

WESTMINSTER, MARYLAND

REQUEST FOR BIDS

for

**Fiber-to-the-Premises
Pilot Network Construction**

CONTRACT NO. R-265-C

Mayor and Common Council

Kevin R. Utz, Mayor
Dennis Frazier
Paul Whitson

Dr. Robert Wack, President
Tony Chiavacci
Suzanne P. Albert

City Attorney

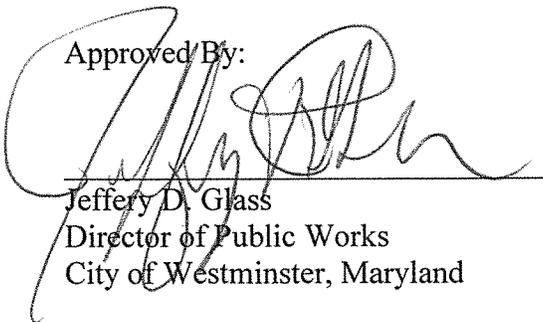
Elissa Levan

Director of Public Works

Jeffery D. Glass

June 4, 2014

Approved By:



Jeffery D. Glass
Director of Public Works
City of Westminster, Maryland

ADVERTISEMENT FOR BIDS

CITY OF WESTMINSTER

Fiber-to-the-Premises Pilot Network Construction City Project No. R-265-C

Sealed bids for City Project No. R-265-C, Fiber-to-the-Premises, Pilot Network Construction (the "Project") will be received by **The Mayor and Common Council of Westminster at the Department of Public Works, 56 West Main Street, Westminster, Maryland, 21157 until 2:00 P.M., July 15, 2014**, at which time they will be publicly opened and read aloud at the same address in the 2nd floor meeting room.

Copies of the Contract Specifications may be purchased at the City Offices at 56 W. Main Street, Westminster, Maryland 21157, on or after **June 6, 2014** upon payment of **\$50.00 per set**. The cost to mail the Contract Documents is **\$15.00**. Make checks payable to the Mayor and Common Council of the City of Westminster. **NO REFUNDS** will be made for purchase of the Contract Specifications.

The City reserves the right to reject any or all bids or portions thereof and to reduce the scope of the Project, where in the City's sole and absolute discretion, such action would be to the best advantage of the City. The City further reserves the right to waive technical defects in the bids and to accept the bid which, in the judgment of the City, is in its best interest.

A bid security in the amount of five (5) percent of the total amount of the bid in the form of a bid bond, bank draft, cashier's check or certified check made payable to the City of Westminster, Maryland shall accompany the bid. Performance and Payment bonds will be required.

The City encourages certified minority, women and disabled business owners to submit a bid.

A mandatory Pre-Bid conference will be conducted at **10:00 A.M., June, 17, 2014** at Westminster City Hall (1838 Emerald Hill Lane, Westminster, MD 21157). **Bidder attendance is mandatory**. Bids submitted by vendors who were not in attendance at the specified mandatory pre-bid meeting will be rejected.

All questions pertaining to the legal aspects of the bid should be directed in writing to Michael Matov, City of Westminster, E-mail: mmatov@westgov.com. The closing time for questions is: **3:00 P.M., July 7, 2014**. **Written responses to the questions submitted will be issued by the City no later than 10:00 A.M. on July 11, 2014.**

All questions pertaining to the technical aspects of this bid shall be directed in writing to Matthew DeHaven, CTC Technology and Energy, E-mail: mdehaven@ctcnet.us. The closing time for questions is: **3:00 P.M., July 7, 2014**. **Written responses to the questions submitted will be issued by the City no later than 10:00 A.M. on July 11, 2014.**

INFORMATION FOR BIDDERS

Bids will be received by the Mayor and Common Council of Westminster until 2:00 P.M., July 15, 2014, at which time they will be publicly opened and read at 56 W. Main Street, 2nd Floor, Westminster, MD 21157. Bids, when filed, shall be irrevocable.

FAMILIARITY WITH PROPOSED WORK

Bidders are required to examine carefully the specifications and to make a personal examination of the locations and nature of the proposed work. In case doubt shall arise as to the meaning or intent of anything in the specifications, inquiry should be made of the City before a bid is submitted. The submission of a bid shall be prima-facie evidence that the bidder thoroughly understands the terms of the specifications. Bidders are assumed to have made themselves familiar with all Federal and State Laws, local laws, ordinances, and regulations which in any manner affect the work or its prosecution.

PREPARATION AND DELIVERY OF BID

Bids shall be made on the blank bid forms provided in this specification. Each bidder shall state in the spaces provided, without interlineations, alternations, or erasures, a lump sum price and unit prices written in ink in words and figures for performing the work included in this contract.

Bids shall be submitted in a sealed envelope labeled **Fiber-to-the Premises Pilot Network Construction R-265-C**. Bids forwarded by mail shall be sent to the Mayor and Common Council of Westminster enclosed in a sealed envelope, which is itself enclosed in a second sealed envelope and must be delivered to City Offices at 56 W. Main Street, Westminster MD 21157 before the time and date specified for the receipt of Bids.

REQUIRED ATTACHMENTS TO BIDS

Each Bid shall be accompanied by the following which are attached herewith:

- a. Notarized affidavit (non-collusion oath) executed by the Bidder, or, if the Bidder is a corporation, executed by a duly authorized representative. Of the corporation.
- b. Vendor responsibility form.
- c. Equal Employment Opportunity form.
- d. Bid Bond or certified check.

SIGNATURE

Bid must be signed by the bidder with his signature in full. Post office address, county, and state of the bidder must be written or printed in full after the signature, and such address is the one, in the absence of written directions to the contrary, to which notice of award of the contract may be mailed or delivered, but the said notice may be served on the bidder or any agent of the bidder. Owing to the difficulty in deciphering signatures, a typewritten copy of same should be attached.

When a firm is a bidder, the agent who signs the firm's name to the bid shall state in addition, the names of the individuals composing the firm. When a corporation is the bidder, the person signing shall state under the laws of which state the corporation is chartered and the name and title of officer having authority under the by-laws to sign contracts. The bid shall also bear the seal of the corporation, attested by its Secretary. Anyone signing the bid as agent must file with it legal evidence of his authority to do so.

WITHDRAWAL OF BID

No bid may be withdrawn within ninety (90) days after the opening thereof.

ESTIMATED QUANTITIES

Any estimates of quantities herein furnished by the Engineer are approximate only; and have been used by the Engineer as a basis for estimating the cost of work and will also be used for the purpose of tabulating and comparing the bids and awarding the Contract. The Engineer has endeavored to estimate those quantities correctly according to his knowledge and the information shown on the plans, but neither the City nor the engineer guarantee that these estimated quantities are accurate, and if the Contractor, in making up and/or submitting its bid or bids, relies upon the accuracy of such estimated quantities it does so at its own risk.

INTERPRETATION BY ADDENDUM

If any person contemplating submitting a bid for the proposed contract is in doubt as to the true meaning of any part of the specifications, or other proposed contract specifications, inquiry must be made of the City in writing at least five (5) working days before the opening of bids. Any interpretation of the contract specifications may be made only by the City by Addendum duly issued and a copy of such Addendum will be mailed or delivered to each person receiving a set of the contract specifications. The City will not be responsible for any other explanation or interpretations of the contract documents. All addenda must be fastened to the inside cover of the submitted bid.

OPENING OF BIDS

Bids will be received until the date and time stated. No responsibility will be attached to the City for the premature opening of a bid not properly addressed and identified. Bids will be opened at the time and date set forth herein. Bidders or their authorized agents are invited but are not required to be present.

IRREGULAR BIDS

Bids made on any other than the Bid form furnished by the City will not be considered. Changes in phraseology of the Request for Bids, additions, modifications, or limiting provisions, will render the bid informal and may cause its rejection.

COMPETENCY OF BIDDERS

The City reserves the right to request additional information or clarifications from proposers or to allow corrections of errors or omissions. The City may make such investigation as it deems necessary to determine the ability of the bidder to furnish the services. The City may require the bidder to present satisfactory evidence that it has sufficient experience, necessary capital, materials, machinery and skilled workmen to complete the contract. All financial statements that may be requested by the City shall be of such date as the City shall determine and shall be prepared on a form furnished by the City and shall be sworn to before a Notary Public. The City will use the foregoing information, if required, as an aid to determining the lowest responsible bidder. Nothing contained in this section shall be construed as depriving the City of its discretion in the matter of determining the lowest responsible bidder. Each bidder must be prepared to complete the work on or before the date stated in the bid. The City reserves the right to reject any bid if the evidence submitted by the Bidder or an investigation of such Bidder fails to satisfy the City that such Bidder is properly qualified to carry out the obligations of the contract.

DISQUALIFICATION OF BIDDERS

More than one bid from an individual, a firm or partnership, a corporation, or an association under the same or different names will not be considered on any given contract. Reasonable ground for believing that any bidder is interested as a principal in more than one bid for the work contemplated may cause rejection of the bid.

RIGHT TO REJECT BIDS

The City reserves the right to waive informalities, to reject any or all bid bids, to accept any bid in whole or in part, to advertise for new bids, to proceed to do the work otherwise or to defer or abandon the work, as the interests of the City may require

AWARD OF CONTRACT

As soon as practicable after opening the bids, the contract will be awarded by the City at its discretion to the lowest most responsive and responsible bidder or the bids may be rejected as herein before provided.

EXECUTION OF CONTRACT

The bidder to whom the contract has been awarded shall return the prescribed number of copies of the contract, properly executed, to the office of the City within ten (10) days after they have been sent for execution. No bid shall be considered binding upon the City until the contract has been awarded by action of The Mayor and Common Council of the City of Westminster and the successful bidder has executed and returned the contract to the City.

FAILURE TO EXECUTE CONTRACT

Failure of the successful bidder to execute and deliver the contract within ten (10) days as specified shall, in the City's discretion, be cause for cancellation of the award. In the event of the cancellation of the award of the contract, the certified check or bid bond accompanying the bid shall be forfeited to the City as liquidated damages.

In the event the award to the successful bidder is cancelled, the award may then be made to the second lowest most responsive and responsible bidder, and such bidder shall fulfill every stipulation embraced herein as if he were the original party to whom the award was made; or the City may reject all of the bids, as its interest may require.

LEGAL ADDRESS

The address given in the bid is hereby designated as the legal address of the Contractor. Such address may be changed at any time by notice in writing delivered to the City. The delivering at such legal address or the depositing in any post office, in a postpaid, registered wrapper, directed to the above named address of any notice, letter, or other communication to the Contractor shall be deemed to be a legal and sufficient service upon the Contractor.

BID PROPOSAL

FOR

THE CITY OF WESTMINSTER

CONTRACT NO. R-265-C

TO: THE MAYOR AND COMMON COUNCIL OF WESTMINSTER, DEPARTMENT OF PUBLIC WORKS, WESTMINSTER, MARYLAND

FOR: **Fiber-to-the Premises Pilot Network Construction**

Opening of bids: _____

Work shall commence within **Ten (10)** calendar days of the date of the Notice to Proceed.
Work shall be completed within **One-Hundred and Eighty (180) Calendar Days of the Notice to Proceed.**

Liquidated damages: One Hundred Dollars (\$100.00) per day of default.

Council:

This Bid, is made this _____ day of _____, 2014, by

Business Address _____.

The bidder declares that the only person, firm or corporation, or persons, firms or corporations, that has or have any interest in this bid, or in the contract or contracts proposed to be taken, is or are the undersigned; that this bid is made without any connection or collusion with any person, firm or corporation making a bid for the same work; that the attached specifications and form of contract, to which is referred therein, have been carefully examined and are understood; that such careful examination has been made as is necessary to become informed as to the character and extent of the work required; that a representative of the undersigned entity attended the mandatory pre-bid conference and that it proposes and agrees, if the bid is accepted, to contract with the City of Westminster, in the form of contract hereto attached, to do the required work in the manner set forth in the specifications and as shown by the contract drawings.

The undersigned proposes to furnish all materials and labor, requisite and proper, and to provide all necessary machinery, tools, apparatus, and means for performing the work, and the doing of all the above-mentioned work, in the manner set forth, described, and shown in the specifications and within the time shown on the bid for the following lump sums and/or unit prices: See Attached Bid Sheet.

It is further understood and agreed that all work in the specifications required to make a complete and workable installation is included in the total prices bid for the various items of work and that the absence from the bid form of specific bid items for any work shown on the contract drawings or included in the specifications is understood as meaning that the cost of any such work contemplated by the contract drawings and the specifications must be and has been included in the total prices bid.

The undersigned understands and agrees that there shall be no additional compensation for anything furnished or done except for such extra work as shall be required by written order of the City.

If this bid is accepted by the City and the undersigned shall refuse or neglect, within 10 days after receiving the contract for execution, to execute the same and to give the stipulated bonds, then the City of Westminster may, at its option, determine that the bidder has abandoned the contract, and thereupon the bid and the acceptance thereof shall be null and void, and the deposit accompanying the bid shall be forfeited to and become the property of the City.

Bids once submitted may not be withdrawn for a period of ninety (90) days after the date of opening the bids.

The Bidder or Bidders must sign here, and the address of each must be given. In the case of firms, the firm's name must be signed and subscribed to by at least one member. In the case of corporations, the corporate name must be signed by some authorized officer or agent thereof, who shall also subscribe his name and office. The seal of the corporation shall be affixed and duly attested by its secretary or other authorized officer.

Bidder, Firm or Corporate Name

Address

ATTEST:

Signature

Title

Date

By _____ (SEAL)

Bidder, Firm Member or
Corporate Officer Signature

Title _____

EXPERIENCE RECORD (Cont.)

Has the bidder, under its present name or any predecessor in interest, or any entity in which any of its principals has or had an interest of 10% or more ever defaulted on a construction project?

Yes _____ No _____

If yes, give Name of Owner, Name of Bonding Company and circumstance:

Contractor

By: _____

Title: _____

Date: _____

CITY OF WESTMINSTER

Fiber-to-the-Premises Pilot Network Construction

CONTRACT NO. R-265-C

BID FORM

BASE BID

Bid Item #	Description	Unit	Estimated Quantity	Price	Extended Price
Underground Conduit and Cable Installation (Contract Specifications Part 3, Section 3.1)					
1	Installation of Ground Rod	EA	175		
2a-1.25	Installation of Conduit using Directional Boring, 1.25-inch SDR 11	FT	0		
2a-2	Installation of Conduit using Directional Boring, 2-inch SDR 11	FT	41,502		
2a-4	Installation of Conduit using Directional Boring, 4-inch SDR 11	FT	0		
2b-1.25	Installation of Conduit Under Existing Pavement - Open Cut, 1.25-inch SDR 11	FT	0		
2b-2	Installation of Conduit Under Existing Pavement - Open Cut, 2-inch SDR 11	FT	0		
2b-4	Installation of Conduit Under Existing Pavement - Open Cut, 4-inch SDR 11	FT	0		
2c-1.25	Installation of Conduit in Unpaved Right-of-Way - Trench, 1.25-inch SDR 11	FT	0		
2c-2	Installation of Conduit in Unpaved Right-of-Way - Trench, 2-inch SDR 11	FT	0		
2c-4	Installation of Conduit in Unpaved Right-of-Way - Trench, 4-inch SDR-11	FT	0		
3a-1.25	Installation of Additional Conduit - Directional Boring, 1.25-inch SDR 11	FT	0		
3a-2	Installation of Additional Conduit - Directional Boring, 2-inch SDR 11	FT	41,502		
3b-1.25	Installation of Additional Conduit - Open Cut, 1.25-inch SDR 11	FT	0		
3b-2	Installation of Additional Conduit - Open Cut, 2-inch SDR 11	FT	0		
3c-1.25	Installation of Additional Conduit - Open Trench, 1.25-inch SDR 11	FT	0		
3c-2	Installation of Additional Conduit - Open Trench, 2-inch SDR 11	FT	0		
4	Installation of Innerduct in Conduit, 1.25-inch corrugated HDPE	FT	0		

Bid Item #	Description	Unit	Estimated Quantity	Price	Extended Price
5a	Installation of Type 1 Handhole – HS-20, 24" x 36" x 36"	EA	2		
5b	Installation of Type 2 Handhole – Tier 22, 24" x 36" x 36"	EA	101		
5c	Installation of Type 3 Handhole – Tier 22, 11" x 18" x 18"	EA	12		
5d	Installation of Type 4 Handhole - Tier 22, 16" x 22" x 18"	EA	60		
6a	Fiber Optic Cable Placement, 12-strand, loose buffer tube, outdoor	FT	0		
6b	Fiber Optic Cable Placement, 12-strand, loose buffer tube, plenum-rated	FT	0		
6c	Fiber Optic Cable Placement, 24-strand, loose buffer tube, outdoor	FT	0		
6d	Fiber Optic Cable Placement, 48-strand, loose buffer tube, outdoor	FT	0		
6e	Fiber Optic Cable Placement, 144-strand, ribbon, outdoor	FT	13,373		
6f	Fiber Optic Cable Placement, 288-strand, ribbon, outdoor	FT	21,077		
7	Removal of Fiber Optic Cable from Conduit	FT	0		
Fiber Splicing and Testing (Contract Specifications Part 3, Section 3.2)					
8	Installation of Straight-Through Splice Enclosure, 288-strand capacity, mass-fussion splice	EA	2		
9a	Installation of Mid-sheath Splice Enclosure (Ring Cut), 72-strand capacity, single splice	EA	18		
9b	Installation of Mid-sheath Splice Enclosure (Ring Cut), 144-strand capacity, single splice	EA	3		
10	Fiber Splicing, Individual Strand (per strand)	EA	1382		
11	Mass Fusion Splices (per ribbon)	EA	12		
12	OTDR Testing of Un-terminated Backbone Cable (per strand)	EA	288		
13	OTDR Testing of Un-terminated Lateral Cable (per strand)	EA	0		
14	Final Acceptance testing of Terminated cable (per strand)	EA	1440		
Fiber Termination and Inside Plant Construction (Contract Specifications Part 3, Section 3.3)					
15	Installation of Backbone Termination Panel, 288-strands	EA	5		
16	Installation of Innerduct, 1.25-inch corrugated HDPE, plenum-rated	EA	0		
17	Installation of Outdoor Equipment Cabinet, Calix ODC-1000E, or equivalent	EA	1		

Bid Item #	Description	Unit	Estimated Quantity	Price	Extended Price
18	Installation of Equipment Shelter, 10' x 12'	EA	1		
19a	Fiber Tap Assembly, 4-port, 100 foot stub	EA	0		
19b	Fiber Tap Assembly, 4-port, 200 foot stub	EA	3		
19c	Fiber Tap Assembly, 4-port, 300 foot stub	EA	2		
19d	Fiber Tap Assembly, 4-port, 400 foot stub	EA	2		
19e	Fiber Tap Assembly, 4-port, 500 foot stub	EA	0		
19f	Fiber Tap Assembly, 4-port, 600 foot stub	EA	1		
19g	Fiber Tap Assembly, 4-port, 800 foot stub	EA	3		
19h	Fiber Tap Assembly, 6-port, 100 foot stub	EA	3		
19i	Fiber Tap Assembly, 6-port, 200 foot stub	EA	3		
19j	Fiber Tap Assembly, 6-port, 300 foot stub	EA	4		
19k	Fiber Tap Assembly, 6-port, 400 foot stub	EA	2		
19l	Fiber Tap Assembly, 6-port, 500 foot stub	EA	3		
19m	Fiber Tap Assembly, 6-port, 600 foot stub	EA	1		
19n	Fiber Tap Assembly, 6-port, 700 foot stub	EA	1		
19o	Fiber Tap Assembly, 8-port, 100 foot stub	EA	1		
19p	Fiber Tap Assembly, 8-port, 200 foot stub	EA	0		
19q	Fiber Tap Assembly, 8-port, 300 foot stub	EA	1		
19r	Fiber Tap Assembly, 8-port, 400 foot stub	EA	1		
19s	Fiber Tap Assembly, 8-port, 500 foot stub	EA	1		
19t	Fiber Tap Assembly, 8-port, 600 foot stub	EA	1		
19u	Fiber Tap Assembly, 8-port, 700 foot stub	EA	1		
19v	Fiber Tap Assembly, 12-port, 200 foot stub	EA	0		
19w	Fiber Tap Assembly, 12-port, 300 foot stub	EA	0		
19x	Fiber Tap Assembly, 12-port, 400 foot stub	EA	2		
19y	Fiber Tap Assembly, 12-port, 600 foot stub	EA	0		
19z	Fiber Tap Assembly, 12-port, 800 foot stub	EA	1		

