFIC REQUIREMENTS</td>
<td>8</td>
</tr>
<tr>
<td>SECTION IV</td>
<td>EXECUTION AND TECHNICAL REQUIREMENTS</td>
<td>13</td>
</tr>
<tr>
<td>EXHIBIT A</td>
<td>REQUEST FOR PROPOSAL</td>
<td></td>
</tr>
<tr>
<td>EXHIBIT B</td>
<td>CONTRACTOR RESPONSE TO PROPOSAL</td>
<td></td>
</tr>
</tbody>
</table>
SECTION I  GENERAL REQUIREMENTS

Project overview:

This Agreement is made effective as of XXXXXX (“Effective Date”), by and between the Southern Tier Network, Inc., a New York not-for-profit corporation with a corporate address of 8 Denison Parkway East, Suite 310, Corning, New York 14830 (“STN”), and ABC Construction, a New York corporation with a corporate address of 1 Main St., Anytown, NY (“Contractor”) (each a “Party” and collectively the “Parties”).

STN desires to construct fiber infrastructure using various construction methods within the Southern Tier Central region. Contractor seeks to construct, on behalf of STN, fiber optic infrastructure within Steuben, Chemung Schuyler, Yates, Allegany, Tioga, Tompkins, and Broome Counties. This fiber infrastructure will be installed on utility poles and underground, linking facilities including but not limited to businesses, carrier facilities and other customers as identified, each potentially employing a variety of fiber construction methods.

This section identifies those features and conditions which STN considers to be essential for the provisioning of services resulting from this Agreement. This Agreement governs the relationship between STN, its consultants, assigns, and the Contractor. This Agreement includes the construction budget estimates provided by the Contractor for this work in RFP date August 2021, Exhibit B, the associated project drawings and the provisions of STN’s Service Level Agreement, which is included in STN’s Master Services Agreement (“MSA”) (“Exhibit A”), all of which are hereby incorporated by reference.

A. The Contractor shall work under the supervision of an STN Designated Outside Plant Operations Manager (OM). The Contractor will be responsible for coordinating all work and associated administrative tasks with the STN Operations Manager (OM) or other administrator designated from time to time by STN.

B. The Contractor’s budget estimate sets forth pricing which includes, but is not necessarily limited to, all services, all labor, all emergency work, all administrative, reporting or other requirements, all overhead costs and profit. It shall also include all travel costs, parking fees, and any other ancillary fees and costs including permits, licenses, insurance, etc. Details of service not explicitly stated in these specifications, but necessarily attendant thereto, are deemed to be understood by the Contractor and included herein.

C. The Contractor has provided a list of any assumptions, qualifications and/or limitations relative to the construction, operations, management, and maintenance of the fiber optic network. As such these are included in the Contractor’s proposal (“Proposal”) in response to STN’s request for proposal (“RFP”) included in Exhibit B to this Agreement.

D. Contractor has included, in its Proposal, costs necessary to remedy all deficient items in the proposal and will be responsible for satisfactory performance of the services without extra compensation.
E. STN’s interpretation of this Agreement and construction specifications shall be final and binding upon the Contractor.

F. Should it appear that there is a real or apparent discrepancy between this Agreement and the construction specifications concerning the nature, quality, or extent of work to be furnished, such discrepancy shall be resolved by STN, the decision of which is final.

G. The quality of the work and/or service shall be subject to inspection by STN at any time. Should it be found that the quality of work or services being performed is not satisfactory, and that the requirements of the construction specifications are not being met, STN may terminate this Agreement and employ another contractor to fulfill the requirements of this Agreement. STN will document in writing the problem to the Contractor. The Contractor will then have thirty (30) days to cure or resolve the issue. Determination that the issue has been resolved will be at the sole discretion of STN. The existing Contractor shall be liable to STN for costs and expenses incurred on account thereof.

H. This Agreement shall be subject to termination at any time at the election of STN or the Contractor upon thirty (120) days prior written notice by the terminating Party.

I.1 TERMS & CONDITIONS OF THIS AGREEMENT

During the performance of this Agreement, the Contractor agrees to the terms and conditions outlined in Exhibit D attached hereto and hereby incorporated by reference and made a part hereof as fully as if it were set forth at length herein.

I.2 PRIORITY

In the event of a conflict among the documents comprising this Agreement, the following priority shall prevail:

(A) This Agreement
(B) Exhibit A STN’s MSA (including STN’s Service Level Agreement)
(C) Exhibit B RFP
(D) Exhibit C Proposal
II.1 CONSTRUCTION SERVICES

The Contractor shall be responsible for construction services pertaining to the installation of the fiber optic infrastructure. Included will be all labor, equipment, tools, materials, project management, and other services or components as detailed in the Proposal.

Upon final approval by STN for engineering and unit pricing, which will include quantities and scheduling, the Contractor will be authorized to proceed with construction services. The Contractor shall be responsible for insuring that all aerial, non-aerial, and building entrance components as well as any additional components are integrated as to provide a complete operational system. The successful completion of any or all of these components will be determined upon inspection by STN or its designated representative.

All work shall meet or exceed applicable local, city, county, state, or federal codes and regulations. The Contractor shall secure all required inspections, permits, and/or approvals, unless it is stated otherwise, including any electrical, traffic and safety permits required. The Contractor is responsible to notify the Underground Facilities Protective Organization (“UFPO”) and coordinate all stakeouts required during the construction of this system.

The complete fiber optic infrastructure work, materials, and installation, included under the specification and as indicated on the drawings, shall be in strict accordance with and conform to all applicable local, State of New York regulations, UL labels, National Electrical Code, as well as all other rules, regulations, ordinances of any organization, company or authority having jurisdiction. The Contractor is required to annually test for and certify Stray Voltage compliance as required by the New York State Public Service Commission.

The Contractor will be responsible for following all state and local traffic guidelines. In addition, the Contractor will be responsible for following all OSHA safety regulations.

The Contractor shall provide all items, articles, materials, operation and/or methods listed, mentioned, or scheduled on the drawings and/or herein including all labor, material, equipment, and all incidentals necessary and required for the completion of the entire new fiber system.

Contractor shall be responsible for scheduling of police details and any additional inspectors as required by, local, city, state or federal jurisdiction, and shall bear all costs associated with such police details and inspectors.

At times it will be necessary to divert the flow of vehicular or pedestrian traffic around construction areas. The Contractor shall furnish all signs, barricades, cones, drums, warning lights, flag persons, or other devices which are required in the "Manual on Uniform Traffic Control Devices", or as otherwise required by state and local governments. The Contractor shall be responsible for obtaining all necessary approvals.
Prior to start of construction, the Contractor shall identify the exact running line. The Contractor shall notify, forty-eight (48) hours in advance, all property owners and businesses in the immediate vicinity of the scheduled construction.

Contractor shall notify owners of existing utilities, at least 48 hours prior to commencing construction. The Contractor is responsible for documentation which includes name of company contacted, name of person contacted, date, time, and UFPO number. This documentation shall be turned over to STN.

Depending on the location of the work, the Federal Environmental Protection Agency, the New York State Department of Environmental Conservation, The Army Corps of Engineers, as well as any other State and local Agencies may stipulate construction practices and crew’s behavior requirements in or around environmentally sensitive areas, such as cultural resource sites. Contractor shall adhere to any such stipulated construction practices and crew behavior requirements.

II.2 RIGHT-OF-WAY PROTECTION AND RESTORATION

The Contractor shall protect the right-of-way and minimize the damage from construction operation.

Approved soil erosion prevention practices shall be used during all construction operations.

Contractor shall keep the premises where work is being performed in a neat, clean, and orderly condition at the end of each workday, and upon completion of the work there under, Contractor shall remove all of its tools and equipment from the premises and any debris shall be removed and disposed of by Contractor.

All restoration shall be completed as soon as the cable placing operations are completed in these areas, or at the direction and per the specifications of the local ordinance in effect.

The right-of-way shall be restored to its original or better condition within 24 hours or as soon as practical, in the towns, cities and/or village’s opinion, following conduit and cable placing operations. All restoration shall be at the Contractor's expense.

All terraces, which were removed or damaged, shall be replaced to original or better condition as soon as feasible, in the towns, cities, or village’s opinion, following the placing operations.

The Contractor shall promptly repair or replace any other property damaged during construction.
II.3 CLEARANCES

The Contractor shall ensure that clearances are maintained from other utilities. Clearances are 12” from telephone and or cable TV attached to same side of pole, 6” above or below if attached to opposite side of pole or as directed by local utilities. The Contractor shall also maintain the required 40” clearance from the electric zone.

The clearances defined shall be maintained continuously which includes pole location and mid span. These numbers are subject to change by local utilities, the Contractor is required to verify clearances prior to installation.

II.4 MATERIALS

All materials throughout this installation shall be new and the best of their respective kind. All materials shall be installed in a neat, accurate, professional, and workmanlike manner. All fiber cabling shall be marked with permanent labeling indicating ownership by STN and include STN’s answering service number: 855-935-5050.

All products shall conform to applicable standards of the National Electrical Manufacturer's Association and/or the American National Standards Institute and shall be listed by Underwriter's Laboratory. All equipment must be identified as to the manufacturer.

The Contractor shall be responsible for protecting all finished work, equipment, supplies, and materials from loss, injury, and/or damages from any cause whatsoever until final acceptance by STN.

II.5 AS-BUILT DRAWINGS, DOCUMENTATION

Contractor shall create as-built drawings to be submitted to STN at the end of the job. Contractor shall red-line drawings during the course of construction to show cable numbers and attachments at poles, pole numbers, pull boxes, conduit and building entrance points or other locations deemed necessary by STN, such as GPS points. This should be done on a daily basis. The as-builts shall also show the cable sheath measurements at each pole, conduit and building entrance locations.