Bid Item #	Description	Unit	Estimated Quantity	Price	Extended Price
Additional Items <i>(List any proposed line items required to complete the scope of work not included in pricing above)</i>					

TOTAL BASE BID PRICE: \$ _____
(figures)

ADD ALTERNATE ITEMS

ITEM A: Business Park Service Laterals

Bid Item #	Description	Unit	Estimated Quantity	Price	Extended Price
Underground Conduit and Cable Installation (Contract Specifications Part 3, Section 3.1)					
2a-2	Installation of Conduit using Directional Boring, 2-inch SDR 11	FT	11,445		
6a	Fiber Optic Cable Placement, 12-strand, loose buffer tube, outdoor	FT	19,496		
6b	Fiber Optic Cable Placement, 12-strand, loose buffer tube, plenum-rated	FT	0		
6c	Fiber Optic Cable Placement, 24-strand, loose buffer tube, outdoor	FT	7,766		
6d	Fiber Optic Cable Placement, 48-strand, loose buffer tube, outdoor	FT	4,794		
Fiber Splicing and Testing (Contract Specifications Part 3, Section 3.2)					
10	Fiber Splicing, Individual Strand (per strand)	EA	432		
14	Final Acceptance testing of Terminated cable (per strand)	EA	432		
Fiber Termination and Inside Plant Construction (Contract Specifications Part 3, Section 3.3)					
16	Installation of Innerduct, 1.25-inch corrugated HDPE, plenum-rated	EA	2500		
20a	Lateral Termination Panel, rack-mount, 12-strands	EA	16		
20b	Lateral Termination Panel, wall-mount, 12-strands	EA	15		
20c	Lateral Termination Panel, rack-mount, 24-strands	EA	14		
Additional Items (List any proposed line items required to complete the scope of work not included in pricing above)					

TOTAL ADD ALTERNATE ITEM A PRICE: \$ _____ (figures)

ITEM B: Residential Service Drops

Bid Item #	Description	Unit	Estimated Quantity	Price	Extended Price
Underground Conduit and Cable Installation (Contract Specifications Part 3, Section 3.1)					
2c-1.25	Installation of Conduit in Unpaved Right-of-Way - Trench, 1.25-inch SDR 11	FT	8100		
Fiber Termination and Inside Plant Construction (Contract Specifications Part 3, Section 3.3)					
21a	Installation of Individual FTTP Service Drop Cable, SC-APC, 250 foot	EA	80		
21b	Installation of Individual FTTP Service Drop Cable, SC-APC, 500 foot	EA	28		
Additional Items (List any proposed line items required to complete the scope of work not included in pricing above)					

TOTAL ADD ALTERNATE ITEM B PRICE: \$ _____
(figures)

PROJECT TOTAL BID

(Total BASE BID + ADD ALTERNATE ITEM A + ADD ALTERNATE ITEM B Price):

\$ _____

BIDDER: _____

ADDRESS: _____

PHONE: _____

FAX: _____

SIGNATURE

DATE

PRINTED NAME

AGREEMENT

THIS AGREEMENT is entered into this ____ day of _____, 2014 by and between the Mayor and Common Council of Westminster, Maryland, a municipal corporation of the State of Maryland (“City”), with its principal offices at 56 W. Main Street, Westminster, Maryland 21157, and _____, a _____ corporation, whose principal place of business is located at _____.

In consideration of the mutual covenants and obligations contained herein, the sufficiency of which is hereby acknowledged, the City and the Contractor hereby agree as follows:

1. Services: The Contractor shall provide the following services for the City: **Fiber-to-the-Premises Pilot Network Construction.**

The Contractor hereby covenants and agrees to perform the Services in strict conformity with the Contract Documents listed below which are attached hereto as Appendix “A” and incorporated herein by reference:

- (1) Information for Bidders
- (2) Bid Proposal
- (3) Notice of Award
- (4) Notice to Proceed (when issued)
- (5) Certificate of Liability Insurance
- (6) Performance Bond
- (7) Labor and Material Payment Bond
- (9) Vendor Responsibility Form
- (10) Statement Under Oath
- (11) Equal Employment Opportunity Form
- (12) Contract Specifications Part 1 - General Conditions
- (13) Contract Specifications Part 2 - Special Provisions
- (14) Contract Specifications Part 3 - Technical Specifications and Bid Requirements
- (15) Change Orders approved by the City (if/when issued)

Contractor agrees to commence the work required hereunder within 10 calendar days from the date of the Notice to Proceed and to complete the work on or before 180 calendar days of the Notice to Proceed (_____, 20_). Contractor agrees to accept the City’s schedule and budget and acknowledges that the City retains the right to reduce the scope of the Services in order to accomplish the project within the City’s established budget and schedule. Time is of the essence

in the completion of this contract.

Contractor hereby agrees to furnish any and all materials, supplies, tools and equipment needed to perform the Services (the “Contractor’s Equipment”).

2. Fees: The City hereby agrees to pay the Contractor as full consideration for the Contractor’s satisfactory performance of its obligations under this Agreement a sum of _____ (\$_____). Contractor shall submit invoices to the City in accordance with the following schedule: on a monthly basis for actual work satisfactorily completed by Contractor. The Contractor’s invoices shall reflect the Contractor’s name, address, Federal ID No., services performed during the billing period, and shall reflect the percentage of the Services performed. Invoices in the proper form, verified by the City’s on-site inspector and approved by the City will be paid by the City within thirty (30) days of receipt thereof. The City reserves the right to approve such invoices, in its sole discretion, and to request such detail and additional information as the City, in its discretion, deems appropriate. Partial billings may be approved at the sole discretion of the City.

3. Additional Contractor Warranties:

A. The Contractor has the power and authority to consummate the obligations and responsibilities contemplated herein, and has taken all necessary action to authorize the execution, delivery and performance required under this Agreement.

B. The person executing this Agreement for the Contractor warrants that he is duly authorized by the Contractor to execute this Agreement on the Contractor's behalf.

C. The services to be provided under this Agreement shall be performed competently and with due care, and in accordance with all applicable laws, codes, ordinances and regulations and licensing requirements.

4. Binding Effect of Agreement: This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors and assigns.

5. Other Payments, Taxes, Expenses: Except as may be specifically agreed upon by the parties in writing, the Contractor shall be entitled to no fees, bonuses, contingent payments, or any other amount in connection with the services to be rendered or materials provided hereunder. The parties hereto further agree that the City shall have no obligation to reimburse, pay directly or otherwise satisfy any expenses of the Contractor in connection with the performance of his obligations under this Agreement, including, but not limited to, the cost of any insurance or license fees.

It is expressly understood and acknowledged by the parties hereto that the fees payable hereunder shall be paid in gross amount, without reduction for any Federal or State withholding or other payroll taxes, or any other governmental taxes or charges. The parties hereto further recognize that the Contractor is an independent contractor of the City and is therefore responsible for directly assuming and remitting any applicable Federal or State withholding taxes, estimated tax payments, or any other fees, taxes or expenses whatsoever. In the event that the Contractor is deemed not to be an independent contractor by any local, state or federal government agency, the Contractor agrees to indemnify and hold harmless the City for any and all fees, costs and expenses, including but not limited to, attorneys' fees, incurred thereby.

6. Insurance: The Contractor covenants to maintain all applicable insurance in the amounts set forth in Sections 1-24 and 1-25 of the Contract Specifications General Conditions. The Contractor further agrees to provide evidence of such insurance upon signing this Agreement. The Certificates of Insurance shall be on an occurrences basis and shall provide that the City shall be given at least thirty (30) days prior written notice of the cancellation of, intention not to renew, or material change in the coverage. **All insurance shall include completed operations and contractual liability coverage, and must name the City as an additional insured, not just a certificate holder in accordance with Section 1-25.**

PROVISION OF ANY INSURANCE REQUIRED HEREIN DOES NOT RELIEVE THE CONTRACTOR OF ANY OF THE RESPONSIBILITIES OR OBLIGATIONS ASSUMED BY THE CONTRACTOR IN CONNECTION WITH THE CONTRACT AWARDED, OR FOR WHICH THE CONTRACTOR MAY BE LIABLE BY LAW OR OTHERWISE.

A. Worker's Compensation Insurance: Contractor Shall comply with the requirements and benefits established by the State of Maryland for the provision of Worker's Compensation Insurance and must submit an insurance certificate as proof of coverage prior to contract approval. All Corporations are required to provide Worker's Compensation Certificate of Insurance.

B. Comprehensive General Liability Insurance: The Contractor shall provide general liability insurance in the following amounts and shall submit an insurance certificate as proof of coverage prior to contract approval:

- 1.** Personal Injury Liability Insurance with a limit of \$1,000,000.00 for each occurrence and \$1,000,000.00 aggregate , where aggregates insurance apply;

2. Property damage liability insurance with limits of \$1,000,000.00 for each occurrence and \$1,000,000.00 aggregate, where aggregates apply. Property damage insurance shall specifically include explosion, collapse and underground damage (X,C,U).

C. Automobile Liability Insurance. Motor vehicle insurance meeting the requirements of Maryland law and covering every vehicle and driver involved in providing the services, in the amount of \$1,000,000.00 combined single limit.

7. Doing Business in Maryland: Contractor warrants and represents that it (1) is either (a) incorporated in Maryland or (b) registered or qualified by the Maryland State Department of Assessments and Taxation (SDAT) as required by the Maryland Annotated Code, Corps. & Assocs. Article, to do business in Maryland and (2) is in good standing with SDAT.

8. Bonds: Performance and Labor and Material Payment bonds shall be required in the amount of 110% of contract amount.

9. Compliance with Laws: The Contractor shall, without any additional expense to the City, be responsible for complying with any and all applicable Federal, State and City laws, codes and regulations in connection with the services provided by the Contractor. Contractor shall also obtain any licenses required by the Contractor to perform the services herein contracted for.

11. Indemnification: The Contractor shall be responsible for and indemnify, defend and hold the City harmless against any and all claims for loss, personal injury and/or damage that may be suffered as a result of the Contractor's negligence or willful misconduct in the Contractor's performance of the Services or for any failure of the materials supplied under this contract or for any failure by the Contractor to perform the obligations of this Agreement, including but not limited to, attorneys' fees and any cost incurred by the City in defending any such claim. Contractor shall be responsible for and shall indemnify and hold the City harmless against any claim for loss, howsoever arising or incurred, for damage that may occur to Contractor's property or property of third parties that is being stored at the construction site and/or maintained/used by the Contractor in delivery of the Services.

12. Not Assignable: The Contractor shall not assign or transfer any interest or claim under this Agreement except as may be agreed upon and authorized in writing by the City and no contract shall be made by the Contractor with any other party for furnishing any of the services herein contracted for without the prior approval of the City.

13. Relief: In the event of a breach or a threatened breach by the Contractor of any provision of

the Agreement, the Contractor recognizes the substantial and immediate harm that a breach or threatened breach will impose upon the City, and further recognizes that in such event monetary damages will be inadequate to fully protect the City. Accordingly, in the event of a breach or threatened breach of this Agreement, the Contractor consents to the City's entitlement to such ex parte, preliminary, interlocutory, temporary or permanent injunctive, or any other equitable relief, protecting and fully enforcing the City's rights hereunder and preventing the Contractor from further breaching any of his obligations set forth herein. The Contractor expressly waives any requirement based on any statute, rule of procedure, or other source, that the City post a bond as a condition of obtaining any of the above-described remedies. Nothing herein shall be construed as prohibiting the City from pursuing any other remedies available to the City at law or in equity for such breach or threatened breach, including the recovery of damages from the Contractor.

14. City's Right to Terminate: This Agreement may be terminated immediately by the City upon written notice in whole or in part, when the City, in its sole and absolute discretion, determines such action to be in its best interests and shall be terminated whenever adequate funds have not been appropriated by the City in the annual budget for the purpose set forth herein. The Contractor is advised that the City does not guarantee the appropriation of funds for any subsequent fiscal year (beginning July 1). If any portion of the term of this Agreement extends beyond the City's current fiscal year, the Agreement is subject to the availability of funds for that portion of the Term that extends beyond the City's current fiscal year. The Contractor shall not perform services in any fiscal year following the current fiscal year without verification from the City that adequate funds have been appropriated for that purpose in the budget for the relevant fiscal year. Upon such termination, the City shall be liable to the Contractor only for payment for services actually provided prior to the effective date of the termination.

15. Entire Understanding: This Agreement sets forth the entire agreement between the parties relative to the subject matter hereof. No representation, promise or condition, whether oral or written, not incorporated herein shall be binding upon either party to this Agreement. No waiver, modification or amendment of the terms of this Agreement shall be effective unless made in writing and signed by an authorized representative(s) of both parties.

16. Applicable Law: This Agreement shall be interpreted in accordance with the laws of the State of Maryland. Any suit to enforce the terms hereof or for damages or other remedy for breach hereof shall be brought exclusively in the courts of the State of Maryland for Carroll County and

the parties expressly consent to the jurisdiction thereof, acknowledge that jurisdiction and venue are proper therein, and waive any right that they may otherwise have to bring such action in or transfer or remove such suit to the courts of any other jurisdiction.

17. Conflict of Interest: The person executing this Agreement on behalf of the Contractor certifies that he understands the provisions of the Westminster City Charter and Code dealing with conflicts of interest and the prohibition of the solicitation or acceptance of gifts.

18. Set-Off: In the event that the Contractor shall owe an obligation of any type whatsoever to the City at any time during the term hereof, or after the termination of the relationship created hereunder, the City shall have the right to offset any amount so owed the Contractor against any compensation due to Contractor for the provision of the Services.

19. Severability: If any term or provision of this Agreement shall be held invalid or unenforceable to any extent, the remainder of this Agreement shall not be affected thereby, and each term and provision of this Agreement shall be enforced to the fullest extent permitted by law.

IN WITNESS WHEREOF, on the date hereinabove set forth, the parties hereto have executed this Agreement in two duplicate originals, any one of these shall be adequate proof of this Agreement without locating or accounting for the other.

ATTEST:

CONTRACTOR:

BY: _____

Name: _____

Title: _____

ATTEST:

MAYOR AND COMMON COUNCIL OF
WESTMINSTER

BY: _____

Margaret L. Wolf, Acting City Clerk

Kevin R. Utz, Mayor

Recommended for approval:

Jeffrey Glass, Director of Public Works

Approved as to form and legal sufficiency this ____ day of _____, 2013:

Elissa D. Levan, City Attorney

CITY OF WESTMINSTER, MARYLAND

VENDOR RESPONSIBILITY FORM

1. Summarize briefly your experience in providing services of the size and scope outlined in the attached specifications:

2. List the names and addresses of three (3) firms, *with telephone numbers and contact person*, for which you have provided commodities or services of similar size and scope as that outlined in the attached specifications:

3. List the name and address of one bank or other institution that can provide the City with an adequate credit reference:

Federal I.D. #

Name of Bidder: _____

Address: _____

Telephone #:

By: _____

Signature

Typed Name

and

Title

CITY OF WESTMINSTER, MARYLAND

Equal Opportunity Employer

I HEREBY AFFIRM THAT THIS COMPANY DOES NOT DISCRIMINATE IN ANY MANNER AGAINST ANY EMPLOYEE OR APPLICANT FOR EMPLOYMENT BECAUSE OF RACE, CREED, COLOR, SEX OR NATIONAL ORIGIN.

Bidder: _____
Type/Print Name of Firm

Address: _____

City/State: _____
Zip Code

By: _____
Signature of Person Authorized to Sign Bid

Type/Print Name and Title of Person
Authorized to Sign Bid

CITY OF WESTMINSTER, MARYLAND

STATEMENT UNDER OATH TO ACCOMPANY BID

The bidder represents, and it is a condition of the acceptance of this bid, that the bidder has not been a party with other bidders to any agreement to bid a fixed or uniform price.

ATTEST/WITNESS

Name of Bidder-Type/Print

By: _____
Signature of Person Authorized to Sign

Name and Title of Signatory (Type or Print)

STATE OF _____

COUNTY OF _____, TO WITNESS:

On this ____ day of _____ 20 ____, before the undersigned officer, personally appeared _____, known to me or satisfactorily proven to be the person whose name is subscribed on the foregoing instrument for the purposes therein contained. IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year aforesaid.

Notary Public

My Commission Expires: _____

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

_____ (Name of Contractor)

_____ (Address of Contractor)

a _____ hereinafter (Corporation, Partnership or Individual)

called Principal, and _____ (Name of Surety)

_____ (Address of Surety)

hereinafter called Surety, and held and firmly bound unto The Mayor and Common Council of Westminster, City Hall, Westminster, MD 21157 (hereinafter "the City"), in the penal sum of

_____ Dollars, \$ (_____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents. The condition of this obligation is such that whereas, the Principal entered into a certain contract with the City, dated the _____ day of _____ 2014, a copy of which is hereto attached and made a part hereof the following services (hereinafter, "the Work", as further described in the Contract Documents):

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the City, with or without notice to the Surety and during the one year guaranty period, and if it shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the City from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the City all outlay and expense that the City may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the Work to be performed thereunder of the Specifications accompanying the same shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or to the Specifications.

PROVIDED, FURTHER, that no final settlement between the City and the Contractor shall abridge the right of any beneficiary hereunder whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in two (2) counterparts, each one of (Number) which shall be deemed an original, this the _____ day of _____, 20____.

ATTEST: _____
(Principal)

(Principal: Secretary) By _____

(SEAL)

(Witness as to Principal) _____
(Address)

(Address) _____

(Surety)

ATTEST:

(Surety Secretary)

(SEAL)

(Witness as to Surety) By _____
(Attorney in Fact)

(Address) _____
(Address)

NOTE: Date of Bond must not be prior to date of Contract.

If Contractor is Partnership, all partners should execute Bond.

IMPORTANT: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the Project is located.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____ hereinafter
(Corporation, Partnership or Individual)

called Principal, and _____
(Name of Surety)

(Address of Surety)

hereinafter called Surety, and held and firmly bound unto The Mayor and Common Council of Westminster, City Hall, Westminster, MD 21157(“the City”), in the penal sum of _____ (\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the City, dated the _____ day of _____ 20__, a copy of which is hereto attached and made a part hereof for the following services (hereinafter, “the Work”, as further described in the Contract Documents):

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the City, with or without notice to the Surety and during the one year guaranty period, and if it shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the City from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the City all outlay and expense that the City may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the Services to be performed there under of the Specifications accompanying the same shall in any way affect

its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the Services or to the Specifications.

PROVIDED, FURTHER, that no final settlement between the City and the Contractor shall abridge the right of any beneficiary hereunder whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in two (2) counterparts, each one of (Number) which shall be deemed an original, this the _____ day of _____, 20____.

ATTEST: _____
(Principal)

(Principal: Secretary) By _____

(SEAL)

(Witness as to Principal) _____
(Address)

(Address) _____
(Surety)

ATTEST: _____
(Surety Secretary)

(SEAL)

(Witness as to Surety) By _____
(Attorney in Fact)

(Address) _____
(Address)

NOTE: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

NOTICE OF AWARD

TO:

Attn:

Project Description: City of Westminster Fiber-to-the-Premises Pilot Network Construction

You are hereby notified that your Bid for construction of a Fiber-to-the-Premises Pilot Network for the City of Westminster as outlines in the Specifications and other Contract Documents has been accepted in the amount of _____ (\$_____).

You are required to execute the Agreement and furnish certificates of insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute the Agreement and to furnish the same within ten (10) days from the date of this Notice, the City will be entitled to consider all your rights arising out of the City's acceptance of your bid as abandoned and as a forfeiture of your bid bond. The City will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Award to the City.

Dated this _____ day of _____ 20__.

The Mayor and Common Council of Westminster
Owner

BY _____
Kevin R. Utz

TITLE _____ Mayor

ACCEPTANCE OF NOTICE

Receipt of the NOTICE OF AWARD is hereby acknowledged.

By: _____

this the _____ day of _____, 20__.

By: _____

Title: _____

NOTICE TO PROCEED

TO: Date: ” ”, 20
Project: Fiber-to-the-Premises Pilot Network Construction

Contract No. R-265-C

You are hereby notified to commence work in accordance with the Agreement dated _____ on or before _____ and you are to complete the Work within 180 consecutive calendar days thereafter. The date of completion of all Work is therefore _____.

The Mayor and Common Council of Westminster
Owner

By: _____
Kevin R. Utz

Title: Mayor

ACCEPTANCE OF NOTICE

Receipt of the above Notice to Proceed is hereby acknowledged
by _____

this the ____ day of _____, 20____.

By: _____

Title: _____

CHANGE ORDER

Change Order No. _____ Date: _____

Agreement Date: _____

Contractor For: _____

_____ Contract No. _____

Owner: Mayor and Common Council of Westminster

You are hereby instructed, subject to the provision of the above named contract, to make the following changes:

and to add/subtract to the contract, in accordance with the contract, the sum of _____

_____ Dollars (\$_____).

Amount of original contract \$_____ Total Additions \$_____

Total Deductions \$_____ Total Revised Contract \$_____

The Contract Time will be (increased) (decreased) by _____ calendar days.

The date for completion of work will be _____.

ATTEST:

ACCEPTED:

The Mayor and
Common Council of Westminster
Owner

By: _____

Kevin R. Utz, Mayor

Date: _____

BY: _____

DATE: _____

ACCEPTED:

Contractor

Address

CONTRACT SPECIFICATIONS - PART 1

GENERAL CONDITIONS

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CONTRACT SPECIFICATIONS – PART 1

GENERAL CONDITIONS

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GENERAL CONDITIONS

1-01. GENERAL:

These General Provisions are hereby made a part of the Contract. In case of conflict with other portions of the specifications, the Special Provisions (Contract Specifications Part 2) and Supplementary Technical Specifications (Contract Specifications Part 3) shall govern.

1-02. INTENT OF SPECIFICATIONS:

It is the intent of the specifications, and supplementary documents to provide the Contractor with such information and instructions as may be necessary to complete the contemplated work. The work under the contract shall be built of the materials, sizes, and dimensions and in the manner called for by the specifications, or in accordance with such changes as may be approved by the City from time to time during the progress of the work as hereinafter provided.

1-03. WORK TO BE DONE BY THE CONTRACTOR:

The Contractor shall do all the work and furnish all the labor, materials, tools and appliances necessary and proper to perform the work required by the contract, in the manner called for by the specifications and within the contract time. It shall complete the entire work, together with such extra work as may be required, at the prices bid or fixed thereby to the satisfaction of the City of Westminster and in accordance with the specifications.

1-04. REMOVAL OF OBSTRUCTIONS:

A. Should the position of any pipe, conduit, pole or other structures, in the opinion of the City, require removal, realignment or change, due to work to be done under the contract, the work of removal, realignment or change will be done as extra work. The Contractor shall uncover and support the structures, at his own expense, before such removal, and before and after such realignment or change, as constituting part of the contract; and the Contractor shall not be entitled to any claims for damage or extra compensation on account of the presence of said structure or on account of any delay in the removal or rearrangement of the same.

B. The Contractor shall not interfere with any persons, firms or corporations authorized by the City, or with the City, to protect, remove, change or replace the pipes, conduits, poles or other structures installed by the Contractor; and it shall permit said persons, firms or corporations authorized by the City, or the City, to take all such measurements as they may deem necessary or advisable for the purpose aforesaid, and the Contractor shall thereby be in no way relieved of any of his responsibilities under the contract.

1-05. EXISTING PUBLIC UTILITY STRUCTURES:

A. At least three days prior to starting work in the vicinity of gas mains, telephone and electric conduits and other utility structures or their appurtenances, the Contractor shall notify the public utility having jurisdiction of his intention so that the utility may have representatives present. The Contractor shall support and protect the structures as these representatives shall require and shall take any other steps that may be necessary to protect the structures from disturbance or damage.

B. Any damage to these structures resulting from the Contractor's operations shall be Contractor's responsibility and any expense to which City may be put by reason of any such damage will be charged against the Contractor and deducted from any monies due or to become due him. All of the provisions contained in this section shall be strictly adhered to by the Contractor at no additional compensation over the price bid for the work.

1-06. STORAGE OF MATERIALS: Materials shall be stored so as to ensure the preservation of their quality and fitness for the work. When considered necessary, they shall be placed on wooden platforms, or other hard, clean surface and not on the ground, and shall be located so as to facilitate prompt inspection. It is the responsibility of the contractor to find acceptable locations for storing equipment and materials that will not obstruct the flow of pedestrian or vehicular traffic.

1-07. STRUCTURES TO BE KEPT CLEAN: During the progress of the work, until the completion and final acceptance thereof, all structures shall be kept entirely clean throughout. Obstructions or deposits, at any time discovered, shall be removed at once by the Contractor without extra compensation. After the completion of the work, the structures, pipe lines and their appurtenances shall be left clean, free of debris and in good order.

1-08. GUARANTEE: The Contractor hereby guarantees all of the work performed under this contract for a period of two years after the date of final "acceptance" thereof by the City, as follows:

1. Against all faulty or imperfect materials and against all imperfect, careless, and/or unskilled workman-ship.
2. The Contractor agrees to replace with proper workmanship and materials, and to re-execute, correct, or repair without cost to the City any work which may be found to be improper or imperfect.
3. No use or acceptance by the City of the work or any part thereof, nor any failure to use the same, nor any repairs, adjustments, replacements or corrections made by the City due to the Contractor's failure to comply with any of his obligations under the contract documents, shall impair in any way the guarantee obligations assumed by the Contractor under these documents.

1-09. GUARANTEE BOND: (MAINTENANCE BOND)

A. Before final payment is made by The City, the Contractor shall be required to furnish The City with a Guarantee Bond in the amount of 10% of the Contract. The bond must be executed by a surety satisfactory to the City and shall be effective for the two-year guarantee period.

B. It is understood and agreed that in the event the Contractor fails to re-execute, correct or repair, any work performed in the construction of the contract which may be found to be improper or imperfect, or otherwise fails to fulfill the terms of the Guarantee, the City may purchase materials, tools and equipment and employ labor, or let a contract, as required to perform the necessary corrective work covered in the Guarantee. All costs and expenses incurred thereby by the City shall be charged against the Guarantee Bond.

1-10. SUPERVISION AND DIRECTION OF WORK: The work shall be under the general supervision of City employees assigned to the project and/or the City's Engineering Consultant designated by the City to provide construction oversight. While it is intended that the Contractor shall be allowed to carry on the contract in accordance with such general plan as may appear to him most desirable, the City, at its discretion, may from time to time direct the order in which and points at which, the work shall be prosecuted; and shall exercise such general control over the conduct of the work, at any time or place, as shall be required, in its opinion to safeguard the interests of the City. The Contractor shall have no claim for damages or extra compensation on account of the fact that it shall have been necessary to carry on the work in different sequence from that which it may have contemplated. The Contractor shall immediately comply with any and all orders and instructions given by the City, but nothing herein contained shall be considered such an assumption of control over the work by the City as to relieve the Contractor of any of his obligations or liabilities under the contract.

1-11. DECISIONS AND EXPLANATIONS:

A. City and its Engineering Consultant shall make all necessary explanations as to the meaning and intent of the specifications and shall give all orders and directions, either contemplated therein or thereby, or in every case in which a difficult or unforeseen condition arises during the prosecution of the work. Should there be any discrepancies in or between, or should any misunderstanding arise as to the import of anything contained in the specifications, the decision of the City shall be final and binding. Any errors or omissions in the specifications may be corrected by the City when such corrections are necessary for the proper fulfillment of their intent as construed by him.

B. City and its Engineering Consultant shall in all cases determine the amount, quality and acceptability of the work to be paid for under the contract, and shall decide all questions in relation to said work. Its decision and estimate shall be final and conclusive, and in case any question shall arise between the parties regarding the contract, such decision and estimate shall be a condition precedent to the right of the Contractor to receive payment under that part of the contract which is in dispute.

C. Decisions and interpretations will be rendered by the City as promptly as possible, but should delay occur, for any reason, the Contractor shall have thereby no claim for damage or extra compensation.

1-12. MATERIAL SAMPLES:

A. Before any contract is awarded, the Bidder shall be required to furnish a complete statement of the origin, composition and manufacturer of any or all materials to be used in the work, together with samples, which samples may be subjected to the tests provided for in these specifications to determine their qualities and fitness for the work.

B. The Contractor shall notify the City where and when he purchases materials for this contract and such notice shall be given to the City in sufficient time to allow for inspection of such materials at the point of manufacture.

1-13. INSPECTION: The City will assign an inspector during construction as it may deem necessary to properly inspect the materials furnished and the work done under the contract, and to see that the same strictly correspond with the drawings and specifications. Work and materials will be inspected promptly, but if, for any reason, delay should occur, the Contractor shall have thereby no claim for damages or extra compensation. Materials and workmanship shall be always subject to the approval of the City; but no inspection, approval or acceptance of any part of the work or of materials used therein, nor any payment on account thereof, shall prevent the rejection of said materials or work at any time thereafter during the existence of the contract, should said work or materials be found to be defective or not in accordance with the requirements of the specifications and contract. Contractor shall contract material testing company for soil, concrete, and roadway surface testing where it is required.

1-14. COOPERATION OF CONTRACTOR:

A. Contractor will be supplied with five (5) copies of the specifications. The Contractor shall have available on the work site at all times at least one complete book of the specifications; he shall give the work the constant attention necessary to facilitate the progress thereof, and shall cooperate in every way with the City.

B. Contractor shall have at all times a competent superintendent or foreman capable of reading and thoroughly understanding the drawings and specifications as his agent on the work to direct the work and to receive instructions from the City. The superintendent or foreman shall have full authority to execute the order or directions of the City without delay and to promptly supply such materials, tools, plant equipment and labor as may be required. Such superintendent or foreman shall be furnished irrespective of the amount of work. The giving of orders or directions in the manner aforesaid to the superintendent or foreman shall be equivalent to their receipt by the Contractor.

C. Contractor shall furnish the City with every reasonable effort for ascertaining whether or not the work performed and materials used are in accordance with the requirements of the specifications and contracts.

1-15. SERVICE OF NOTICES TO CONTRACTOR:

The mailing, in a United States post office box, of a written communication, notice or order, addressed to the Contractor at the business address filed with the City or to his office at the site of the work shall be considered as sufficient service upon the Contractor of such communication, notice or order, and the date of service shall be the date of such mailing.

1-16. WORKMANSHIP: All materials furnished and all work done shall be of the quality and character required by the specifications. Where no standard is specified for such work or materials, they shall be of a kind acceptable to the City. Upon the completion of the contract, the entire work shall be delivered to the City perfect and complete and in a satisfactory working condition. Contractor provides the City with 2 years workmanship warranty.

1-17. SKILLED LABOR ONLY SHALL BE USED: Competent labor only shall be used. Any

employee of the Contractor who shall use profane or abusive language to the Inspector or other employees of the City, or is otherwise disorderly and interferes with him in the performance of his duties, or who shall disobey or evade his instructions, or who is careless and incompetent, shall be discharged on the request of the City and shall not again be employed except with the City's consent.

1-18. ALTERATION OF PLANS AND CHARACTER OF WORK:

A. The City reserves the right to make such alteration in the plans or in the character of the work as may be considered necessary or desirable from time to time to complete fully and perfectly the construction of the work, provided such alterations do not materially change the original plans and specifications, and such alterations shall not be considered as a waiver of any condition of the contract nor to invalidate any of the provisions thereof. Should such alterations in the plans or in the character of the work result in an increased cost or decreased cost to the Contractor, a fair and equitable sum therefore, to be agreed upon in writing by the Contractor, and approved by the City before such work is begun, shall be added to or deducted from the contract price, as the case may be.

B. No alterations in the plans or in the character of the work shall be made without the prior written approval of the City. Approved change orders are required for alterations or work character modifications costing in excess of \$100.00. This applies to bid or contingent items and/or negotiated work that may not be covered herein.

1-19. CARE AND PROTECTION OF WORK: From the commencement of the contract until its completion, the Contractor shall be solely responsible for the care of the materials required to perform the contract and all work; and all injury or damage to the same from whatever cause, shall be made good by him at his own expense before the final payment is made. It shall provide suitable means of protection for all materials intended to be used in the work in progress, as well as for complete work.

1-20. DEFECTIVE WORK: Neither the inspection or supervision of the work, nor the presence or absence of any employee or agent of the City during the execution of any part of the work, shall relieve the Contractor of any of its obligations under the contract; and defective work shall be made good and unsuitable material will be rejected, notwithstanding that such work and material may have been previously overlooked and accepted or estimated for payment. If the work or any part thereof shall be found defective within one year of final acceptance or to have been damaged, at any time before the final acceptance of the whole work, the Contractor shall forthwith make good such defect or injury, in a manner satisfactory to the City, without extra compensation therefore, even though said defect or injury may not have been due to any act, default or neglect on the Contractor's part; provided, however, that should such defective work result from inherent flaws in the materials (if any) furnished by the City, the materials to replace same will be furnished by the City, at its cost of removing and replacing said defect will be paid for as extra work. All materials shall be carefully examined by the Contractor for defects, just before placing, and any found defective shall be rejected.

1-21. CLAIMS FOR DAMAGE:

If the Contractor shall claim compensation for any damage sustained by reason of the acts of The City, or any official or agent thereof, he shall, within five (5) days after the sustaining of such damage, make a written statement to The City of the nature of the damage sustained, and

shall on or before the fifth day of the month succeeding that in which he shall allege that such damage has been sustained, file with the Engineer an itemized statement of the details and amount of such damage. Unless such statement shall be made as thus required, his claim for compensation shall be forfeited and invalidated, and he shall not be entitled to payment on account of any such damage.

1-22. UNAUTHORIZED WORK: Work done without prior written approval, will be considered as unauthorized and at the expense of the Contractor and will not be approved by the City or paid for by The City. Work so done may be ordered removed and replaced by the City at the Contractor's expense.

1-23. LAWS AND REGULATIONS: In all operations connected with the work, Contractor shall comply with all ordinances and regulations of the City of Westminster, and all United States, State of Maryland and Carroll County Laws and regulations, which are or shall become applicable to, and control or limit in any way the work to be performed hereunder. The Contractor shall protect and indemnify The City and its officers and agents against any claim or liability arising from or based on the violation of any such law, ordinance or regulation, whether by himself or his employees. The Contractor shall pay all taxes required by Federal, State and County laws.

1-24. INSURANCE:

A. the Contractor shall not commence work under this contract until he has obtained all insurance required under Section 1-25 and such insurance has been approved by the City; nor shall the Contractor allow any subcontractor to commence work on his subcontract until all similar insurance required by the subcontractor has been so obtained and approved.

B. The Contractor shall take out and maintain during the life of this contract adequate Worker's Compensation Insurance and Employees' Liability Insurance for all his employees employed at the site of the project and, in case any work is sublet, the Contractor shall require the subcontractor similarly to provide Worker's Compensation Insurance and Employees' Liability Insurance for the latter's employees unless such employees are covered by the protection afforded by the Contractor.

1-25. LIABILITY INSURANCE:

A. the Contractor shall comply with the requirements and benefits established by the State of Maryland for the provision of Worker's Compensation Insurance and must submit an insurance certificate as proof of coverage prior to contract approval. Certificates of such insurance shall be subject to Owner's approval for adequacy or protection. The certificates shall designate "The Mayor and Common Council of Westminster, its employees and agents" as additional insures. All Corporations are required to provide Workers' Compensation Certificates of Insurance.

B. Limits of Insurance Coverage shall be in an amount not less than the following:

- | | |
|---|--|
| <input type="checkbox"/> General Liability | \$ 2,000,000 Annual Aggregate
1,000,000 Each Occurrence
1,000,000 Products & Completed Operations
1,000,000 Personal Injury & Advertising |
| <input type="checkbox"/> Automobile Liability | \$ 1,000,000 Combined Single Limit |

- Workers' Compensation -- Statutory
- Excess and XCU \$ 1,000,000 Each Occurrence

C. the Contractor shall provide to the City evidence of all insurance required herein.

E. the Contractor shall also maintain such insurance and/or riders to policies already issued, when required by The City to cover any special hazards which may develop in the course of the work with such companies and in such amounts as may be approved by The City.

1-26. PERMITS, LICENSES, CHARGES, NOTICES:

The Contractor shall procure and pay for all permits and licenses, pay all royalties, fees, charges, and give all notice necessary and incidental to the due and lawful prosecution of the work.

1-27. PATENT RIGHTS:

A. Whenever any article, materials, appliance, process, composition, means or things called for by these specifications is covered by Letters Patent, the successful bidder must secure, before using or employing same, the assent in writing of the City or Licensee of such Letters Patent and file the same with the City.

B. The said assent is to cover not only the use, employment, and incorporation of said article, material, appliance, process, composition, combination, means or thing in the construction and completion of the work, but also the permanent use of same, thereafter by or on behalf of the City, in the operation and maintenance of the project for the purpose for which it is intended or adapted.

C. The Contractor shall be responsible for any claims made against the City, its agents and employees for any actual or alleged infringement of patents by the use of any such patented item, in the construction and completion of the work and shall save harmless and indemnify the City, its agents and employees from all costs, expenses, and damages, including solicitor's and attorney's fees, which the City may be obliged to pay by reason of any actual or alleged infringement of patents used in the construction and completion of the work herein specified.

1-28. WATER SUPPLY: The Contractor shall provide at his own expense such quantities of clean water as may be required for any and all purposes under the contract. He shall take particular care to furnish his employees with pure and wholesome drinking water.

1-29. SANITARY ARRANGEMENTS:

A. Approved sanitary facilities for the use of laborers and others employed on the work, properly secluded from public observation, shall be constructed and maintained by the Contractor, in such manner and at such points as shall be approved or directed and their use shall be strictly enforced. The collections in the same shall be disinfected and/or removed when and as directed.

B. The Contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees as may be necessary to comply with the requirements and regulations of the Department of Health or of other bodies or tribunals having jurisdiction thereof. He shall commit no public nuisance.

- 1-30. ELECTRIC POWER:** The cost of electric current used for the construction of this contract, including that current furnished for the Contractor's Field Office, pumping of water, and other purposes shall be borne by the Contractor.
- 1-31. PUBLIC SAFETY:** Contractor is responsible for public safety within the project limits. Hazardous areas shall be removed and open trenches covered or backfilled before the end of each day activities.
- 1-32. INJURY TO PROPERTY:** In case any direct or indirect damage is done to public or private property by or because of the work, or in consequence of any act or omission on the part of the Contractor, his employees or agents, the Contractor shall, at his own expense, restore such property to a condition similar or equal to that which existed before such damage was done, by repairing, rebuilding, or otherwise making good such damage in a satisfactory manner; and in case of failure on the part of the Contractor to promptly so restore such property, or make good such damage, The City shall, upon forty-eight (48) hours written notice, proceed to repair, rebuild or otherwise restore such property as may be necessary and the cost thereof will be deducted from any monies due or to become due the Contractor under the contract; or the City shall deduct from any monies due the Contractor a sum sufficient in the judgment of the City to reimburse the City of the property so damaged.
- 1-33. INDEMNIFICATION OF CITY:** The Contractor shall indemnify and save harmless the City, its employees and agents from all suits, actions and damages or costs, of every name and description, to which the City, its employees and agents may be subjected or by reason of injury to persons or property as a result of the work, whether caused by negligence or carelessness on the part of the Contractor, his servants or agents or to other cause; and so much of the monies due or to become due the Contractor under the contract as shall be considered necessary by the City shall be retained until such suits or claims for damages shall be settled or otherwise disposed of, and satisfactory evidence to that effect furnished to the City.
- 1-34. CONTRACT TIME FOR COMPLETION:** The Contractor shall schedule his work in such a manner so as to perform the work under this contract within the number of calendar days stated in the Bid.
- 1-35. EXTENSION OF TIME:**
- A. If the Contractor is delayed or obstructed in the prosecution of the work by any neglect, delay or default attributable to the City, or by any damage that may happen to the work by fire, unavoidable accident or any unusual action of the elements, it shall be entitled to such an extension of time for the completion of the work as determined by the City to be just and reasonable; provided however, that the Contractor shall make a claim in writing for such extension of time within ten (10) days after the date the alleged cause for such extension of time occurred.
- B. A reasonable and proper extension of time for the completion of the work may also be allowed by the City on account of extra work that may be ordered in accordance with the terms of the contract.
- C. If the satisfactory execution and completion of the contract shall require work or material

in greater amounts or quantities than those set forth in the contract, then the contract time shall be increased in the same proportion as the additional work bears to the original work contracted for.