The red-line drawings will be available to STN’s OM when requested. Additionally, all red-line drawings will be submitted to STN’s OM on a weekly basis including all actual construction to date.

The Contractor shall convert red-line drawings to electronic as-builts. Upon completion of the construction of this system, the Contractor shall provide STN with two sets of completed as-built drawings and one copy of these drawings in electronic format. The electronic format shall be agreed to by STN during the design and engineering phase of the project. These must be submitted as a condition of system acceptance and Contractor payment.
SECTION III  PROCUREMENT SPECIFIC REQUIREMENTS

III.1 SUBCONTRACTS

If the Contractor proposes to subcontract any of the work, a detailed scope of services as well as submission of sub-contractor company information, personnel, qualifications, and proof of sufficient insurance must be provided to STN for approval at STN’s sole discretion. Contractor must provide a list of all proposed sub-contractors along with detailed information regarding their financial and technical ability twenty (20) days in advance of commencement of work.

III.2 TIME TO CONSTRUCT

Contractors are required to provide and coordinate project schedules showing expected timeframes for the construction of the fiber optic network identified in this phase. Timeframes will commence upon completion of make-ready. Construction schedules and phasing shall be reviewed and approved by STN or its authorized designees.

III.3 PRICING

The Contractor agrees to provide STN with its best available price for the duration of this Agreement. If the Contractor provides a lower cost to any other customer, which is similarly situated to STN, then STN’s charges must be lowered to a matching or lower rate. Contractor shall provide written detail identifying and comparing such best available price to other pricing that it offers.

Construction values for each segment shall be comprised of the unit pricing provided by the Contractor times the quantities of work identified for each segment or as identified and attached to this Agreement.

III.4 NO PRICE ESCALATION

The Contractor may not increase prices quoted in the Proposal for the term of this Agreement. Any increases in Unit and or other project costs which the Contractor feels are justified will be presented to STN for approval. STN at its sole discretion will approve pricing changes.

III.5 SURCHARGES

Contractor must identify all state and/or federal surcharges, which will be assessed to STN, and the current formula used to calculate each surcharge and include these charges in quoted one-time or monthly recurring rates. STN is exempt from federal, state and local taxes and will provide the Contractor its federal registration number upon contract award.
The attached Unit Pricing Matrix provided in the Proposal located in Exhibit B and subsequent additions to the Unit Pricing Matrix shall be the determination of contract value. Changes and or discrepancies in Unit Pricing or anticipated units on each phase of the project shall be brought to the attention of the project consultants and STN as soon as identified. Upon verification and approval, units will be adjusted as agreed between all parties.

III.6 PAYMENT

Invoices must be submitted to STN within two (2) weeks of the completion of work.

Payment will be made upon the completion of each segment after receipt and approval of verified OTDR test results, Photographic images of completed work (before and after pictures in cases of break/repair) and as-built drawings are received and approved.

Payment will be made upon STN’s, approval.

III.7 NYS DEPT. OF LABOR PREVAILING WAGE RATE SCHEDULES

This Agreement does not require the payment of prevailing wage and supplements.

III.8 FORCE MAJEURE

Neither Party will be liable for losses, defaults or damages which result from delays in performing any or all of the obligations or responsibilities imposed upon it in any contract resulting from this RFP because of acts of God, earthquakes, floods, or other causes beyond the reasonable control of the Party so delayed in, or so unable to perform, provided that such Party was not negligent and shall have used reasonable efforts to avoid and overcome such cause. Such Party will resume full performance of such obligations and responsibilities promptly upon removal of any such cause.

III.9 BOND INSURANCES, PERFORMANCE AND INDEMNIFICATION

Before commencing any of the work provided for herein, Contractor must submit to STN certificates evidencing that insurance of the types and amounts specified herein has been obtained by Contractor. Certificates of Insurance shall name as additionally insured and be provided to Schuyler County, Chemung County, Steuben County, Yates County, Tioga County, Tompkins County, Broome County and STN.

Commercial Umbrella/Excess: Umbrella/excess liability limits of not less than $10,000,000.
Workers Compensation and Employers Liability: New York State Statutory Workers Compensation Coverage and statutory employer’s liability limits as required by the law of any state where work is performed.

A) Where applicable, the Maritime Coverage Endorsement shall be attached to the policy.  
B) Where applicable, the Longshore and Harbor Workers Compensation Act endorsement shall be attached to the policy.  
C) Workers Compensation coverage will be written to include all employees, including all executive officers.

Certificates of insurance acceptable to STN must be filed prior to commencement of the Contractor’s work, additionally this includes any work done by subcontractors. These certificates and the insurance policies required shall contain a provision that coverage afforded under the policies will not be cancelled, changed or allowed to expire until at least 30 days prior written notice has been given to STN. The Contractor must notify both STN and ECC in writing of any policy lapse or material change in these policies within ten (10) days.

In the event that the Contractor fails to obtain or maintain any required insurance, STN may purchase such insurance and back charge the expenses thereof to the Contract amount, or may terminate the contract.