1-36. NORMAL WORK WEEK AND HOLIDAYS:

A. The City observes the following holidays; New Year's Day, Washington's Birthday, Martin Luther King Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and the Friday following Thanksgiving and Christmas Day.

B. The normal work week shall be five (5) days and the Contractor will not be permitted to work on the above mentioned holidays or on Saturdays or Sundays unless otherwise authorized in advance by the City in writing.

C. The normal number of working hours per day will be limited to a maximum of eight (8), unless otherwise authorized by the City.

D. In case of an emergency, which may require that work be done on Saturdays, Sundays, holidays or longer than eight (8) hours per day, the Contractor shall request permission of the City to do so. If in the opinion of the City, the emergency is bona fide, it will grant permission to the Contractor to work such hours as may be necessary. Also, if in the opinion of the City, a bona fide emergency exists, it may direct the Contractor to work such hours as may be necessary whether the Contractor requests permission to do so or not. All costs related to overtime wages for inspectors shall be borne by the Contractor provided such overtime is for the convenience of the Contractor.

E. In the event working times exceed those times specified above, for reasons stated above or at the Contractor's request; and the services of inspection personnel are deemed necessary, as determined by the City; the Contractor shall bear the costs for overtime inspection. Such costs shall be deducted from monies due the Contractor from time to time.

1-37. RESPONSIBILITY OF THE CONTRACTOR:

A. It is the responsibility of the Contractor to construct the work under this contract so that it will be complete and finished in every detail. If mention has been omitted in the contract documents of any items of work or materials which are necessary for the completion of, or proper functioning of, the construction, it shall be included without extra payment.

B. If damage is done to any existing work or work placed under this contract, such as cutting masonry, concrete work, damage to existing utilities, or the like, such damage must be repaired and made good by Contractor without extra payment to the full satisfaction and approval of the City and any agencies having jurisdiction whose work has been affected.

1-38. PROTECTION OF PROPERTY AND STRUCTURES:

The Contractor shall, at its own expense, sustain in their places and protect from direct or indirect injury all pipes, poles, tracks, walls, buildings and other structures or property in the vicinity of its work. It shall at all times have a sufficient quantity of timber and plank, chains, ropes, and any other required materials, for sustaining or supporting any structures that are uncovered, undermined, endangered, threatened or weakened. The Contractor shall take all risks attending the presence or proximity of pipes, poles, tracks, walls, buildings and other

structures and property, of every kind and description in the vicinity of its work, whether above or below the surface of the ground and it shall be responsible for all damages and assume all expense for direct injury, caused by its work, to any of them, or to any person or property by reason of injury to them, whether such structures are or are not shown on the drawings.

1-39. SHOP DRAWINGS:

A. The Contractor shall submit for the approval of the City, five (5) prints of certified working drawings for all fabricated or manufactured articles to be used in the work. No items requiring submission of detail drawings shall be manufactured prior to final approval of the drawings.

B. Two (2) prints of each drawing submitted will be returned approved if found correct, or else showing the changes required. Five (5) copies shall be re-submitted after corrections have been made until final approval by the City.

1-40. PAYMENT: A 10% contingency will be retained by the City for intermediate payment requests until the project substantial completion. After which the 10% will be reduced to 5% contingency until final acceptance. Posting a 10% Maintenance Bond is a condition precedence to the reduction of the retainage.

1-41. USE OF A PORTION OF THE WORK:

A. Whenever in the opinion of the City any portion of the work is completed or is in acceptable condition for use, it may be used for its intended purpose as may be directed; and such use shall not be held to be in any way an acceptance of that portion of the work used or as a waiver of any of the provisions of these contract documents.

B. Necessary repairs or renewals made in any section of the work under instructions from the City due to defective materials or work, natural causes, or ordinary wear and tear, or otherwise, pending final completion and acceptance of the entire work, shall be performed at the expense of the Contractor.

1-42. LIENS: Neither the final payment nor any part of the retained percentage shall become due until the Contractor shall deliver to the City a complete release of all liens arising out of this contract, or an affidavit that so far as he has knowledge or information, the releases include all the labor and material for which a lien could be filed, but the Contractor may if any subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the City, to indemnify them against any lien. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to the City all monies that the latter may be compelled to pay in discharging such a lien, including all costs and reasonable attorney's fee.

1-43. SUBLETTING OR ASSIGNMENT OF CONTRACT:

A. The Contractor shall keep the work under his own control, and shall not assign, by power of attorney or neither otherwise, nor sublet the work, or any part thereof, without the written consent of the City. It shall submit, in writing, the name of each subcontractor as he intends employing, the portion of the work that it is to do or the material which it is to furnish, its place of business, and such other information as the City requires in order to know whether said subcontractor is reputable, reliable, and able to properly perform the work it proposes to

do.

B. Contractor shall not, either legally or equitably, assign any of the monies payable under the contract, or its claim thereto, except by consent of the City.

C. Written consent by the City to sublet or assign any portion of the contract shall not be construed to relieve the Contractor or surety of any responsibility for the fulfillment of the contract.

1-44. PROSECUTION OF WORK:

A. The Contractor shall begin work within 10 days after receiving the notice to proceed on the contract and shall diligently prosecute the same so that it shall be fully completed within the number of working days and the completion date named. Unless work under the contract is started within ten (10) days after the notice to proceed on the contract, the contract shall be void if the City notifies the Contractor to that effect.

B. If at any time, progress in keeping with the intent of the contract shall not have been made, the Contractor shall increase the force and supply additional equipment as may be necessary to complete the work at the time and in the manner specified in the contract. Should the prosecution of the work be suspended by the Contractor, with the consent of the Engineer, the Contractor shall notify the Engineer in writing at least forty-eight (48) hours before resuming operations.

C. Notification must be given to the City forty-eight (48) hours in advance of any beginning or cessation of work.

1-45. CHARACTER OF WORKMEN AND EQUIPMENT:

A. Contractor shall employ only competent, skillful people to do or supervise the work, and whenever the City shall, in writing, notify the Contractor that any person employed on the work is, in its opinion, incompetent, disobedient, unfaithful, disorderly, discourteous, or otherwise unsatisfactory, such person shall be removed and shall not again be employed on the work.

B. The character, condition, adaptability and quantity of equipment used by the Contractor shall be such as will be necessary for the proper execution of the work within the specified working time. Power shovels, power cranes, compressors, tampers, power rollers, pavement breaking, material handling and all other equipment used shall be maintained in good condition and shall be subject to approval of the City prior to and during its use in connection with the work to be performed under the contract.

1-46. STRIKES:

The Contractor shall adjust all strikes, or other labor troubles, and no allowance will be made for such delays in the time limit herein named.

1-48. ABANDONMENT OR DELAY OF WORK:

If the work under the contract shall be abandoned by the contractor, or if at any time the City is aware of that the performance of the contract is unnecessarily or unreasonably delayed, or

that the Contractor is violating any of the provisions of the contract or is executing the same in bad faith, or if the work is not fully completed within the time named for its completion, together with such extension of time as may have been granted, the City by written notice, shall order the Contractor to discontinue all work thereunder, or any part thereof; and thereupon, the Contractor shall discontinue the work, or such part thereof; and the City shall have the power, by contract, or otherwise, to complete said work and deduct the entire cost thereof from any monies due or to become due the Contractor under the contract. For such completion of the work, the City may for itself or its contractors take possession of and use or cause to be used any or all materials, tools, machinery and appliances found on the line of said work. When any part of the contract is being carried on by the City, as herein provided, the Contractor shall continue the remainder of the work in conformity with the terms of the contract, and in such manner as not to interfere with the workmen employed by the City.

1-48. SCOPE OF PAYMENT:

The payment of any current, semi-final, or final invoices or the acceptance of any part of the work as provided in the specifications shall in no way or in no degree affect the obligation of the Contractor to repair, correct, renew, or replace, at his own cost and expense, defects or imperfections in the construction of the work under the contract, and this payment shall in no way affect this responsibility for all damages due or attributable to such defects or imperfections which may be discovered before the final acceptance of the whole work, the City to be the judge of such defects or imperfections.

1-49. EXTRA WORK:

A. The Contractor shall perform extra work for which there is no provision included in the contract, whenever, to complete fully the work as contemplated, it is deemed necessary or desirable, by written authority of the City, and such extra work shall be done in accordance with the specifications therefore, or in the best workmanlike manner as directed. This extra work will be paid for at a unit price or lump sum to be agreed upon previously in writing by the Contractor and the City, or where such a price-or sum cannot be agreed upon by both parties, or where this method of payment is impracticable, the City shall order the Contractor to do such work on a "Force Account" basis, as hereinafter specified.

B. The City, before ordering any extra work done, from time to time shall determine (1) what extra time, if any, will be allowed for said extra work; or (2) that the extra work is to be done concurrently with the work under the contract and without allowance of any additional time.

C. Scope of extra work shall be subject to the City's approval, and it shall be considered complete only upon the City's acceptance.

1-50. EXTRA WORK AS PART OF CONTRACT:

No order for extra work, nor the doing of any extra work at any time or place shall in any manner relieve the Contractor or the Surety of his bond from any of their obligations under the contract documents; all extra work orders being given and all extra work being done, under and in accordance with the contract and to be considered a part of the same and subject to each and every one of the terms and requirements of the contract documents, and fully covered by the bond furnished by the Contractor.

1-51. CURRENT ESTIMATES:

Upon the City's approval of each current estimate, the City may pay to the Contractor ninety percent (90%) of the total amount of the estimate; provided, however, that the City may retain out of any such payment any or all sums which by the terms of the contract, or of any law of the State of Maryland in force at the date of signing of the contract, it is authorized to retain. Payments on current estimates may be at any time withheld if, in the judgment of the City, the Contractor is not complying with the terms of the contract.

1-52. FINAL INSPECTION, FINAL ESTIMATE AND FINAL PAYMENT:

Upon payment of the semi-final estimate, paid as above stipulated, the City will make a final inspection of the work under the contract. After the City is satisfied that all requirements of the contract have been met, after all repairs have been made to any defective work and after the Guarantee or Maintenance Bond, has been furnished, the City will pay (as the final payment) to the Contractor all sums reserved or retained, less such amounts as it is empowered under the provisions of the contract permanently to retain.

1-53. EVIDENCE OF PAYMENT:

The Contractor shall furnish the City with satisfactory evidence, before or within ten (10) days after the final completion and acceptance of the whole work under the contract, and the final payment has been made, that all persons, partnerships and corporations who have done work or furnished materials under the contract, or in or about the work contracted for, and who have given written notice to the City of claims against the Contractor on account thereof, have been fully paid or secured. In the event such evidence is not furnished by the Contractor, such amount deemed necessary by the City to pay such claims shall be retained by The City out of any money due the Contractor under the contract until such claims shall have been fully discharged or such notice withdrawn. The City may also, with the written consent of the Contractor, use any money retained, due or to become due under the contract, for the purpose of paying for both labor and material for the work, for which claims have not been filed with the City.

1-54. TERMINATION OF OWNER'S LIABILITY:

The acceptance by the Contractor of the final payment made as aforesaid, shall operate as and be a release to the City and every officer and agent thereof, from all claims to the Contractor for anything done or furnished for or relating to or affecting the work under the contract.

1-55. PRE-BID CONFERENCE:

The Contractor's attendance at the pre-bid conference is mandatory.

1-56. TELEPHONE NUMBERS:

The Contractor shall furnish the City the names, addresses and telephone numbers of the responsible personnel who may be contacted at all times in the event the Contractor's services may be required for any eventuality or conditions affecting this work.

1-57. EXISTING UTILITIES AND SERVICES:

A. The Contractor shall exercise all possible caution in maintaining such services and utilities in a continuous operating condition.

B. Contractor shall exercise all possible caution to prevent interruption of operations and public services during its work.

C. If it becomes necessary to interrupt these services and/or utilities, the Contractor shall provide written notice to the City at least forty-eight (48) hours in advance of actual interruption. In no case shall service be interrupted for a period exceeding four (4) hours.

D. All costs related to repair or replacement of services and/or utilities shall be included in the respective unit prices bid for installation of services.

1-58. STANDARD SPECIFICATIONS:

Whenever standard specifications are referred to, they shall be the latest edition of that specification, and they shall be considered to be a part of these specifications insofar as they apply. Standard specifications referred to herein and the abbreviations by which they are referred to are as follows:

- City of Westminster Standard Specifications
- State Highway Administration (SHA) Standard Specifications
- American Society of Testing and Materials (ASTM)
- Bellcore Blue Book of Construction Practices;
- Society of Cable Telecommunications Engineers (SCTE) Recommended Practices for Optical Fiber Construction and Testing;
- Maryland Occupational Safety and Health (MOSH) Division; and
- Federal Occupational Safety and Health Administration (OSHA) regulations.

1-59. SAFETY:

In order to protect the lives and health of his employees under the contract, the Contractor shall comply with all occupational safety laws adopted by the Federal government, State and local government and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of, and in the course of, employment on work under the contract. He will erect and maintain, as required by the conditions and progress of the work, all necessary safeguards, including the posting of danger signs and other warnings against hazards. All damage, injury or loss referred to in the preceding paragraphs caused directly or indirectly, in whole or in part, by the Contractor, or any subcontractor or anyone employed by them will be remedied by the Contractor. The Contractor alone shall be responsible for the safety, efficiency, and adequacy of his plant, equipment, appliances, and methods, and for any damage which may result from their failure or their improper construction, maintenance or operation.

1-60. CONSTRUCTION SEQUENCE:

The Contractor's attention is directed to the fact that essential services and vehicular access must be maintained in the zone of construction. The sequence of construction shall be established prior to start of construction and presented by the Contractor in a proposed schedule. The schedule will be submitted to the City for approval. Once the Contractor's

proposed construction sequence has been approved, no deviation from that sequence without the advance approval of the City will be permitted except in emergencies.

1-61. CITY OF WESTMINSTER STANDARDS:

The Contractor shall use the City of Westminster's Standard Specifications and Details where applicable to this project, and shall have a copy of the City "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF PUBLIC UTILITY SYSTEMS, ROADS AND STORM DRAINS", dated September 2001, available to him at all times during the construction. The Specification Booklet and Standard Detail Sheets can be purchased at the Department of Public Works for \$35.00.

CONTRACT SPECIFICATIONS PART 2

SPECIAL PROVISIONS

INDEX OF SHEETS

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SECTION 01100 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. General provisions of the Contract, including all General and Supplementary Conditions and Specifications, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Work covered by the Contract Documents.
 - 2. Type of the Contract.
 - 3. Work phases.
 - 4. Work under other contracts.
 - 5. Use of premises.
 - 6. Construction safety and health standards.
 - 7. Owner's occupancy requirements.
 - 8. Work restrictions.
 - 9. Specification formats and conventions.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification:

City of Westminster, Maryland Fiber-to-the-Premises Pilot Network Construction
- B. Contract Number: R-265-C
- C. Owner: The City of Westminster.

Owner's Representative: Michael Matov, Senior Engineer.
- D. The Scope of work, including Add Alternate Bid Items, consists of the following:
 - 1. Construction of approximately 10 miles of underground fiber optic cable backbone infrastructure to provide service to:
 - a. Approximately 250 business units the Carroll County Air Business Center, West Branch Trade Center, and Westminster Technology Park; and
 - b. Approximately 650 residences within the Carroll Lutheran Village and surrounding residential area, comprised of more than 200 single-family and attached homes, approximately 300 apartment residences, and 150 assisted living / nursing residences.

2. Installation of a pre-fabricated, concrete communications shelter to house network electronics and fiber terminations;
1. Installation of an Electronic Equipment Cabinet to house network electronics and fiber terminations;
2. Termination and testing of fiber optic cables;
3. Installation of fiber optic service drops to each of the business properties served by the backbone infrastructure; and
4. Installation of fiber optic service drops to select residential properties owned by the Carroll Lutheran Village.

1.4 TYPE OF CONTRACT

- A. Project will be constructed under a single prime contract.

1.5 WORK PHASES

- A. Before commencing work, submit a schedule showing the sequence, commencement and completion dates for the various phases within the project.

1.6 USE OF PREMISES

- A. General: The Contractor shall have limited use of City premises and/or public rights-of-way as specified by permit documentation for construction operations. The limits of disturbance during construction shall be up to 10 feet on either side of the location of conduit and handhole placement, or within the limits of the public right-of-way, whichever is less.
- B. Use of Site: Limit use of premises to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 1. Owner Occupancy: Allow for Property Owner occupancy of Project site. Contractor shall closely coordinate construction activities on the project with the City. Contractor shall be completely responsible for the public safety and traffic safety in the area of the Project.
 2. Driveways, Parking Spots and Entrances: Keep driveways, parking spots and entrances serving premises clear and available to Property Owner, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.7 CONSTRUCTION SAFETY AND HEALTH STANDARDS

- A. It is a condition of this Contract, that the Contractor and any subcontractor shall not require any laborer or mechanic employed in performance of this Contract to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health or safety as determined under construction safety and health standards and regulations (Title 29, Code of Federal Regulations, Part 1926, formerly Part 1518, as revised from time to time) promulgated by the United States Secretary of Labor and Industry in accordance with the Maryland Occupational Safety and Health Act, Article 89, Section 28 thru 49A, inclusive, Annotated Code of Maryland (as the same may be amended from time to time).
- B. The Contractor shall permit inspection without delay and at any reasonable time on any premises where the work is being performed by the Inspector authorized to investigate compliance with the above mentioned federal and state statutes and regulations.
- C. The Contractor further agrees to correct any violations found to exist during such inspection within a reasonable time after issuance of any citation, unless he contests the validity thereof through the appropriate administrative and judicial process.

1.8 PUBLIC SAFETY AND CONVENIENCE

- A. The Contractor at all times shall conduct the work in such a manner as to ensure the least practicable obstruction to all forms of traffic. The convenience of the general public, tenants, and of the residents along and/or adjacent to the improvement shall be provided for.
- B. Fire hydrants on or adjacent to the Project shall be kept accessible to fire apparatus at all times, and no material or obstruction shall be placed within 10 feet of any such hydrant.

1.9 WORK RESTRICTIONS

- A. On-Site Work Hours: Work shall be generally performed during normal business working hours of 7:00 a.m. to 4:00 p.m., Monday through Friday, except as otherwise indicated. Weekend Hours: Additional weekend hours may be allowed subject to the approval of The City.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

PART 4 - MEASUREMENT AND PAYMENT

- 4.1 All work shall be measured and paid at the contract line item pricing provided in the Bid Forms, and shall include all materials, equipment and labor to complete this item of work in its entirety. The costs of all required insurance and bonds will be incidental to this item.
- 4.2 Payment shall be made based on the sum of extended pricing for all contract line item quantities applicable to the final design, including approved Change Orders. A 10% contingency will be retained by the City for intermediate payment requests until substantial completion of the Project. After which the 10% will be reduced to 5% contingency until final acceptance, to include delivery of all required documentation to the City.

PART 5 - END OF SECTION 01100

SECTION 01200 - CONTRACT MODIFICATION PROCEDURES

PART 6 - GENERAL

6.1 RELATED DOCUMENTS

- A. General provisions of the Contract, including all General and Supplementary Conditions and Specifications, apply to this Section.

6.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

6.3 MINOR CHANGES IN THE WORK

- A. The City will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time where construction conditions warrant it.

6.4 CHANGE REQUESTS

- A. City-Initiated Change Requests: The City will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Change Requests issued by The City are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
 2. Within seven (7) days after receipt of Proposed Change Request, Contractor shall submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change. Contractor shall:
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Change Requests: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to the Engineer no later than the business day following Contractor's discovery of the latent or unforeseen condition. Contractor shall:
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 4. Include costs of labor and supervision directly attributable to the change.
 5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

6.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Change Request, The Contractor will issue a Change Order for signatures of Owner and Contractor.

6.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Change Directive: The City may issue a Change Directive, which instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Change Directives shall contain a complete description of change in the Work. It shall also designate the method(s) to be followed to determine the change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records of work required by the Change Directive.
1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

END OF SECTION 01200

SECTION 01300 - PROJECT MANAGEMENT AND COORDINATION

PART 7 - GENERAL

7.1 RELATED DOCUMENTS

- A. General provisions of the Contract, including all General and Supplementary Conditions and Specifications, apply to this Section.

7.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Administrative and supervisory personnel.
 - 2. Project meetings.
- B. The Contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to contractor and/or City personnel.

7.3 COORDINATION

- A. Coordination: Contractor shall coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Contractor shall coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation. Contractor shall:
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components with subcontractors to ensure maximum accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
 - 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
- B. Administrative Procedures: Contractor shall coordinate scheduling and timing of required administrative procedures with other construction activities and activities of subcontractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's Construction Schedule.
 - 2. Installation and removal of temporary facilities and controls.
 - 3. Delivery and processing of submittals.
 - 4. Progress meetings.
 - 5. Startup and adjustment of systems.

6. Project closeout activities.
- C. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
 1. Salvage materials and equipment involved in performance of, but not actually incorporated into the work. Refer to other Sections for disposition of salvaged materials that are designated as City property.

7.4 SUBMITTALS

- A. Key Personnel Names: At the preconstruction meeting, Contractor shall submit a list of key personnel assignments, including superintendent and other personnel who will be in attendance at the Project site. Contractor shall identify individuals and their duties and responsibilities; list addresses and telephone numbers, and shall provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

7.5 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to Project Manager, Contractor shall provide other administrative and supervisory personnel as required for proper performance of the Work, including Quality Control Manager.

7.6 PROJECT MEETINGS

- A. General: Contractor shall schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
 1. Attendees: Contractor shall inform participants and others involved, and individuals whose presence is required, of date and time of each meeting, and shall notify Owner and Engineer of dates and times of scheduled meetings.
 2. Agenda: Contractor shall prepare the meeting agenda and distribute the agenda to all invited attendees.
 3. Minutes: Contractor shall record significant discussions and agreements achieved and issue minutes containing same. Contractor shall distribute the meeting minutes to everyone concerned, including Owner and Engineer, within seven days of the meeting.
- B. Preconstruction Conference: Contractor shall schedule a preconstruction conference before starting construction, at a time convenient to Owner, but no later than 15 days after execution of the Agreement. Contractor shall hold the conference at the Project site or another convenient location. Contractor shall Conduct the meeting to review responsibilities and personnel assignments.
 1. Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and be authorized to conclude matters relating to the Work.

2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Obtaining all applicable SHA and Carroll County permits.
 - d. Critical work sequencing and long-lead items.
 - e. Designation of key personnel and their duties.
 - f. Procedures for processing field decisions and Change Orders.
 - g. Procedures for requests for interpretations (RFIs).
 - h. Procedures for City utility location and inspection.
 - i. Procedures for testing and inspecting.
 - j. Procedures for processing Applications for Payment.
 - k. Distribution of the Contract Documents.
 - l. Submittal procedures.
 - m. Preparation of Record Documents.
 - n. Use of the premises.
 - o. Work restrictions.
 - p. Responsibility for temporary facilities and controls.
 - q. Construction waste management and recycling.
 - r. Parking availability.
 - s. Office, work, and storage areas.
 - t. Equipment deliveries and priorities.
 - u. Provisions for public safety.
 - v. First aid.
 - w. Security.
 - x. Progress cleaning.
 - y. Working hours.

3. Minutes: The Contractor will record and distribute the meeting minutes.

- C. Reporting: The Contractor will distribute minutes for all project meetings to each party present and to parties who should have been present.
- D. Schedule Updating: Contractor shall revise Contractor's Construction Schedule after each project meeting where revisions to the schedule have been made or recognized, and issue a revised schedule concurrently with the report of each meeting.
- E. Status meetings: The Contractor shall attend weekly status meetings during active construction phases, and shall be prepared to report on key Project progress metrics required by the City.

PART 8 - PRODUCTS (Not Used)

PART 9 - EXECUTION (Not Used)

PART 10 - MEASUREMENT AND PAYMENT (Not Used)

END OF SECTION 01300

SECTION 01310 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 11 - GENERAL

11.1 SUBMITTALS

- A. Submittals Schedule: Contractor shall Submit four copies of the construction schedule at the preconstruction meeting. Contractor shall arrange the following information in a tabular format:
 - 1. Scheduled date for first submittal.
 - 2. Specification Section number and title.
 - 3. Submittal category (action or informational).
 - 4. Name of subcontractor.
 - 5. Description of the Work covered.
 - 6. Scheduled date for Owner's final release or approval.
- B. Contractor's Construction Schedule: Contractor shall submit eight copies of the initial schedule at the preconstruction meeting, large enough to show entire schedule for entire construction period.
- C. Field Condition Reports: Contractor shall submit to the City eight copies of a field condition report upon discovery of differing conditions.
- D. Progress Metrics Reports: Contractor shall submit weekly via e-mail or other agreed-upon format.
- E. Special Reports: Contractor shall submit eight copies at time of unusual event.

11.2 COORDINATION

- A. Contractor shall coordinate the preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate subcontractors.
- B. Contractor shall coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports. Contractor shall:
 - 1. Secure time commitments for performing critical elements of the Work from parties involved.
 - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 12 - PRODUCTS

12.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Preparation: Contractor shall indicate each significant construction activity separately. He shall identify first workday of each week with a continuous vertical line. Contractor shall:
 - 1. Indicate an estimated completion percentage in 10 percent increments within time bar.

12.2 REPORTS

- A. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report with a request for interpretation. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.
- B. Progress Metrics Reports: Weekly progress metrics reports should indicate at a minimum:
 - 1. Weekly production of each contract line item.
 - 2. Total production of each contract line item per Purchase Order.
 - 3. Description of milestones reached and percentage completion of key milestones.
 - 4. Description of problems encountered and proposed solutions

12.3 SPECIAL REPORTS

- A. General: Contractor shall submit special reports directly to Owner within two days of an occurrence and distribute copies of the report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at the Project site, whether or not related directly to the Work, Contractor shall prepare and submit a special report. Contractor shall list chain of events, persons participating, and response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 13 - EXECUTION

13.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At regular intervals, Contractor shall update Contractor's construction schedule to reflect actual construction progress and activities. Contractor shall issue a schedule before each regularly scheduled progress meeting. Contractor shall:
 - 1. Revise the schedule immediately after each meeting or other activity where revisions have been recognized or made and issue an updated schedule concurrently with the report of each such meeting.

2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate Actual Completion percentage for each activity.
- B. Distribution: Contractor shall distribute copies of the approved schedule to Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. When revisions are made, Contractor shall distribute updated schedules to the same parties and post in the same locations. Contractor shall delete parties from the distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

SECTION 01320 - SUBMITTAL PROCEDURES

PART 14 - GENERAL

14.1 RELATED DOCUMENTS

- A. General provisions of the Contract, including all General and Supplementary Conditions and Specifications, apply to this Section.

14.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

14.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires The City's responsive action.
- B. Informational Submittals: Written information that does not require The City's responsive action. Submittals may be rejected for not complying with requirements.

14.4 SUBMITTAL PROCEDURES

- A. Coordination: Contractor shall coordinate preparation and processing of submittals with performance of construction activities. Contractor shall:
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. The City reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

- B. Submittals Schedule: Contractor shall comply with requirements in Section 01310 "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.
- C. Submittal Process: Submittals shall be sent directly to the Engineer for review and approval. The Engineer will distribute the stamped submittals to the Contractor and City. The City will receive two stamped copies.
- D. Processing Time: Contractor shall allow enough time for submittal review, including time for re-submittals, as follows. Time for review shall commence on Owner's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.
 - 1. Initial Review: Allow 10 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. The City will advise Contractor when a submittal being processed must be delayed for coordination.
 - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 - 3. Resubmittal Review: Allow 10 days for review of each re-submittal.
- E. Identification: Place a permanent label or title block on each submittal for identification.
 - 1. Indicate name of firm or entity that prepared each submittal on label or title block.
 - 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Engineer.
 - 3. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Contractor.
 - d. Name and address of subcontractor.
 - e. Name and address of supplier.
 - f. Name of manufacturer.
 - g. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Technical Specification Section number followed by a decimal point and then a sequential number (e.g., 3.2.01). Re-submittals shall include an alphabetic suffix after another decimal point (e.g., 3.2.01.A).
 - h. Number and title of appropriate Specification Section.
 - i. Drawing number and detail references, as appropriate.
 - j. Location(s) where product is to be installed, as appropriate.
 - k. Other necessary identification.
- F. Deviations: Highlight or Encircle or otherwise specifically identify deviations from the Contract Documents on submittals.
- G. Additional Copies: Unless additional copies are required for final submittal, and unless Engineer observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

- H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. The City will discard submittals received from sources other than Contractor.
1. Transmittal Form: Provide on the form for the following information:
 - a. Project name.
 - b. Date.
 - c. Destination (To:).
 - d. Source (From:).
 - e. Names of subcontractor, manufacturer, and supplier.
 - f. Category and type of submittal.
 - g. Submittal purpose and description.
 - h. Specification Section number and title.
 - i. Drawing number and detail references, as appropriate.
 - j. Transmittal number.
 - k. Submittal and transmittal distribution record.
 - l. Remarks.
 - m. Signature of transmitter.
 2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by the Engineer on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.
- I. Re-submittals: Make re-submittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked "Approved" from the Engineer's action stamp.
- J. Distribution: Contractor shall furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities And shall how distribution to same on the transmittal forms.
1. Use for Construction: Use only final submittals with mark indicating "Approved" from the Engineer's action stamp.
 2. The City shall receive two copies upon approval.

PART 15 - PRODUCTS

15.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.

- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Contractor shall include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Standard color charts.
 - e. Manufacturer's catalog cuts.
 - f. Wiring diagrams showing factory-installed wiring.
 - g. Operational range diagrams.
 - h. Standard product operation and maintenance manuals.
 - i. Compliance with specified referenced standards.
 - j. Testing by recognized testing agency.
 - k. Application of testing agency labels and seals.
 - l. Notation of coordination requirements.
- C. Contractor's Construction Schedule: Comply with requirements specified in Section 01310 "Construction Progress Documentation" for Construction Manager's action.
- D. Application for Payment: Comply with all requirements specified in Part 1 related to payment.
 - a. Mark up and retain one returned copy as a Project Record Document.

15.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
 - 1. Number of Copies: Submit four copies of each submittal, unless otherwise indicated. The City will not return copies.
 - 2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - 3. Test and Inspection Reports: Comply with requirements specified in elsewhere in these specifications.
- B. Contractor's Construction Schedule: Comply with requirements specified in Section 01310 "Construction Progress Documentation."
- C. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

- D. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- E. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- F. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

PART 16 - EXECUTION

16.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions.

16.2 OWNER'S ACTION

- A. Action Submittals: The Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. The Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.
- B. Informational Submittals: The Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements.
- C. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- D. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

PART 17 - MEASUREMENT AND PAYMENT (Not Used)

END OF SECTION 01320

SECTION 01400 - QUALITY REQUIREMENTS

PART 18 - GENERAL

18.1 RELATED DOCUMENTS

- A. General provisions of the Contract, including all General and Supplementary Conditions and Specifications, apply to this Section.

18.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
- C. The assigned City Inspector shall perform field inspections on the project. In addition to the City inspections, the Contractor shall make arrangements to have the installation inspected by the Carroll County Bureau of Permits and Inspections, where applicable.

18.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Owner.
- C. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- D. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- E. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- F. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
- G. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

18.4 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Engineer for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Owner for a decision before proceeding.
- C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

18.5 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

18.6 QUALITY CONTROL

- A. Owner Responsibilities: The City Inspector will perform field inspections on the project.
- B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, Contractor shall provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
- C. Re-testing/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.

- D. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- E. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 21 days of date established commencement of the Work.

PART 19 - PRODUCTS (Not Used)

PART 20 - EXECUTION

20.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, Contractor shall repair damaged construction and restore substrates and finishes. Contractor shall:
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections.
 - 2. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
 - 3. Comply with the Contract Specifications Part 3, Section 2 “General Requirements of Construction Services.”
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

PART 21 - MEASUREMENT AND PAYMENT (Not Used)

END OF SECTION 01400

SECTION 01500 – PRODUCT REQUIREMENTS

PART 23 - GENERAL

23.1 RELATED DOCUMENTS

- A. General provisions of the Contract, including all General and Supplementary Conditions and Specifications, apply to this Section.

23.2 SUMMARY

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

23.3 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named, including make or model number or other designation, this is to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

23.4 SUBMITTALS

- A. Product List: Contractor shall submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
 - 1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 01320 "Submittal Procedures." Show compliance with requirements.

23.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

23.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Contractor shall deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Contractor shall comply with all manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces. Storage locations at the site are limited. Contractor shall coordinate with the City for the use of alternate nearby storage sites if needed.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

23.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 - 1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to the City.
 - 2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. Special Warranties: Contractor shall prepare a written document that contains appropriate terms and identification, ready for execution. Contractor shall submit a draft for approval before final execution.
 - 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 - 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
- C. Submittal Time: Comply with requirements in Section 01610 "Closeout Procedures."

PART 24 - PRODUCTS

24.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Contractor shall provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Owner will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
 6. Or Equivalent: Where products are specified by name and accompanied by the term "or equivalent" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
 3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
 4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
 5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
 6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
 7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
 8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.

24.2 PRODUCT SUBSTITUTIONS

- A. Conditions: Owner will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Owner will return requests without action, except to record noncompliance with these requirements:
1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 2. Requested substitution does not require extensive revisions to the Contract Documents.
 3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 4. Substitution request is fully documented and properly submitted.
 5. Requested substitution will not adversely affect Contractor's Construction Schedule.
 6. Requested substitution has received necessary approvals of authorities having jurisdiction.
 7. Requested substitution is compatible with other portions of the Work.
 8. Requested substitution has been coordinated with other portions of the Work.
 9. Requested substitution provides specified warranty.
 10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

24.3 COMPARABLE PRODUCTS

- A. Conditions: Owner will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Owner will return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 2. Detailed comparison of significant qualities of the proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 3. Evidence that proposed product provides specified warranty.
 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 5. Samples, if requested.

PART 25 - EXECUTION (Not Used)

PART 26 - MEASUREMENT AND PAYMENT (Not Used)

END OF SECTION 01500

SECTION 01600 - EXECUTION REQUIREMENTS

PART 27 - GENERAL

27.1 RELATED DOCUMENTS

- A. General provisions of the Contract, including all General and Supplementary Conditions and Specifications, apply to this Section.

27.2 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
 1. General installation of products.
 2. Progress cleaning.
 3. Protection of installed construction.
 4. Correction of the Work.

PART 28 - PRODUCTS (Not Used)

PART 29 - EXECUTION

29.1 EXAMINATION

- A. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 2. Examine roughing-in for electrical systems to verify actual locations of connections before equipment and fixture installation.
 3. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

29.2 PREPARATION

- A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- B. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, Contractor shall submit a request for information to Owner, and include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Contractor shall:

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- C. As-Built Drawings: On completion of major site improvements, and other work requiring field-engineering services, prepare as-built drawings showing dimensions, locations, angles, and elevations of installed electrical conduit, lighting structures, handboxes and electrical cabinet. Refer to Part 3, Section **Error! Reference source not found.** For requirements related to project-specific engineering “redline” submittal requirements.

29.3 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Anchors and Fasteners: Contractor shall provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Owner.
 2. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- E. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

29.4 PROGRESS CLEANING

- A. General: Contractor shall clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- G. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- H. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

29.5 PROTECTION OF INSTALLED CONSTRUCTION

- A. Contractor shall provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

29.6 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Contract Specifications Part 3, Section 2 "General Requirements of Construction Services."
 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials.

2. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

PART 30 - MEASUREMENT AND PAYMENT

- 30.1 The cost for execution requirements shall be incidental to items specified elsewhere in these specifications.

END OF SECTION 01600

SECTION 01610 - CLOSEOUT PROCEDURES

PART 31 - GENERAL

31.1 RELATED DOCUMENTS

- A. General provisions of the Contract, including all General and Supplementary Conditions and Specifications, apply to this Section.

31.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 1. Inspection procedures.
 2. Warranties.
 3. Final cleaning.
- B. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, Contractor shall complete the following. List items below that are incomplete in request.
 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 2. Advise Owner of pending insurance changeover requirements.
 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Prepare operation and maintenance manuals.
 5. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 6. Complete final cleaning requirements, including touchup painting.
 7. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

- C. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Owner will either proceed with inspection or notify Contractor of unfulfilled requirements.
 - 1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
 - 2. Results of completed inspection will form the basis of requirements for Final Completion.

31.3 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, Contractor shall complete the following:
 - 1. Submit a final Application for Payment.
 - 2. Submit certified copy of Owner's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Owner. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 - 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
 - 5. Certificate of acceptance issued by the material manufacturer.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Owner will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

Re-inspection: Request re- inspection when the Work identified in previous inspections as incomplete is completed or corrected.

31.4 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Owner for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.

3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 32 - PRODUCTS

32.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 33 - EXECUTION

33.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
1. Contractor shall complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - d. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - e. Leave Project clean and ready for occupancy.
- B. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

PART 34 - MEASUREMENT AND PAYMENT (Not Used)

- 34.1 The cost for closeout procedures shall be incidental to items specified elsewhere in these specifications and are included in the Contract price.

END OF SECTION 01610

SECTION 01620 - PROJECT RECORD DOCUMENTS

PART 35 - GENERAL

35.1 RELATED DOCUMENTS

- A. General provisions of the Contract, including all General and Supplementary Conditions and Specifications, apply to this Section.

35.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
1. Record Product Data.

35.3 SUBMITTALS

- A. Record Product Data: Submit one copy of each Product Data submittal.
1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.

PART 36 - PRODUCTS

36.1 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal. Contractor shall:
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders and Record Drawings where applicable.

36.2 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 37 - EXECUTION

37.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Owner's reference during normal working hours.

PART 38 - MEASUREMENT AND PAYMENT (Not Used)

END OF SECTION 01620

CONTRACT SPECIFICATIONS PART 3

**SUPPLEMENTARY TECHNICAL SPECIFICATIONS
AND SUBMITTAL REQUIREMENTS**

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1 Project Summary

1.1 Network Design Overview

The project scope consists of approximately 10.0 route miles of new underground fiber construction within two distinct service areas:

- ***Service Area A*** - business and industrial park, comprised of approximately 250 business units in the Carroll County Air Business Center, West Branch Trade Center, and Westminster Technology Park; and
- ***Service Area B*** - the Carroll Lutheran Village and surrounding residential area, comprised of more than 200 single-family and attached homes, approximately 300 apartment residences, and 150 assisted living / nursing home residences.

Each of these service areas will be served from its own hub site, equipped to support fiber termination and network electronics. Figure 1 and Figure 2 provide high-level overviews of the planned fiber optic network routes. Detailed route maps are included in ***Attachment 1***.