The Contractor must waive all rights of subrogation against STN and their agents, officers, directors and employees for recovery of damages to the extent these damages are covered by Commercial General Liability policy (“CGL”).

No policy will permit cancellation or modification without thirty (30) days prior written notice of cancellation or modification to Contractor.

A Certificate of Insurance acceptable to STN must be provided to STN before commencing work. Attached to each certificate of insurance shall be a copy of the Additional Insured Endorsement that is part of the Contractor’s CGL policy.

Comprehensive General Liability Insurance policy, with contractual, completed operations, explosion, collapse and underground property damage coverages issued to and covering the liability of the Contractor for all work and operations under this Agreement, all obligations assumed by the Contractor under this Contract and all damage to work performed by Sub-Contractors on your behalf. The Contractor shall provide Commercial General Liability insurance to STN and STN shall be named as an additional insured in the policy. The policy shall include cross liability coverage and shall be endorsed to indicate that it is primary coverage. The completed operations coverages shall be maintained for not less than two years after acceptance of the work. The coverage under such policy shall not be less than a combined single limit for Bodily Injury and Property Damage of: $1,000,000 Each Occurrence, $2,000,000 Aggregate per project.
In addition:

A) CGL coverage shall be written on ISO Occurrence form CG00 01 (10/01) or its equivalent and shall cover liability arising from premises and operations, independent contractors, products-completed operations and personal and advertising injury and liability assumed under an insured contract (including the tort liability of another assumed in a business contract).

B) Contractor, Owner and all other parties required by the Contract Documents shall be included as additional insureds on the CGL, using ISO Additional Insured Endorsement CG 20 10 (11/85) or both CG 20 10 (10/01) and CG 20 37 (10/01) or an equivalent coverage to the additional insured. This insurance for the additional insured shall be as broad as the coverage provided for the named insured Subcontractor and shall be primary and non-contributing before any other insurance or self-insurance, including any deductible, maintained by or provided to, the additional insured.

C) There shall be no exclusion or modification of the Subcontractor’s CGL policy for pollution, explosion, collapse, underground property damage, work performed by subcontractors or claims of employees.

D) Subcontractor shall maintain CGL coverage for itself and all additional insureds without interruption for the duration of the project until final acceptance by STN and shall maintain completed operations coverage for itself and each additional insured for at least 2 years after completion and final acceptance of the work.

**Comprehensive Automobile Liability** of at least $1,000,000 combined single limit for bodily injury and property damage.

All such policies shall be written by an insurance company with a Best rating of at least A-VIII. Workers’ Compensation coverage by the New York State Fund is acceptable. The Comprehensive General and Automobile Liability policies shall be endorsed to name STN as an additional named insured. Such certificates shall be delivered to STN prior to the start of any Work.

**Protective Liability Insurance** Issued to and covering the liability of Steuben County, Schuyler County, Chemung County, Yates County, Tioga County, Tompkins County, Broome County, STN, STN’s administrator and all employees both officially and personally, with respect to all operations under this Agreement by the Contractor, its sub-contractors including omissions and supervisory acts, with a single limit of $1,000,000 per occurrence and an aggregate of $2,000,000.

All insurance policies required shall remain in force for the entire life of this Agreement and maintenance period and shall contain a provision to the effect that they will not be canceled or changed, except after thirty (30) days notice to STN.
Indemnification Agreement

To the fullest extent permitted by law, the Contractor shall indemnify, defend and hold harmless STN and its agents and employees from and against liabilities, claims, damages, losses and expenses, including but not limited to attorney’s fees arising out of or resulting from performance of the Contractor’s Work under this contract, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including loss of use resulting there from, but only to the extent caused in whole or in part by any acts or omissions of the Contractor, the Contractor’s sub-contractors, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge or otherwise reduce other rights or obligations of indemnity, which would otherwise exist as to a party or person described in this Agreement.

In claims against any person or entity indemnified under this Agreement by an employee of the Contractor, the Contractor’s sub-contractors, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor, the Contractor’s sub-contractors under workers’ or workmen’s compensation acts, disability benefit acts or other employee benefits acts.

The obligations of the Contractor under this Agreement shall not extend to the liability of STN, its consultants, and agents and employees of any of them arising out of (1) the preparation or approval of maps, drawing, opinions, reports, surveys, change orders, designs or specification, or (2) the giving of or the failure to give directions or instruction by STN, or STN’s consultants, and agents and employees of any of them, provided such giving or failure to give is the primary cause of the injury or damage.
SECTION IV EXECUTION AND TECHNICAL REQUIREMENTS

IV.1 GENERAL

A. Contractor is responsible for project underground and aerial OSP construction, Employee PPE, UFPO notifications, permits, licenses, safety plans, traffic control, soil erosion, backfill and restoration work associated with worked performed under this contract.

- All necessary safety signage, traffic cones, flagman, etc. shall be provided by the Contractor.
- All restoration shall be completed as soon as conduit placing operations are completed in these areas, or at the direction and per the specifications of STN, and NYSDOT representative (“NYS Street Activity”).
- Right-of-way shall be restored to its original or better condition within twenty-four (24) hours or as soon as practical following conduit and cable placing operations. All restoration shall be at the Contractor’s expense.
- Maintain operational existing services.

C. Contractor must comply with OSHA safety regulations, directional boring, aerial construction and the installation, testing and support of complex optical fiber networks.

D. The Contractor shall comply with all manufacturers’ and all STN, NESC, ANSI/TIA/EIA, BICSI, & NEC specifications, recommendations and instructions when installing and testing the optical fiber cabling system and associated components.

E. Contractor must keep work area clean, dispose of all debris from the work area at the end of each workday and upon completion of the work.

F. Contractor shall avoid tree trimming, if possible. If unavoidable, Contract must consult with Town/Municipality Personnel prior to trimming, minimize any approved trimming, promptly remove trimmings from area and consider using tree guard.

G. Contractor must ensure that NESC and/or Pole Owners aerial clearances are maintained from other utilities. Typical clearances are 12” from telephone and or cable TV attached to same side of pole, 6” above or below if attached to opposite side of pole. Also, Contractor shall maintain the required 40” clearance from the electric zone at pole attachment locations and no less than 30” in mid-span. The clearances defined shall be maintained continuous.

H. The work included under this Agreement is considered “turn-key”. For purposes of this Agreement, turn-key refers to furnishing all labor, equipment, materials, supplies and performing all operations necessary to complete the installation of the fiber optic infrastructure in compliance with this Agreement, all drawings, and Corning Total Access Program (“TAP”) requirements. The Contractor must provide (unless STN communicates with Contractor it will provide certain materials or components) and install all of the required material to form a complete fiber optic system including, but not limited to, the following technical specifications:
1. Measurements on drawings are for reference purposes. Contractor is responsible for verifying measurements required for project activity.

2. Place anchor/guy at pole route turns, junctions and dead ends. Contractor is responsible for determining actual placement location for aerial construction, which is subject to STN’s approval at STN’s sole discretion.
   - Screw anchors authorized, 5/8” single eye rod – no more than 12” out of ground.
   - Attachment to anchors provided by others is prohibited.
   - Tree attachments/guys are prohibited.


4. Lashing wire: Shall be span continuous, terminated with lashing wire clamp and spacer at each pole.

5. Cable position below support messenger shall be maintained. Cable wrapped around messenger shall be relashed below messenger.

I. The Contractor shall guarantee that the installation of the completed fiber optic system must be made in accordance with all applicable provisions of OSHA, National Electric Safety Code (“NESC”), Corning SRPs, Telecommunications Industry Practices, National Electric Code (“NEC”), local fire and building codes, and Federal Communications Commission Rules and Regulations.

J. Maintenance/service loops:
   - Aerial maintenance/service loops shall be messenger supported utilizing “snowshoe” type devices, every 1,500’+/-.
   - Termination point maintenance/service loops shall be properly racked and secured.

K. Bend radius of the fiber optic infrastructure must not exceed manufacturer’s (Corning Cable Systems) specifications. Pulling tension on the fiber cable must not exceed manufacturer’s specifications. Any cable damaged or exceeding recommended installation parameters during installation must be replaced by the Contractor prior to STN’s final acceptance and at no cost to STN.

L. Underground or buried construction: The Contractor must place the fiber optic infrastructure in protective innerduct for the entire route. But, if the Contractor determines, and STN agrees, that some portion of the fiber optic infrastructure cannot be placed underground, then Contractor and STN must determine the proper course of action. Any direct buried fiber optic cable will be Corning Cable Systems Armored fiber optic cable. STN will make the final decision. The Contractor must transition from outside plant fiber cable to acceptable building distribution SMF cable (if and where applicable). Any equipment or parts required to provide a complete and operational installation, and not specifically mentioned herein, must be provided by the Contractor without any claim for additional payment.

M. Splices
   All fiber splicing will be fused, which will be accomplished by utilizing an ISO 9001 certified, core-alignment fusion splicing machine with current calibration.
a. OptiSplice Premier M90i Fusion Splicer or STN approved equal.
b. Typical average splice loss is less than 0.02 dB for identical singlemode strands.
c. Splice unit must be automatic core-alignment.
d. Splice loss must visually display splice loss.
e. Splice unit must include a heat-shrink oven.
f. All fusion splices will be heat-shrink sleeve protected.

The Contractor must minimize the number of splices/splice points along the route. All fiber splices must be fusion performed by manufacturer (fiber cable) certified technicians. Splice cases must be sized and installed in accordance with Corning accepted practice.

The Contractor must re-splice, at the Contractor’s sole expense, any splice that exceeds 0.1 dB. If this loss is unattainable after three (3) attempts by the Contractor to make corrections that are within the specifications, then STN will accept the splice, provided the overall end-to-end loss budget is within the required specifications. If the end-to-end loss budget exceeds specifications, the Contractor must replace the fiber cable, at the Contractor’s sole expense, to meet specifications.