Figure 1: Service Area A - Fiber Network Route Map

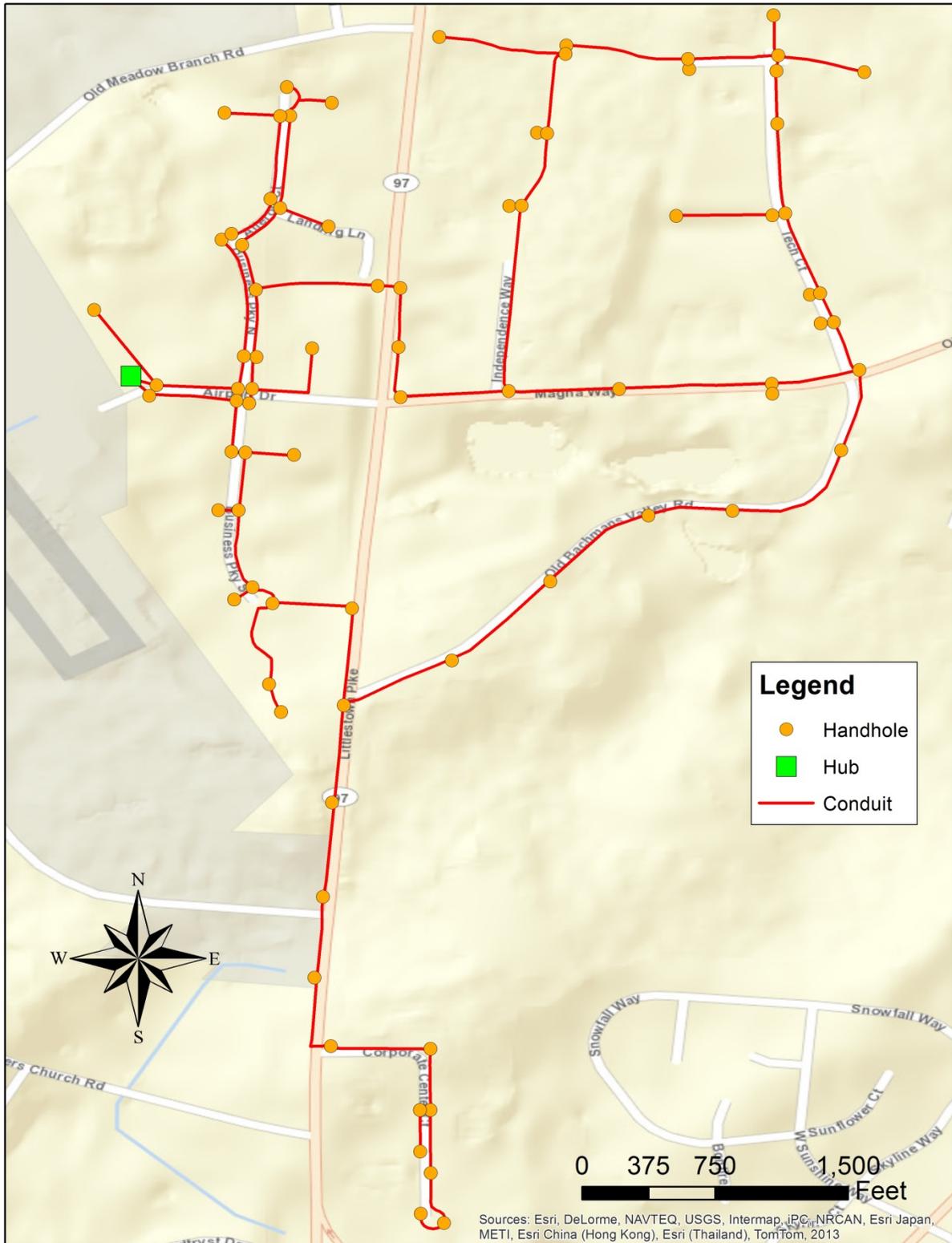
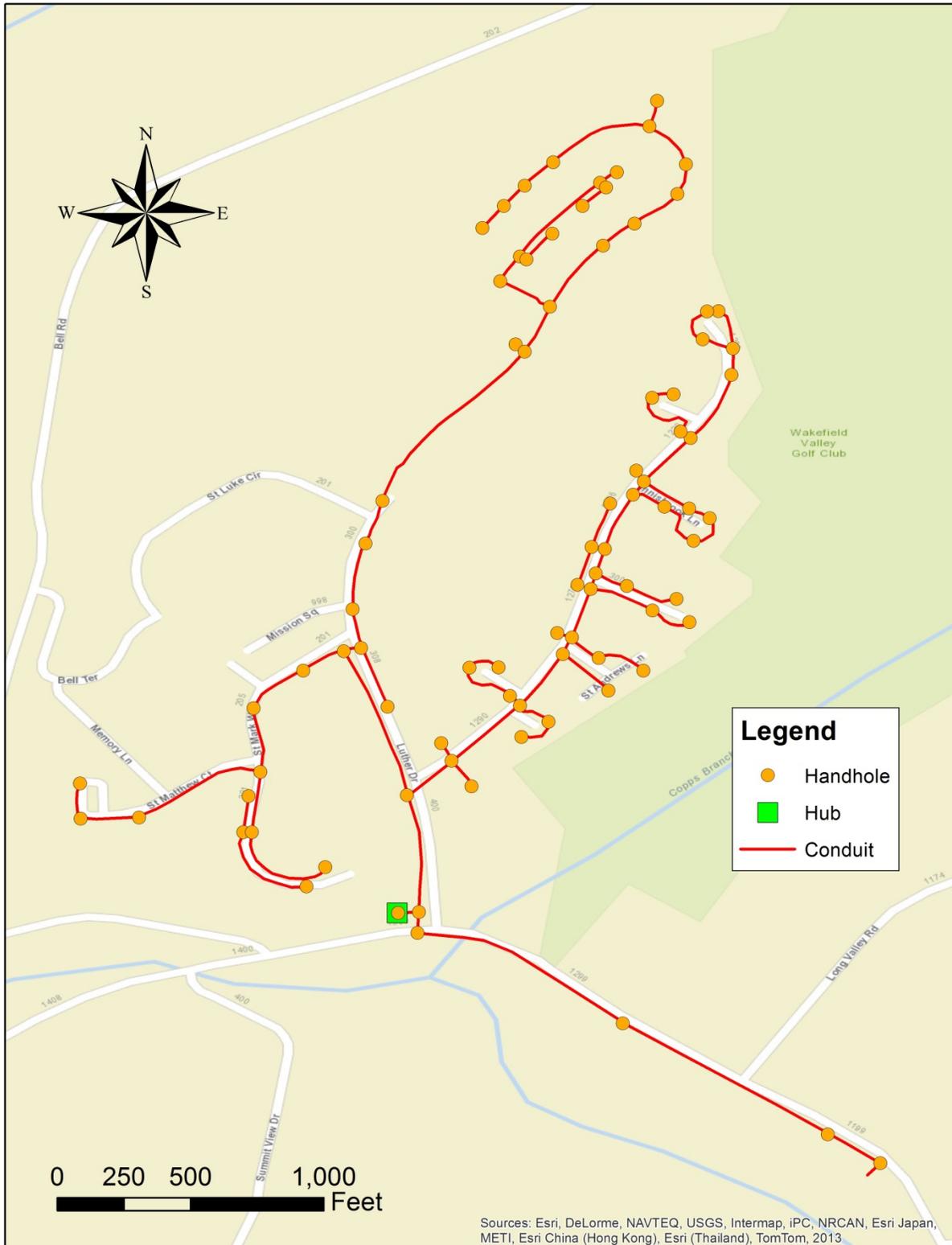


Figure 2: Service Area B - Fiber Network Route Map



The network is designed to facilitate capacity expansion and enable high-availability services to business customers over redundant, physically diverse fiber paths. As such, fiber optic cable strand counts, handhole placement, and specific routes reflect these future growth objectives. The backbone will generally consist of a two (2) 2-inch conduits, with laterals into businesses consisting of a single 2-inch extending from these backbone rings.

1.2 Summary of Scope of Work

The Contractor shall provide turnkey fiber network construction and material supply services, primarily consisting of, but not limited to following tasks:

- Initiation of utility of locate requests through the Miss Utility One Call Center, and strict adherence to all Maryland Miss Utility Laws;
- Sub-surface installation of conduit, primarily through the use of horizontal directional drilling, including existing utility locating through test pitting, traffic control, and permanent surface restoration;
- Installation of underground handholes/pull-boxes and ground rods, including permanent paved surface restoration;
- Placement of fiber optic cable and/or tracer wire in conduit;
- Installation of fiber splice enclosures and fiber splicing;
- Placement and assembly of fiber termination panels and related hardware;
- Placement and installation of outdoor fiber optic tap hardware;
- Indoor cable placement, including creating building penetrations, installation of innerduct and/or Electrical Metallic Tubing (EMT), and fiber termination;
- Optical performance testing of fiber optic strands;
- Installation of outdoor equipment enclosure(s);
- Installation of pre-fabricated equipment shelter; and
- Provision and storage of all materials related to the above construction.

The City and its engineering consultants will provide all engineering work documents necessary for the fiber network infrastructure construction, and will supply or facilitate all City, State Highway Administration (SHA), County, and environmental permitting required, as well as any private easements and permissions required. The City will not assess permitting fees to the Contractor for performance in accordance with the scope of this document. Any permitting costs to outside entities shall be borne by the City, and if required to be paid by the Contractor, shall be charged to the City at direct cost.

The City will provide reclaimed water at the City's Wastewater Treatment Plant to the Contractor as needed for directional boring, and will provide temporary storage space for materials and equipment, also at the City's Wastewater Treatment Plant.

The Contractor will provide regular progress reporting, and will closely coordinate its construction schedule with the City and its designated project management personnel. The Contractor shall provide a primary point of contact to the City for the duration of the project, and shall be expected to attend regular project status and management meetings. The Contractor shall provide daily progress reporting and forecasting of the construction locations for the following work day during active construction phases of the project, and shall provide weekly reporting of key progress metrics to be defined by the City.

2 General Requirements of Construction Services

This section defines general requirements and terms applicable to all construction services provided by the Contractor.

2.1 General Work Elements

The following elements apply to all work specified in this document unless a particular exception is noted in the specifications for the individual item.

- Each item shall be installed in accordance with the design at locations as shown on the plans or as directed by the City.
- Backfill in trenches, around forms and vaults, or at any other place shall be completed thoroughly using a power tamper in lifts of not more than six inches as it is being placed unless otherwise directed in writing by the City. Any paving material or fill removed for trenching shall be replaced in kind according to the City Standard Details.
- All holes and trenches shall be protected at the Contractor's expense from accidental entry by vehicles and pedestrians through the use of steel plates or other approved materials as required by the City or SHA Standard Specifications. Should the Contractor fail to provide adequate protection to the surroundings of a work site, or should the operations be carried out in such a way as to allow or cause damage to any roadway, street, sidewalk, the property of any utility, or other private or public property, work may be stopped until deficiencies are corrected. Should the repair not be undertaken and should it be necessary for the City to protect the area and/or make the repair, the cost shall be deducted from payment due the Contractor.
- At the discretion of the City, sod shall be removed either by the use of an approved sod cutter and then replaced, or topsoil and seed shall be placed. Care shall be taken to minimize the disturbance, and the area shall be fully restored.
- All concrete work shall be performed and tested in accordance with applicable SHA Standard Specifications. Concrete shall be finished to match any adjacent concrete. If no match is required, the surface area shall be broom finished and edged.
- All fiber cable shall be transported by and unreeled from a cable trailer(s). The laying of reels on the ground and subsequent removal of fiber cable from this position is prohibited.

2.2 Work Standards and Quality

2.2.1 Applicable Standards

The Contractor shall comply with the National Electrical Code, the National Electric Safety Code, and Bellcore standards, as well as any and all other applicable Federal, State and local laws and regulations. Contractor is retained by the City for this Project based on Contractor's expertise and

experience in the type of work that is the subject of this Contract. Contractor represents and warrants that Contractor is familiar with the aforementioned Codes and standards as well as those referenced below. Construction methods and techniques used by the Contractor shall be in accordance with the recommended practices and procedures published by leading industry manufacturers and trade associations, including but not limited to the following:

- Bellcore Blue Book of Construction Practices;
- Society of Cable Telecommunications Engineers (SCTE) Recommended Practices for Optical Fiber Construction and Testing;
- Maryland Occupational Safety and Health (MOSH) Division; and
- Federal Occupational Safety and Health Administration (OSHA) regulations.

The Contractors shall also follow all applicable local standards, including the SHA Standard Specifications and the City of Westminster Standard Specifications for Construction of Public Utility Systems, Roads, and Storm Drains. The Contractors shall be aware of all standards and their application. Ignorance or lack of knowledge shall not be an excuse for improper work to occur. Any work constructed in violation of any applicable code shall be corrected and re-installed properly at the Contractor's expense.

2.2.2 Unsatisfactory Operations

Should it be necessary to halt the work because of incorrect or unsatisfactory operations under the terms of the awarded contract or because of failure to follow safety standards applicable hereto, the Contractors must take immediate steps to remedy the deficiencies. Should repair or correction of any safety defect or deficiency not be immediately undertaken, and should the City be required to protect the site or make the repair or correction, the cost of such work shall be deducted from payment due the Contractor.

2.2.3 Inspection and Testing

The Contractor shall be responsible for performing quality control inspection and testing as required to verify that workmanship and products are provided as specified in this document, to include fiber optic cable performance testing, inspection of roadway and right-of-way restoration, and material testing of concrete and backfill placement. The Contractor shall be responsible for testing concrete structures and backfill to demonstrate compliance with the SHA Standard Specifications and the City of Westminster Standard Specifications for Construction of Public Utility Systems, Roads, and Storm Drains.

During any inspection, including, but not limited to, the final inspection of each work site, should it be found that non-concealed work is substandard, the burden of proof that the concealed work is up to standard shall be the Contractor's, who shall do such as is necessary, including exposing the concealed work, to clearly establish that the concealed work meets the specifications as outlined. Any and all items such as, but not limited to, improperly set couplings and concrete or masonry work that is not up to specified standards shall be removed and replaced at the Contractor's expense.

2.3 Underground Cable Construction

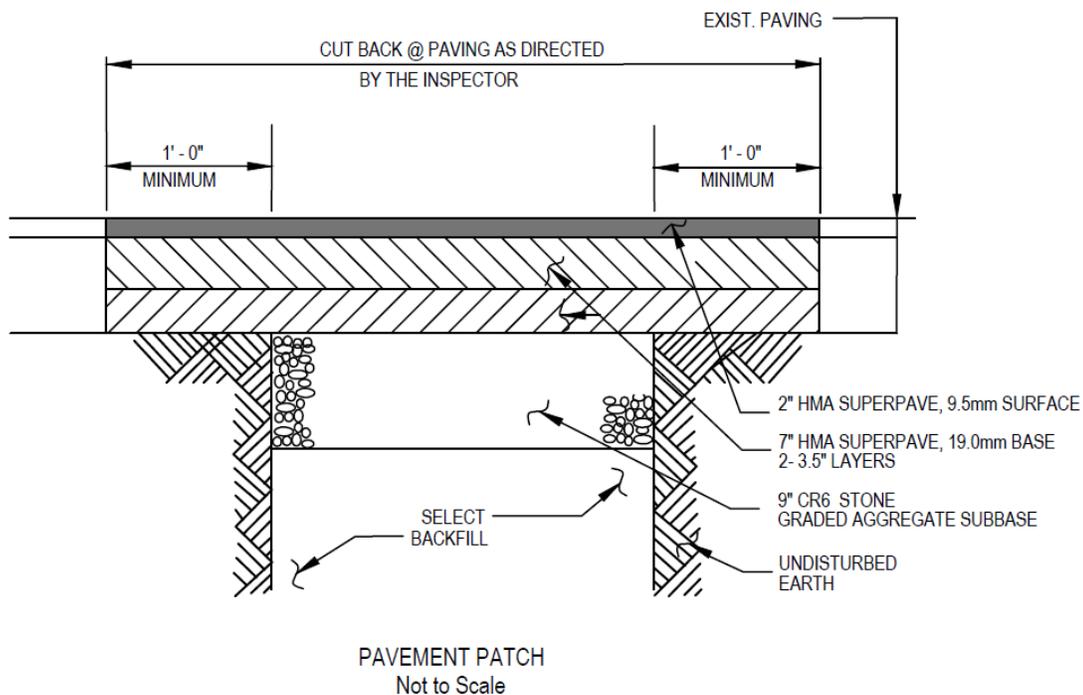
Before construction, the Contractor shall provide notification to underground utility owners using appropriate One-Call underground location and marking services.

Pull-tapes with linear length markers and a minimum tensile strength of 1,100 pounds shall be placed in all installed conduit. Tracer wire for purposes of locating conduit shall be placed within all installed conduit.

The minimum bend radius specified by the cable manufacturer shall be observed by the Contractor at all times when handling the fiber cable. Fiber cable storage loops shall be installed in handholes at locations prescribed by engineering drawings supplied by the City, and cable shall be coiled with a bend radius no less than specified for storage by the cable manufacturer.

The Contractor shall perform permanent surface restoration where required for all disturbed areas, including for test pits within City-maintained roadways and sidewalks according to City standards (<http://www.westgov.com/DocumentCenter/View/116>) and/or City Inspector instructions. Test pit restoration within City-maintained roads shall generally consist of a saw cut of pavement, at least one foot in all directions surrounding the perimeter of the disturbance, and a patch of hot mix (Figure 1). Maryland State Highway Administration and Carroll County restoration shall be done consistent with their respective permit requirements as applicable.

Figure 3: Typical City Roadway Repair Standards



The Contractor shall be required to perform temporary cold patch repairs of disturbed asphalt immediately.

In the event of accidental damage or otherwise unnecessary surface disturbances caused by the Contractor, the Contractor shall be responsible for all costs related to permanent restoration of all surfaces. The City shall determine, in its sole and absolute discretion, the reasonableness of surface disturbances caused by the Contractor. Field markers or marking poles shall be installed along underground fiber routes after installation.

2.4 Fiber Laterals / Business Service Drops and Inside Plant Construction

Fiber Laterals to City facilities and Service Drops to businesses will typically consist of a 12-count single mode, indoor/outdoor and/or plenum-rated fiber optic cable installed within a 2-inch inch underground conduit unless otherwise noted by engineering drawings supplied by the City.

Underground service drops to City facilities or businesses shall be placed in conduit from the nearest handhole according to supplied engineering drawings, and shall enter the facility at the existing utility and/or telecommunications demarcation location. Where available, new fiber drop cable shall be placed in existing conduit. A minimum of 100 feet or 15 percent of the drop length, whichever is greater, shall be provided and stored as excess fiber at the termination location or point of facility entrance unless specified otherwise by engineering drawings supplied by the City.

All inside plant construction shall meet applicable federal, state, and local codes, laws and regulations, as well as use approved construction methods and meet aesthetic standards of the building owner. All fiber cables must be properly bonded and grounded upon building entrance, where applicable. All fibers entering and exiting facilities shall be spliced in rack-mounted or wall-mounted splice enclosures and fiber patch panels.

Outdoor-rated cable shall not be run for a distance of more than 50 feet internal to the facility unless installed within Electrical Metallic Tubing (EMT). Building penetrations shall be properly sealed to prevent water seepage. Appropriate fire-stop sealant materials shall be used wherever cables, innerduct, and/or EMT must penetrate fire-rated walls or floor assemblies.

Each termination and patch panel will be labeled to identify the termination point of the fiber according to a naming schema to be approved by the City. Fiber connectors shall be LC/UPC.

2.5 Fiber Testing

The Contractor shall perform optical performance tests during construction to validate that installed cable is not damaged or defective, and that outdoor splices meet performance requirements. This testing will generally occur prior to termination of fiber strands, and will require the use of bare fiber adapters for temporary connectorization. This testing must occur after cable is installed with all intermediate backbone splices and mid-sheath splices completed on any particular segment. This testing shall consist of bi-directional end-to-end OTDR testing for each fiber strand installed.

Additionally, final acceptance shall be contingent upon successful end-to-end testing of each terminated fiber strand will be tested end-to-end to validate the optical performance of the entire link, as well as to verify that fiber splicing has occurred according to supplied splice matrices. This testing will consist of bi-directional OTDR testing, as well as direct optical attenuation and continuity testing using a calibrated optical source and power meter. This testing shall occur only after fibers are terminated on both ends of a link, and all intermediate construction and/or splicing involving the re-entry of installed splice cases or handling of the fiber optic cable is completed for a particular segment under test.

The Contractor shall provide the City with electronic documentation of all test results.

2.5.1 Testing Criteria

Testing shall be deemed successfully completed if: (1) maximum fiber losses meet manufacturer specifications, with an allowance for splices and connectors; (2) individual splice losses do not exceed 0.1 dB; and (3) maximum mated connector losses do not exceed manufacturer specifications. Testing will be performed by Contractor personnel, and may be observed by designated representatives of the City. The City may request and/or perform additional testing to verify results prior to accepting test data.

2.5.2 OTDR Testing Procedure

An OTDR shall be used to measure and document splice losses and connector losses. To correctly identify abnormalities at a short range, a 100-meter or longer launch cable shall be used between the OTDR and the fiber under test. Bi-directional traces shall be acquired for each fiber. If the connection of the launch cable to the patch panel requires optimization by the operator, sampling acquisition will commence upon completion of the optimization.

Each fiber will be identified, and the results of the test for each fiber will be recorded as indicated below. The test will be repeated for each of the fibers linking a particular site. All tests will be made at 1310 nm and 1550 nm.

Settings on the OTDR shall reflect the following:

- A. The Refractive Index shall be set for the actual fiber utilized (commonly-used Corning SMF-28 single mode fiber has a refractive index of 1.4677 at 1310 nm);
- B. Pulse width no greater than 100 ns (10m) for all fiber lengths;
- C. Scattering coefficient specified by the fiber manufacturer for each wavelength tested;
- D. A minimum of 10,000 sampling acquisitions (averages);
- E. Maximum range set to no more than 10 km for all fiber length less than 10 km;
- F. Maximum range set to no more than 25 km for fiber lengths greater than 10 km; and
- G. Event threshold: 0.05 dB.