N. Terminations

The Contractor must terminate all fibers in vendor-provided, rack-mounted PCH/FDPs with pigtailed connector panels at all locations. Racks and rack space must be made available at each location.

O. Feedback & Best Practices

The Contractor will contact STN OM (and its design contractor) and share any and all suggestions, comments, improvements related to STN’s instructions and practices for constructing and installing fiber, termination, splicing, hardware and related work. The intention of this clause is for STN to become more efficient in its practices and to continue improving the quality and operational effectiveness of its infrastructure.

IV.2 FIBER STRAND IDENTIFICATION

A. Industry standard (TIA/EIA-598), 12 color fiber optic, color code shall be utilized:

- Strand 1) Blue (BL) Buffer tube strands 1-12
- Strand 2) Orange (OR) Buffer tube strands 13-24
- Strand 3) Green (GR) Buffer tube strands 25-36
- Strand 4) Brown (BR) Buffer tube strands 37-48
- Strand 5) Slate (SL) Buffer tube strands 49-60
- Strand 6) White (WH) Buffer tube strands 61-72
- Strand 7) Red (RD) Buffer tube strands 73-84
- Strand 8) Black (BK) Buffer tube strands 85-96
- Strand 9) Yellow (YL) Buffer tube strands 97-108
- Strand 10) Violet (VI) Buffer tube strands 109-120
Strand 11) Rose (RS)  Buffer tube strands 121-132
Strand 12) Aqua (AQ)  Buffer tube strands 125-144

B. Industry standard, 12 strand fiber buffer tubes shall be utilized.

**Fiber Strand Splicing:**
A. All splices must be performed by manufacturer (fiber cable) certified technicians.
B. All fiber splices must be fusion.
C. All fiber terminations must be fusion splice pigtailed APC (angled physical contact) SC/LC connectors to maintain the lowest possible reflectance value.

**Fiber Strand Testing:**
A. Single mode fiber testing must meet manufacturer requirements for Extended Warranty certification of fiber installed with this project. Test set-up and performance must be conducted in accordance with TIA/TSB-140 Tier 2 & ANSI/TIA/EIA-526-7.
B. The manufacturers test sheets provided with each reel shall be included in the project documentation manuals.
C. The fiber optic infrastructure shall be tested on-the-reel prior to installation but after delivery to the installer. The use of an OTDR per Corning Cable Systems Testing and Documentation procedures will be acceptable for this test. The test results for each fiber and each reel shall be provided to STN OM prior to the installation of the cable. Hardcopy test results shall be included in the project documentation manuals.
D. During fusion splice activity, splice loss information (from splice unit) must be recorded.
E. Typical average splice loss is less than 0.02 dB for identical singlemode strands.
F. Splice loss greater than 0.1 dB shall be corrected to less than 0.1 dB.
G. Two correction attempts shall be made and noted.
H. Splice loss exceeding 0.1 dB shall be identified as OOS (“Out-of-Spec”).
I. After cable placement, splicing and terminating, end-to-end (FDP port-to-port) testing shall be accomplished and documented.
J. Single mode backbone links shall be tested at 1310 nm and 1550 nm in accordance with TIA TSB-140 Tier 2.
K. TIA TSB-140 Tier 2 testing includes Tier 1 (light source & power meter) and OTDR trace.
L. Tier 2 OTDR tests shall utilize launch and receive fiber (such as Fluke NFK3-Launch) to capture loss of first and last connector.
M. OSP Optical fiber links shall be tested in at least one direction at both operating wavelengths (1310 nm and 1550 nm) to account for attenuation deltas associated with wavelength.
IV.3 TECHNICAL SPECIFICATION

MANUFACTURERS

All fiber optic components such as cables, connectors, splice trays, splice closures and associated hardware shall be approved by Corning Cable Systems for use with the Corning Cable Systems. Notify STN OM immediately if any discrepancy is discovered between STN requirements /material listed in this specification.

MATERIALS

Anchors, Anchor Rod & Guy Guard

1. Screw Anchor: Design make: Josyln
3. Guy Guard: Bright yellow for increased visibility (8’). Design make: Endot, Endoguard

Note: Each guy placed shall receive a guy guard.

Pole-Line Hardware

2. 3 Bolt Suspension Clamp: Design make: Josylm, or approved substitute.
4. Guy-Grip Dead-Ends: Design make: Preformed Line Products
5. Strandvise: Reliable Power Products
6. Bolts, Misc Hardware: Design make: Josylm, or approved substitute.

Underground Duct

1. 4” schedule 80 PVC suitable for use with directional boring equipment with 1250 lb polyester rope.
2. 1 ¼” toneable innerduct schedule 40 duct with 1250 lb polyester rope
3. 1 ¼” innerduct schedule 40 duct with 1250 lb polyester rope

Cable, Steel Guard

1. Hot dipped galvanized used to protect cable at riser locations (“U Guard”). Design make: Josyln, or approved substitute.

Optical Fiber Backbone Cable

1. ALTOS All-Dielectric Loose Tube 28e “Full-Spectrum” Singlemode optical fiber cable. Design make: Corning Cable Systems fiber optic cable only.
- SMF wavelength (nm): 1310/1383/1550
- Maximum Attenuation (dB/km): 0.4/0.4/0.3
- “Full-Spectrum” G.652.D
- Gel-Free

**Aerial Splice Closures**
1. Corning Splice Closure, or Tyco, sized appropriate, and approved for use with Corning Cable Systems.

**Heat-shrink End Cap**
1. Black, pressure and damp-proof sealing of unterminated optical fiber cable.

**Tree Guard**
1. Protects cable from abrasion by tree limbs. Design make: Hendrix, Line-Duc

**IV.4 LABELING, DOCUMENTATION & ACCEPTANCE**

The Contractor must label, IAW ANSI/TIA/EIA-606 with machine generated labels, fiber cables and terminated strands with the assignments provided by STN prior to completing the installation. Contractor shall supply and place “STN Fiber Optic Cable, with STN’s Emergency # 855-935-5050” identification labels, at minimum, on every OSP aerial pole attachment point and each underground point of exposed sheath. Contractor will provide photographic evidence of the work completed.

Upon completion of the installation, the fiber optic infrastructure will be subjected to a thirty (30) consecutive day operational test to determine its reliability. The Contractor must certify in writing to STN that the installation is complete, all documentation is provided and the facility is ready for performance testing. If the results of this operational test are acceptable to STN and all documentation has been provided, STN will accept the system and authorize payment. If the system fails to perform at 100% capacity for thirty (30) consecutive days, the Contractor will resolve the problem(s) and start the test again beginning with day one. The Contractor will be given a 60-day period in which to successfully complete a thirty (30) consecutive day test. A Corning TAP Certificate identifying 25-year extended warranty is required for acceptance.

**IV.5 WARRANTY OF THE FIBER OPTIC INFRASTRUCTURE**

A Corning TAP Certificate identifying 25-year extended warranty is required for acceptance. The Contractor must warranty all materials, labor, installation and workmanship for the first sixty (60) months following acceptance at no cost to STN. If a fiber or connection fails to perform during this period, the Contractor must resolve the problem at the Contractor’s sole expense, except when the fiber cable or service is disrupted by a significant outage not
directly attributed to the installation or workmanship. Examples of these exceptions are fiber cuts/breaks caused by another party, failure of the conduit system, or fire. In these cases, the selected contractor will be called and requested to restore service on a Time and Materials (“T&M”) basis.

IV.6 TROUBLE REPORTING

The Contractor shall provide STN access to the Contractor’s trouble reporting system twenty-four (24) hours a day, seven (7) days a week. The Contractor shall provide a single point of contact for trouble handling. The Contractor shall be able to receive trouble reports on-line (e.g., via a computer network), telephone, electronic mail, or facsimile. All trouble reporting calls shall be toll free. STN prefers web access to the Contractor’s trouble reporting system.

Additionally, the Contractor shall be responsible for:

(a) Centralized trouble reporting;
(b) Determining the cause of troubles;
(c) Correcting troubles;
(d) Working cooperatively with other contractors and STN’s designated representatives to resolve problems;
(e) Maintaining audit trails of trouble resolution activities;
(f) Responding to inquiries on trouble resolution status;
(g) Providing monthly and quarterly trend analysis and sorting of trouble reports and administrative reporting;
(h) Providing trouble escalation for normal and emergency events; and
(i) Monitoring trouble report management and escalation procedures.

IV.7 ESCALATION PROCEDURES

The Contractor shall provide an escalation procedure, including contact names and titles with appropriate time intervals and point(s) of contact for unresolved service problems.

IV.8 MAINTENANCE OF THE FIBER OPTIC INFRASTRUCTURE

STN intends to award the selected Contractor(s) a three-year or five-year maintenance contract with the first five years of maintenance service under warranty. Warranty work will be determined as work that is directly related to the materials and workmanship of the installation of the fiber. Service work will be defined as work that is performed as a result of fiber testing and or damage as a result of influences outside the control of the Contractor determined at STN’s sole option and discretion. STN may extend the maintenance contract with the selected Contractor for five additional one-year terms for a total of ten (10) years.
The Contractor is expected to maintain the fiber optic infrastructure on a 24x7x365 basis through their Network Operations Center (“NOC”). Since the Contractor is providing dark fiber and no electronics, it is unlikely the NOC will have real-time access to monitor and maintain these facilities or have remote alarm, diagnostics, and management capability of them. NOC personnel and Contractor-dispatched technicians are required to work in harmony with the STN’s OM representative to provide a timely response and restoration. The awarded contractor will provide STN with the telephone number of its NOC and an escalation list, which shall include names, titles and 24x7 reach numbers.