A uniform file-naming scheme for recorded data shall be used, complying with the following conventions or mutually agreed conventions by the City and Contractor:

xxxx###_yyy***

*Where:

- xxxx = four-place alpha-numeric site designation, splice location (SP01, SP02, etc.), or fiber tap (T01A, T01B, etc.) at which the OTDR is located
- ### = three digit fiber port number (or fiber strand number for un-terminated fiber)
- yyyy = four-place alpha-numeric site designation, splice location (SP01, SP02, etc.), or fiber tap (T01A, TP01B, etc.) at the opposite end from where the OTDR is located
- *** = three digit fiber port number (or fiber strand number for un-terminated fiber)

For example, HUBB027_T02B001.trc would be the OTDR trace captured from port 27 at the Hub for Service Area B to port 1 on Tap 2B. The filename T02B001_HUBB027.trc would be for the OTDR trace captured on this same fiber in the opposite direction.

Installed optical fiber OTDR test documentation shall include:

- A. Total fiber length;
- B. Individual fiber traces for complete fiber length;
- C. Losses of individual splices and connectors;
- D. Losses of other anomalies;
- E. Wavelength tested and measurement directions;
- F. Manufacturer, model and serial number of the test equipment; and
- G. Name and company of the technician performing the tests.

All data collected at each location during the tests shall be recorded at the time of the tests using electronic means.

2.5.3 Optical Power Meter Test Procedure

Optical power meter measurements shall be made at the same time as the OTDR tests to determine overall fiber loss and to ensure that fibers have appropriate end-to-end continuity (fibers not crossed). Power meter testing shall be performed at both 1310 nm and 1550 nm and shall report the relative loss of each fiber strand.

2.6 Engineering Redlines

The Contractor shall perform field markups of engineering drawings provided by the City reflecting specific as-built construction parameters following construction. All such documentation shall be provided to the City and any designated engineering personnel.

Redlines shall identify the lateral placement of conduit relative to its distance from the curb or other defined landmark (roadway centerline, sidewalk, etc.) at intervals not to exceed 50 feet, and shall provide precise latitudinal and longitudinal coordinates of the center of each handhole. Redlined prints shall identify any deviations from City supplied engineering drawings, including actual cable slack distances placed (whether more or less than specified).

The Contractor shall supply the City with log data from the directional bore guidance system used during construction, indicating depth of the conduit placement. Also, redlines shall indicate

measured depth of conduit placement for conduit placed using open trenching or open cut methodologies.

Construction may not deviate from City supplied engineering drawings without prior approval from the City or its appointed designee.

2.7 Material Handling

2.7.1 Materials Transport

The Contractor shall be responsible for trans-shipping material between their yards and for maintaining the inventory of these items once acquired from the City or received from suppliers on behalf of the City. Materials or equipment shall be transported in a legal fashion and shall be protected from damage or loss. Lost or unaccounted material will be the responsibility of the Contractor, and will be reimbursed to the City.

2.7.2 Materials Damaged

Any damage to or loss of any materials or equipment supplied by the City to the Contractors, which occurs from handling or transport, or from any other source or way, shall be the sole responsibility of the Contractor and the value thereof shall be deducted from any payments due the Contractor.

2.7.3 Salvageable Materials

The Contractor shall salvage all useful materials and reuse materials for other City projects to the extent feasible at the Contractor's discretion.

2.7.4 Materials Returned to the City

The Contractor shall return to the City any City-supplied materials and fiber optic cable greater than 300 feet.

2.8 Safety Documentation and Training

The Contractor shall comply with all the requirements set forth in Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by Department of Labor regulations (29 CFR Part 5). The Contractor shall maintain records of safety training classes held, and any safety certifications held by its employees and sub-contractors.

The Contractor, its employees, agents, and subcontractors must be trained on the Underground Damage Prevention statutes and best practices prior to excavating on the City project. All Contractor crew members must carry a training verification card with the date of training and prime contractor/subcontractor crew name at all times.

2.9 Construction Safety and Health Standards

The Contractor and any subcontractors shall not require any laborer or mechanic employed in performance of the contract to work under working conditions or in surroundings which are unsanitary, hazardous, or dangerous to the worker's health or safety, as determined under construction safety and health standards (Title 29, Code of Federal Regulations, Part 1926, published in the Federal Register on December 16, 1972), as revised from time to time. The Contractors and any subcontractors shall comply with any and all MOSH and OSHA regulations.

2.10 Traffic Control and Work Area Protections

The Contractor shall provide all equipment necessary to protect the well-being of employees, motorists and all others who come in contact with construction areas. Such precautions include, but are not limited to, crash cushions, flashing arrow boards, lighted barricades, steel plates, and concrete barriers. The Contractor shall ensure that all required signage meets Federal, State and Local standards.

The Contractor shall furnish, erect, maintain, relocate, and/or remove traffic control devices in accordance with the Contract Documents, as well as the latest versions of the SHA "Book of Standards", or as directed by the City.

All traffic control devices furnished by the Contractor shall remain the property of the Contractor, unless otherwise specified by the contract. Traffic control devices shall include, but are not limited to signs, drums, barricades, barriers, electronic variable message boards, cones, delineators, flashing arrow panels, temporary guardrails, temporary concrete median barriers, vehicle-mounted temporary impact attenuators, pavement markings, raised reflective pavement markers, SHA Certified flaggers, and pilot vehicles.

2.10.1 Traffic Control Construction Methods

Existing public streets or highways shall be kept open to traffic at all times by the Contractor unless permission to close these streets, or portions thereof, is granted by the City. In addition, the City must be contacted **BY THE CONTRACTOR A MINIMUM OF 24 HOURS** before any streets are closed or partially closed. The City may request that the Contractor make additional notifications to property owners.

Traffic control devices shall be installed at the inception of construction operations, and shall be properly maintained, relocated as necessary, cleaned, and operated during the time they are in use. They shall remain in place only as long as they are needed and shall be immediately removed thereafter. Where operations are performed in stages, only those devices that apply to the conditions present shall be left in place.

During periods when not warranted, warning signs and other devices shall be removed from the work area, covered with specified material, or otherwise positioned so that they do not convey their message to the traveling public. Covering material shall be maintained in a neat manner during its use.

Weeds, brush, trees, construction materials, equipment, etc. shall not be allowed to obscure any traffic control device in use. There will be no separate compensation for any trimming or cutting required for this purpose.

Competent and properly trained flaggers, properly attired and equipped, shall be provided in accordance with SHA standards and when directed by the Engineer or Inspector or when the Contractor deems it necessary to safely handle traffic through the construction zone.

The Contractor shall assume full responsibility for the continuous and expeditious maintenance of all construction warning signs, barricades, and other traffic control devices which in the opinion of the Engineer are damaged by traffic or other means or deteriorated beyond effectiveness. Conditions covered under maintenance shall include but not be limited to replacement due to loss of reflectivity; replacement of broken supports; plumbing of leaning signs; cleaning of dirty signs, barricades, and other devices; repair of defaced sheeting and legend; and replacement of stolen or vandalized items. All items used for traffic control shall be maintained in a satisfactory condition. Failure to maintain all traffic control devices in a satisfactory condition may be cause for suspension of construction operations until proper traffic control is re-established.

The Contractor shall follow the construction procedure and maintenance of traffic as shown on the Traffic Control Plan, unless a more workable plan is agreed to by the City prior to or during the execution of the work. The Contractor shall complete each construction phase in the sequence shown if phasing is specified.

The Contractor shall continuously review and maintain all traffic control measures to assure that adequate provisions have been made for the safety of the public and workers.

2.11 Accident Reporting

Any accident resulting in damage to property or causing personal injury within the limits of a work site shall be immediately reported to the appropriate police agency, other required agencies and the City.

The Contractor shall immediately contact the Utility Operator/Owner and the City when damage to an underground facility is identified. If a Natural or Propane Gas line is damaged, the Contractor must call 911 prior to notifying the Utility Operator. The Contractor shall not backfill around the underground utility line until the Utility Operator has repaired the damage and has given clearance to backfill. The City will not pay the Contractor for labor, vehicles, material, or equipment or any other cost associated with the repair to any at-fault damage. Failure to comply may result in a verbal warning, suspension of the crew, loss of work, and/or termination.

3 Construction Specifications

The following sections define the technical requirements and specifications for construction services and materials to be provided on a per unit basis according to the Bid Forms. All work performed shall adhere to all applicable requirements of this Section, and shall include all necessary materials for completing the construction tasks according to the task and material specifications provided.

Bids shall be for turnkey delivery of a functional fiber optic network as specified in this document and according to the estimated quantities specified in the Bid Form. The City reserves the right to increase or decrease quantities from estimates included in the Bid Form as required to fulfill the intended project scope or as needed to accommodate the project budget. Bid pricing shall remain valid during the term of the negotiated contract for same services required for the expansion or modification of the particular project scope or design. Proposed pricing for each unit shall reflect the entirety of fees due to the Contractor for the scope of work defined by this document, inclusive of materials, shipping, direct labor expenses, benefits, profit, overhead, and any indirect costs. Pricing shall include all basic mobilization, site preparation, work area protection, site restoration, and standard traffic control necessary to perform the task safely and according to all applicable specifications in this document.

Unless otherwise specified, the basis of pricing and payment for lineal foot-based units shall be network route distance, not material length (conduit, innerduct, etc.). The City shall not be invoiced for costs associated with scrap or waste materials. Prices are to include all shipping costs. Bidders are to review the Project specifications carefully to determine if any miscellaneous materials not specified in this Section will be necessary to complete the defined project scope, and to include all necessary materials in the bid.

The selected contractor is to store and issue all material for construction, except as otherwise directed by the City. The materials specified, or an approved equivalent, shall be supplied by the Contractor and used as needed to complete the scope defined in this document. All materials supplied shall be new and unused and, where applicable, all materials and equipment supplied shall be UL-approved.

The "Project Total Bid" shall be the basis of bid pricing evaluation, and must represent a turnkey price for construction of the Westminster Fiber Optic Communications Network as described within this document. Unit pricing for items indicating a quantity of zero (0) are included to solicit pricing for alternative construction methodologies and/or material options that may offer functional or cost savings benefits depending on particular field conditions and/or design revisions. Pricing for these items will be considered in evaluating the completeness of the response and overall value provided.

3.1 Underground Conduit and Cable Installation

Item #1: Installation of Ground Rod

This item includes the supply and installation of a grounding rod, as well as a length of copper wire to bond to the item to be grounded. A minimum of 8 feet of the ground rods must be driven

into undisturbed soil. The contractor shall supply up to 30 feet of copper grounding wire and shall cut the wire to the length as necessary. The grounding wire shall be properly bonded to the grounding rod.

Supplied materials shall consist of the following components:

- Ground Rod, Sectional, 13 mil copper-clad steel, 5/8-inch diameter, 8-foot length, Erico 635883 or approved equivalent.
- Driving Stud, 5/8", high strength carbon steel, must withstands hammer impact while driving sectional rods (same manufacturer as rod)
- Ground Rod Clamp, 5/8", high strength bronze alloy, corrosion resistant, accommodates #12 to 1/0 AWG, suitable for direct burial. Electric Motion EM 2DB-01 or approved equivalent.
- #6 copper ground wire, green insulation, typically 6-foot length.

Item #2: Installation of Conduit

This item consists of the supply and installation of rolled duct (conduit), having a nominal diameter ranging from 1.25-inches to 4-inches, with all necessary fittings. The City has the right, in its sole and absolute discretion, to reject any installation method proposed for a given work site.

Note that installation of conduit, regardless of methodology, shall comply with all applicable specifications in this document. Surface restoration, test pitting, work area protection, and related work not otherwise explicitly included in other construction Bid Items shall be incidental to this Item, and must be included in the unit pricing for this Bid Item.

The Contractor shall provide high-density polyethylene (HDPE) roll duct meeting applicable ASTM standards. All supplied conduit shall have a smooth inner wall and smooth outer wall. All conduit shall be pre-lubricated, and contain a pre-installed 1100 pound polyester pull tape.

Unless otherwise specified by City-supplied engineering drawings, conduit shall have a minimum cover of 36 inches as measured from the finished grade, and a minimum of 48 inches below the elevation of the adjacent edge of pavement, whichever is deeper. Conduit not terminated to a base or in a vault shall be terminated two feet beyond the edge of the finished grade otherwise directed by the City. Conduit shall not extend more than three inches inside a vault or junction well.

Splicing or joining of HDPE conduit is prohibited without prior approval from the City. All conduit joints shall be sealed with the appropriate cement to ensure that the two conduit pieces bond to one another to form a solid waterproof link. For metallic conduit, install metallic bushings and bond conduits.

If not already pre-installed by the manufacturer, a polyester or polypropylene pulling rope or tape with a minimum rated strength of 1,100 pounds shall be installed in each conduit for future use.

A tracer wire for locating purposes shall be installed in at least one conduit in each segment or conduit bank as part of this item immediately upon placement of the conduit. The tracer wire shall be 10 AWG copper wire, UL-listed, with green insulation. The tracer wire shall be pulled simultaneously with the installation of fiber optic cable in a continuous length. Where multiple pulls

of fiber-optic cable are required and conduit is placed in the same trench or bore, only one tracer wire is required. Where multiple pulls of fiber-optic cable are required and conduits may separate into individual trenches or bores, install a tracer wire in each conduit run. Provide waterproof butt splices where tracer wire is spliced. Splicing is allowed only in handholes, and must be bonded to the electrical ground rod in each handhole.

For all conduits entering handhole boxes, seal spare conduits with approved duct plugs. Seal conduits containing fiber-optic communications cable with mechanical sealing devices.

All underground conduit paths shall be marked using visible, above-ground markers to prevent unintentional damage. Markers shall be placed so that the next closest marker is clearly visible in either direction, or approximately every 75 feet, whichever is less. Soil Disk markers shall be used to mark conduit paths in of frequently grass cutting and maintenance. Soil Disk markers shall be orange disks, 6 to 8-inch diameter, with 13-inch stainless steel stakes. Domed Post Markers shall be used along road-sides wherever they can be placed without causing a safety or maintenance obstruction. Domed Post Markers shall be white, 6-foot height, 3.5-inch diameter, and include an orange dome cap and anchor bar for ground attachment. Soil Disk Markers and Dome Post Marker caps shall be labeled with the following text in in UV stabilized black lettering:

“WARNING – BURIED FIBER OPTIC CABLE”
“Call 811 Before Digging”
“City of Westminster”

On or inside a building, conduit shall be installed by drilling anchors into concrete, brick, stone, steel, or wood and mounting the conduit with the proper clamps or hangers.

If bends are required during installation, they must be sweeping bends. All bends shall have a minimum radius of no less than ten times the outer diameter of the conduit, or 20-inches, whichever is greater. No individual conduit segment between two handholes shall have more than 180-degrees of total bends. The City shall be consulted before any bends are installed to ensure that the proper arc is provided.

Conduit placement shall consist of the following varieties:

- 1.25-inch (1¼") HDPE
 - SDR 11
 - 1.660-inch nominal outer diameter
 - 1.358-inch nominal inner diameter
 - 0.151-inch minimum wall thickness
 - Carlon #A6C6D1JNNB or approved equivalent

- Two-inch (2") HDPE
 - SDR 11
 - 2.375-inch nominal outer diameter
 - 1.943-inch nominal inner diameter
 - 0.216-inch minimum wall thickness
 - Carlon #A13C6D1JNNB or approved equivalent

- Four-inch (4"), HDPE
 - SDR 11
 - 4.500-inch nominal outer diameter
 - 3.682-inch nominal inner diameter
 - 0.409-inch minimum wall thickness
 - Carlon #A16C6D1JNNB or approved equivalent.

Item 2a: Installation using Directional Boring

This item consists of horizontal directional drilling/boring and placing conduit. Directional boring is the required underground placement technique unless approved otherwise by the City. The size of a bore shall not exceed the outside diameter of the conduit by more than one (1) inch. If it does, cement grout shall be pumped into the void.

At all points where HDPE conduit will traverse under roadways, driveways, sidewalks, or Controlled Access Areas including entrance/exit ramps, conduit shall be placed a minimum depth of 4 feet or 8 times the back reamer's diameter, whichever is deeper. Conduit shall be placed to maintain a clearance of one foot (12-inches) from drainage pipe less than 60-inches in diameter while maintaining all other required clearances. A depth of 15-feet below finished grade may be required when crossing an SHA-maintained controlled access highway, or as specified by approved permit drawings.

The Contractor shall guarantee the drill rig operator and digital walkover locating system operator are factory-trained to operate the make and model of equipment provided and have a minimum of one year experience operating the make and model of drill rig. The Contractor shall submit documentation of the operators' training and experience for review at least two weeks before start of directional drilling operations.

The Contractor shall provide a means of collecting and containing drilling fluid/slurry that returns to the surface such as a slurry pit, and shall provide measures to prevent drilling fluids from entering drainage ditches and storm sewer systems. The Contractor shall prevent drilling fluid/slurry from accumulating on or flowing onto pedestrian walkways, driveways, and streets. Immediately remove all drilling fluids/slurry that are accidentally spilled. The Contractor shall transport waste drilling fluid/slurry from site and dispose of in a method that complies with local, state and federal laws and regulations.

The Contractor shall perform electrical grounding of the drill rig when in use in accordance with the manufacturer's recommendations.

All excavated material shall be placed near the top of the working pit and disposed of properly. The Contractor shall backfill pits and trenches to facilitate drilling operations immediately after drilling is completed.

During drilling operation, the Contractor shall locate the drill head every 10 feet along drill path and before traversing underground utilities or structures using a digital walkover locating system.

The locating system must be capable of determining pitch, roll, heading, depth, and horizontal position of the drill head at any point.

Upon completion of the conduit installation, the Contractor shall perform a mandrel test on the conduit system to ensure conduit has not been damaged using a non-metallic mandrel with a diameter or approximately 50% of the inside diameter of the conduit. If damage has occurred, replace the entire length of conduit and ensure that pull line is re-installed.

Item 2b: Installation Under Existing Pavement - Open Cut

This item consists of trenching/cutting in existing pavement and placing conduit in an open trench. All open cutting of roadways must first be approved by the City or applicable permitting authority. The conduit shall be installed by cutting a slot in the pavement with a masonry saw. The contractor shall be responsible for the removal of all cut pavement and the replacement and correction of any damaged pavement once the conduit(s) are installed.

The Contractor shall install HDPE conduit for all underground runs, unless otherwise specified by engineering drawings for special conditions (i.e. where conduits cross beneath railroad tracks). If more than one conduit is required between the same points, install conduit in one common trench. The Contractor shall install non-detectable warning tape in each trench directly above the conduit run at a depth of approximately 12 inches below existing grade. Warning tape shall be bright (Day-Glow) orange and 3-inch (or 75 mm) wide to allow for easy visual detection with wording "WARNING – OPTICAL CABLE" or similar message approved in advance, repeated on tape at least every 3 feet or 1 meter.

The Contractor shall remove all rock and debris from backfill material, and shall remove excess material from site and compact area. The Contractor shall backfill with excavated material and compact to 95% of original density per AASHTO T-180. The purpose of the backfill is to provide a gradual change in elevation of the trench, so that excessive bending and stress will not be transferred to conduits once underground conduit system is installed.

After installation of conduits and upon completion of tamping and backfilling, perform a mandrel test on each conduit to ensure no conduit has been damaged. Upon completion of the conduit installation and backfill, the Contractor shall perform a mandrel test on the conduit system to ensure conduit has not been damaged using a non-metallic mandrel with a diameter or approximately 50% of the inside diameter of the conduit. If damage has occurred, Contractor shall replace the entire length of conduit at no cost to City. Contractor shall ensure pull line is re-installed.

The Contractor shall be responsible for performing temporary patching of affected pavement immediately upon installation of conduit.

Item 2c: Installation in Unpaved Right-of-Way – Open Trench

This item consists of trenching/cutting in unpaved right-of-way and placing conduit in an open trench. When trenching is used, the opening shall be filled half way with the cover material, and tamped down firmly before filling in the remainder of the opening to 12 inches below grade.

A fiber optic warning tape shall be installed and the remainder of the fill shall be added, tamping down the top layer. The Contractor shall install non-detectable warning tape in each trench directly above the conduit run at a depth of approximately 12 inches below existing grade. Warning tape shall be bright (Day-Glow) orange and 3-inch (or 75 mm) wide to allow for easy visual detection with wording “WARNING – OPTICAL CABLE” or similar message approved in advance, repeated on tape at least every 3 feet or 1 meter.