Preventive and routine maintenance must be performed at scheduled and mutually agreeable times so that the STN and subsequent customers experiences no disruption of service. The Contractor must coordinate all PM work along with frequency and duration of Preventive Maintenance (“PM”) required through STN OM and Customer Relations Manager. PM shall be performed according to a schedule which is approved by STN. Any PM which would impact system availability must be identified not less than five (5) business days in advance by the Contractor. The Contractor must perform bi-directional tests on identified spare fibers and provide these results to STN as requested on an annual basis.

Emergency and/or Remedial Maintenance shall be performed upon notification to the Contractor that the facility is inoperable or unsuitable for use. STN will make every reasonable effort to diagnose and remedy or determine the root cause of the trouble before contacting the Contractor’s NOC for dispatch. The Contractor must respond on-site to an outage within two (2) hours of the original trouble being reported. The above response limitation includes travel time. Emergency/Remedial maintenance must be available 24 hours per day, 7 days per week, and 365 days per year.

Emergency repairs, such as those cited in the above warranty provision, will be directed to the awarded Contractor for resolution. The Contractor is expected to bill STN for these repairs on a T&M basis using the RFP rates included in Exhibit C. . STN does not expect or desire for Contractors to build these unforeseen repairs into the vendors’ quoted monthly maintenance schedule.

Monthly maintenance, including the first five (5) years warranty, is to be all-inclusive. This extends to the Contractor’s immediate expenses for performing the aforementioned service as well as those soft expenses incurred as a result of this Agreement (i.e., UFPO).

The Contractor is responsible for maintaining an inventory of all essential spare parts at the Contractor’s facility. Spare parts inventory (including Corning Cable Systems fiber optic cable 12, 24, 96, 144, and 288 strands) is to be reserved for STN and the timely restoration of service from any outages associated with this contracted service.

IV.9 FAILURE TO RESPOND TO OUTAGE
In the event of an outage, STN mandates that the Contractor respond on-site within two (2) hours and that Contractor restore service within four (4) hours upon receipt or notification of an outage.
Failure to meet these response criteria will result in the following penalties:

<table>
<thead>
<tr>
<th>Penalties for Failure to Respond to Outages</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5 Hours or any part thereof Delay</td>
</tr>
<tr>
<td>4.5-5 Hours Delay</td>
</tr>
<tr>
<td>Over 5 Hours Delay</td>
</tr>
<tr>
<td>Over 8 Hours Delay</td>
</tr>
</tbody>
</table>
*Any partial hours will be rounded up to the next full hour

At its sole discretion STN may waive any penalties based upon precipitating events such as: catastrophic failure, multiple simultaneous failures and/or best effort to ensure service.

**IV.10 SHOP DRAWINGS AND SUBMITTALS**

The Contractor shall furnish to STN, for STN’s review and approval, three (3) sets of illustrations, equipment specifications, shop drawings and engineering data sheets on all equipment proposed to be furnished and installed within thirty (30) days of the Effective Date of this Agreement. Not sure this applies. These will be promptly reviewed by STN and one (1) set will be returned to the Contractor. Each submittal will be stamped “Approved as submitted”, “Approved as noted”, “Returned for correction”, or “Revise as noted and resubmit”. In the case of the latter two categories, the submittal shall either be corrected or revised as indicated and three (3) sets returned for review. No installation work shall be started by the Contractor prior to obtaining the approval of these submittals. Articles so submitted shall be understood to be offered by the Contractor as fulfilling all the requirements of this Agreement, and no approval given by STN shall relieve the Contractor from compliance with the general terms of the specifications with regard to the articles so approved.

**IV.11 BUILD PRACTICES/STANDARDS**

Contractors are required to be in full compliance with the following minimum practices/standards:

- National Electric Code (NEC), latest edition
- ANSI/TIA/EIA-758 STN Owned Outside Plant Telecommunications Cabling Standard
- Corning Cable Systems – SRPs (Available on-line @ no cost)
  - SRP-005-010 (Lashed Aerial), latest edition
  - SRP-005-011 (Duct), latest edition
  - SRP-005-012 (Buried), latest edition
  - SRP-005-014 (Intrabuilding), latest edition
- LDC SOP 04, Splicing, Testing Acceptance
- AT&T Outside Plant Engineering Handbook
IV.12 FACILITY REGISTRATION/PROTECTION

All facilities must be registered and protected by the UFPO and identified to other applicable “Call Before You Dig” services. The Contractor is responsible for the cost of ensuring this service is provided and maintained over the term of this Agreement.
IN WITNESS WHEREOF, the Parties have caused this Construction Agreement to be executed by their fully authorized representatives to be effective as of the date signed.

Contractor
By: __________________________
Name: _________________________
Title: _________________________
Date: _________________________

On this ___ day of __________, 2018 before me the undersigned, a Notary Public in and for said State, personally appeared ________________________, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signatures(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

______________________________
Notary Public

Southern Tier Network
By: __________________________
Name: _________________________
Title: _________________________
Date: _________________________

On this ___ day of __________, 2018 before me the undersigned, a Notary Public in and for said State, personally appeared ________________________, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signatures(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

______________________________
Notary Public