The Contractor shall rake smooth the top 1 ½ inches, and seed with same type of grass as surrounding area. Finish unpaved areas flush with surrounding natural ground.

Item #3: Installation of Additional Conduit

This item consists of the supply and installation of one or more additional conduits in conjunction with the installation of a single conduit (Item 2). Additional conduits may be stacked one on top of the other, side by side, or in a matrix. The orientation shall be at the contractor’s discretion, but conduits shall not twist around one another or be allowed to deviate from straight-line paths, except in the case of bend installations. Conduits installed at the same time in the same trench or slot shall remain oriented the same in relation to one another throughout the conduit run.

Additional conduits installed using directional boring shall be limited to a total of three 1.25-inch or two 2-inch conduits. Proposed pricing shall consist only of incremental costs associated with the additional conduit(s) beyond that of Item 2.

Item #4: Installation of Innerduct in Conduit, 1.25-inch corrugated HDPE

This item consists of the supply and installation of one or more innerduct in an existing or newly installed empty conduit or other existing outdoor cable pathway.

The Contractor shall rod existing conduit to ensure that it is free of any obstructions before installing a pull rope or innerduct. If a pull rope is not already pre-installed in the innerduct, the Contractor shall place a pull rope or mule tape in each innerduct.

Supplied innerduct shall be high-density polyethylene (HDPE) innerduct. All innerduct shall contain a pre-installed 1100-pound polyester pull tape, and shall have the following characteristics:

- Corrugated construction, orange
- 1.25-inch nominal inner diameter
- 0.035-inch minimum wall thickness
- Plenum rated and UL listed to UL910
- Tensile pulling strength: 319 pounds
- Color: orange
- Carlon A6D2S1JNNBxxxx, or approved equivalent.

Item #5: Installation of Handholes

This item consists of providing and installing conduit handholes. The Contractor shall supply communications handhole boxes (“handholes”) meeting dimensional and structural loading requirements specified by City-supplied engineering drawings and all applicable permit

requirements. Handholes will have a minimum 36" depth below surface that may be obtained by stacking handholes. All handhole lids must be appropriate for the required loading.

All handholes shall have the appropriate ANSI 77-2010 Tier designation/load rating and/or AASHTO Load Rating embedded in a surface that will be visible after installation. All handholes shall be straight-walled with an open bottom. Vaults and iron vault lids meeting AASHTO HS-20 are required for placement within travel lanes of roadways. ANSI/SCTE Tier 15 or Tier 22 handholes may be placed outside of travel lanes in the adjacent right-of-way.

Handholes shall each be provided with a lid, lid bolts, and any required reducing coupler to support 2-inch and 1.25-inch nominal diameter conduit. Supplied lids shall be engraved with the words "Westminster Fiber Optics".

The base of the handhole shall have gravel to a depth of one inch, or as specified by the City, to promote drainage of water. All conduit ends shall be sealed to minimize water ingress.

The Contractor shall supply and install the following handhole varieties meeting the specified loading standard and having the specified nominal outer dimensions:

Item #5a: Installation of Type 1 Handhole – HS-20, 24" x 36" x 36"

- AASHTO HS-20 Rated
- Composite Construction, UL listed to ANSI 77-2010
- 11" x 18" x 18" dimensions: 24" x 36" x 36" (WxLxD)
- RUS listed
- Straight-walled, open bottom
- Concast FHR-24-36-36, or approved equivalent

Item #5b: Installation of Type 2 Handhole – Tier 22, 24" x 36" x 36"

- Tier 22 Rated (22,500 pound design load, 33,750 pound test load)
- Composite Construction, UL listed to ANSI 77-2010
- Nominal dimensions: 24" x 36" x 36" (WxLxD)
- RUS listed
- Straight-walled, open bottom

Item #5c: Installation of Type 3 Handhole – Tier 22, 11" x 18" x 18"

- Tier 22 Rated (22,500 pound design load, 33,750 pound test load)
- Composite Construction, UL listed to ANSI 77-2010
- Nominal dimensions: 11" x 18" x 18" (WxLxD)
- RUS listed
- Straight-walled, open bottom

Item #5c: Installation of Type 4 Handhole – Tier 22, 16" x 22" x 18"

- Tier 22 Rated (22,500 pound design load, 33,750 pound test load)
- Composite Construction, UL listed to ANSI 77-2010
- Nominal dimensions: 16" x 22" x 18" (WxLxD)

- RUS listed
- Straight-walled, open bottom

Item #6: Fiber Optic Cable Placement in Conduit

This item consists of the supply and installation of fiber optic cable in existing or newly installed conduits that may or may not contain an existing communications cable or cable(s). A strain limiter/release element that will part if the strain exceeds 300 pounds for 12-count fiber and 600 pounds for larger cables shall be used for outdoor fiber optic cable between the pulling grip and the pulling medium.

Any and all cable(s) pulled into any conduit without the use of an acceptable pulling grip, kellems or equivalent, or without the use of a strain limiter/release element, or by using methods which may result in pulling forces in excess of strain release material set forth herein or prescribed by industry standards are unacceptable.

Any and all cable(s) installed in violation of allowed methodology shall be removed and replaced with new cable(s) using correct methods at no cost to the City.

All cables shall be labeled in each handhole and at each termination point using pre-printed wrap-around cable labels, day-glow green (or orange). Labels shall be 4-inches by 4-inches, William Frick P/N WFS-ES-0004, or approved equivalent, and shall read “Westminster Fiber Optic Cable,” and shall identify the cable direction at each splice or termination point by indicating the next adjacent splice or site for each cable segment.

The Contractor shall supply fiber optic cable in accordance to the following specifications:

- Ribbon optical cable for backbone applications, containing 12-strand ribbons, conforming to international standards ITU-T G.652.D and Telcordia G-20.
- Loose buffer tube optical cable for service drop applications, containing 12-strand buffer tubes, in 12, 24, and 48-count sheaths, conforming to international standards ITU-T G.652.D and Telcordia G-20.
- Delivered on reels holding a contiguous fiber cable length of up to 20,000 feet. Pricing shall include return shipping of steel reels if used. The Contractor shall be expected to coordinate cable orders to ensure cable lengths are provided as needed support contiguous cable runs without splicing (not including mid-sheath splices) according to final designs.
- Comprised of All Dielectric (AD) materials.
- Comprised of a gel-free cable design incorporating dry water-blocking elements.
- Marked, in permanent white characters, with:
 - Manufacturer name
 - Month and year of manufacture
 - Number of optical fibers

- Sequential length markings, minimum of every two feet, in feet

The Contractor shall supply and install the following fiber cable varieties meeting the above specifications:

- Item #6a: 12-strand, loose buffer tube, outdoor cable**
- Item #6b: 12-strand, loose buffer tube, plenum-rated**
- Item #6c: 24-strand, loose buffer tube, outdoor cable**
- Item #6d: 48-strand, loose buffer tube, outdoor cable**
- Item #6e: 144-strand, ribbon, outdoor cable**
- Item #6f: 288-strand, ribbon, outdoor cable**

Placement of fiber optic cable shall be invoiced according to lineal units of material placed, to include footages of slack loops installed. Slack loops shall be installed in each handhole to provide a minimum of 10-percent additional cable material compared to the physical route distance to facilitate maintenance and splicing, or as specified by City-supplied engineering drawings.

Item #7: Removal of Fiber Optic Cable from Conduit

This item consists of removing one or more fiber optic cable(s) from existing conduits. All may be removed, or one or more cable(s) may remain. Hand pulling methods are required. Prior written approval by the City is required for the use of any power assisted method of pulling wire or cable(s) from conduit. A strain limiter/release element that will part if the strain exceeds 600 pounds shall be used between the pulling grip and the pulling medium.

Removed fiber optic cable shall be coiled, OTDR tested according to specification herein, and returned to the City.

3.2 Fiber Splicing and Testing

Item #8: Installation of New Straight-Through Splice Enclosure

This item consists of the supply and installation of a non-encapsulated, gasket-sealed splice enclosure, but does **not** include the actual strand splicing. The item includes the equipment setup, preparation of cable ends for splicing, and installing the splice enclosure in an underground handhole for one or more cables containing up to 288 fiber strands.

Splice enclosures shall be suitable for splicing both ribbon and loose-tube fiber cable types. Each enclosure shall be provided with all necessary accessories and hardware, including splice trays, splice protection sleeves, cable retention hardware, port plugs/grommets, grounding accessories, and closure sealing accessories. The contractor shall supply fiber optic splice enclosures, including splice trays and related hardware, equipped for at least four feeder cables and a minimum of 288 mass fusion (ribbon) splices. Suitable enclosures include the Preformed Line Products COY 1-002 with LGSTR144 Trays, or equivalent.

Splice enclosure installation shall be in accordance with applicable standards and manufacturer instructions. All enclosures shall be tested in accordance with Telcordia GR-771-CORE.

Item #9 Installation of New Mid-sheath Splice Enclosure (Ring Cut)

This item consists of the supply and installation of a non-encapsulated, gasket-sealed splice enclosure for a mid-sheath splice, but does **not** include the actual strand splicing.

This item allows access to one or more fibers for splicing without cutting the entire cable. It consists of cutting away a section of cable jacketing to expose the buffer tubes / ribbons, cutting or splitting open a buffer tube / ribbon (depending on whether or not there are active fibers), preparing the designated fibers for splicing, and installing a splice enclosure to house the exposed section of cable. It typically will be performed on the City's backbone fiber to facilitate splicing to a new or existing lateral fiber cable, service drop cable, or fiber tap stub cable.

Care shall be taken not to cut any fibers that are in active use, and may require use of an active fiber identifier to verify strands not in-use before cutting strands. The work may include pulling fiber cable slack from adjacent handholes, and includes installing the splice enclosure in an underground pull box or vault for one or more cables containing up to 288 fiber strands.

Each enclosure shall be provided with all necessary accessories and hardware, including splice trays, splice protection sleeves, cable retention hardware, port plugs/grommets, grounding accessories, and closure sealing accessories. The contractor shall supply fiber optic splice enclosures, including splice trays and related hardware, equipped for at least six feeder cables / fiber tap stub cables and up to 144 individual (loose buffer tube) splices. Suitable enclosures include the Preformed Line Products 8006944 with 80809958 Trays, or equivalent.

Splice enclosures shall be provided equipped for the following splice capacities:

Item #9a: 72-strand, single splices (loose buffer tube)

Item #9b: 144-strand, single splices (loose buffer tube)

Splice enclosure installation shall be in accordance with applicable standards and manufacturer instructions. All enclosures shall be tested in accordance with Telcordia GR-771-CORE.

Item #10: Fiber Splicing, Individual Strand (per strand)

This item consists of splicing individual ends of two ends of single-mode fiber strands, placing the fused fiber in a splice tray, and placing the tray in a splice enclosure, wall-mounted housings, or rack-mounted housings. All fiber shall be fusion-spliced. Splices shall have an optical attenuation of no more than 0.1 dB at 1550 nm and 1310 nm.

Item #11: Fiber Splicing, Mass-Fusion (per ribbon)

This item consists of splicing two ends of ribbon fiber, consisting of 12 to 24 strands, placing the fused fiber in a splice tray, and placing the tray in a splice enclosure, wall-mounted housings, or rack-mounted housings. All fiber shall be fusion-spliced. Splices shall have an optical attenuation of no more than 0.1 dB at 1550 nm and 1310 nm.

Item #12: OTDR Testing of Un-terminated Backbone Cable

This item consists of bi-directional OTDR testing of an un-terminated, installed fiber optic cable, requiring the use of bare fiber adapters prior to termination. Pricing shall be provided on a per strand basis for backbone cables ranging from 144-count to 288-count.

All fiber strands shall be tested using an OTDR at 1310 nm and 1550 nm, and documented according to the specifications in Section 2.5.

Item #13: OTDR Testing of Un-terminated Lateral Cable

This item consists of bi-directional OTDR testing of an un-terminated, installed fiber optic cable, requiring the use of bare fiber adapters. Pricing shall be provided on a per strand basis for lateral cables ranging from 12-count to 96-count.

All fiber strands shall be tested using an OTDR at 1310 nm and 1550 nm, and documented according to the specifications in Section 2.5.

Item #14: Final Acceptance testing of Terminated cable

This item consists of bi-directional OTDR and power meter testing installed fiber optic cable, terminated on both ends. Pricing shall be provided on a per strand basis for all connected City locations.

All fiber strands shall be tested at 1310 nm and 1550 nm, and documented according to the specifications in Section 2.5.

3.3 Fiber Termination and Inside Plant Work

Item #15: Installation of Backbone Termination Panel

This item consists of the supply and installation of a rack mounted fiber termination panel, typically for fiber cable strand counts of up to 288. This item includes any required assembly of the termination housing/frame, rack mounting the housing/frame, installation of splice trays, installation of connector modules and pigtails, installation of cable management hardware, and proper labeling of fiber ports.

This item does not include fiber splicing.

The Contractor shall supply a single termination panel equipped to support the termination of 288 fiber strands using LC/UPC duplex connectors. The termination panel housing shall be designed for rack-mounting, and shall occupy no more than 4 RU (7-inches) of vertical rack space for connector housings, not including storage for splice trays and cable management.

The panel shall be provided with all necessary splice trays, cable management/strain relief, mounting hardware, and related accessories necessary to accept and terminate an entire 288-count ribbon fiber cable.

The proposed solution may include the Corning CCH-04U using the CCH-CS24-A9-P00RE splice cassettes, and related accessories.

Item #16: Installation of Innerduct, 1.25-inch corrugated HDPE, plenum-rated

This item consists of the supply and installation of innerduct along a path between the building entry point of the outdoor conduit and the fiber termination location internal to the building. The innerduct path may consist of placement in an existing conduit or affixed to ceiling or wall structure, within a plenum above a drop ceiling or below a raised floor.

The Contractor shall rod existing conduit where applicable to ensure that it is free of any obstructions before installing an innerduct.

Supplied innerduct shall be high-density polyethylene (HDPE) innerduct. All innerduct shall contain a pre-installed 900-pound polyester pull tape, and shall have the following characteristics:

- Corrugated construction, orange
- 1.38-inch nominal inner diameter
- 0.035-inch minimum wall thickness
- Plenum rated and UL listed to UL910
- Tensile pulling strength: 319 pounds
- Color: orange
- Carlon CG4X1Cxxxx, or approved equivalent.

Item # 17: Installation of Distribution Hub Outdoor Cabinet

This item consists of the supply and installation of an environmentally-controlled outdoor equipment cabinet to house network electronics.

The cabinet shall meet the following minimum specifications:

- Support mounting of standard 19-inch or 23-inch (width), rack-mountable network equipment and fiber termination components (must provide adjustable mounting rails or mounting adapter hardware to accommodate both standard equipment widths)
- Provide a minimum of 36 rack units (63-inches) of equipment mounting space with a depth of at least 12-inches
- Include a heat exchanger with a minimum of 1800 watt heat load capacity and minimum efficiency of 90 watts / degree Fahrenheit (must maintain internal temperature to within 20-degrees Fahrenheit compared to ambient air temperature at full heat load)
- Include an electrical power system capable of providing circuit protection for local AC-power input and battery backup for DC-powered components, meeting the following minimum requirements:
 - 120/240 VAC input, 60 A capacity
 - AC surge arrester
 - -48 VDC outputs for network equipment, minimum of 2,880 watt capacity
 - N+1 redundancy for all AC-DC rectifier components
 - 160 Ah battery reserve capacity

- Provide sensors and dry, contact-closure alarm outputs for environmental and security, including:
 - Door position, open and closed
 - High/low temperature
 - AC-power failure
 - DC-rectifier failure
- Must be designed, tested, and certified in compliance with the following:
 - Telcordia NEBS GR-63
 - Telcordia NEBS GR-487 in the following areas:
 - Chemical Test
 - Paint Adhesion After Exposure
 - Vertically- Hinged Door Restrainers
 - Security Alarms
 - Surface Temperature and Condensation
 - Fans
 - Bonding and Grounding
 - AC Commercial Power and AC-Auxiliary Power
 - Electronic Equipment Compartment
 - Battery Compartment
 - Exposure to High Temperature and Thermal Shock
 - Wind-Driven Rain and Wind Resistance
 - Rain and Insect Intrusion, Weather and Dust tightness
 - Lawn Sprinklers
 - Acoustical Noise Emissions
 - Resistance to physical impact, firearms, fire, effects from salt fog
 - Temperature Cycling/High Humidity
 - Transportation and installation shock and vibration
 - Transportation and environmentally induced vibration
 - Earthquake Resistance
 - Lifting Details, Installation and Maintenance
 - Quality Marking, Packing and Shipping
 - Enclosure or applicable subcomponents must carry appropriate UL listing

The enclosure shall be a Calix ODC-1000E, or equivalent.

The Contractor shall perform all site preparation necessary for the installation of the cabinet, including construction of a concrete pad for enclosure mounting, proper mounting of the cabinet according to manufacturer instructions, electrical grounding, connection to electrical service, and installation and assembly of cabinet subsystems. The Contractor shall provide all necessary stamped shop drawings and site plans required for City review and permitting of the enclosure installation.

The City will be responsible for coordinating electrical service from the electric utility company to a Contractor-installed meter socket box, or will provide service from an existing electrical breaker panel in situations where the enclosure is collocated with an existing City facility. The Contractor shall make the electrical connection between the equipment cabinet and the electric

meter socket box, or from an existing electrical panel where the cabinet is collocated with existing City facilities. Conduit placement required for electrical power service is not included in this line item.

Item 18: Installation of Distribution Hub Shelter

This item consists of the supply and installation of a prefabricated, concrete communications equipment shelter, including all necessary site preparation. The shelter shall be constructed of steel-reinforced concrete, and shall be designed to be vandal resistant. The shelter shall be designed specifically to house network electronics, providing climate control, physical protection from weather elements, and complete electrical power supply and backup electrical generation systems, as specified below.

The installed shelter and related subcomponents shall meet the following minimum specifications:

- Compliance with the following specifications and standards:
 - Uniform Building Code
 - Standard Building Code
 - National Electric Code
 - Applicable Carroll County and City of Westminster Code
 - UL 752 requirements for low, medium and high power rifle

- General building specifications:
 - Interior dimensions of 10 feet (width) x 12 feet (length) x 10 feet (height)
 - Structural walls and ceiling components consisting of precast, minimum 5000 PSI, steel reinforced concrete
 - Support a floor equipment load of minimum 500 PSF
 - Support a roof live load of 100 PSF
 - Building code-recognized fire rated for 2 hours
 - Must withstand wind speeds of 150 MPH when secured to proper foundation
 - Provide bullet resistance per UL752, Level 4 (.30-06 at 15 feet)
 - All joints sealed with a compressible, durable seal
 - Foundation shall be comprised of a level, concrete pad with steel reinforcement
 - Two underground cable entry points for communications cable shall be provided, each equipped to support two 2-inch conduits

- Interior finishing and cable accessory specifications:
 - Flooring shall be Vinyl Composition Tile (VCT)
 - Interior walls and ceiling covering shall provide R-11 (minimum) thermal insulation
 - Interior walls shall be finished with a rigid, factory-laminated high density polyethylene (HDPE) wall paneling carrying a Class C fire rating (Nu-Poly Wall Panels, or comparable), and providing a smooth, white finish
 - One wall-mounted, painted plywood board (4 ft. x 4 ft. x ¾-inch thick) for telecommunications and other wall-mounted equipment

- Cable ladders having a width of 12-inches and a total length of approximately 22 feet shall be ceiling/wall mounted to provide 8 feet of clearance to the floor
- Exterior finishing specifications:
 - Exterior walls shall be exposed aggregate brown, sealed using an appropriate concrete sealer, such as Thoro System Thoroseal, or comparable, with all trim sealed and painted to match.
- Cooling and heating system specifications:
 - Two 5-ton (redundant), self-contained HVAC units with 5 kW heat strips shall be wall-mounted to the shelter, and shall be designed to be weather-proof, rodent-proof, and tamper-proof
 - Each HVAC unit shall be fed from separate circuit breakers in the main distribution panel
 - Each HVAC unit shall contain a time delay startup relay and low ambient control
 - Include wall-mounted thermostats for HVAC control
- Electrical system specifications:
 - Main distribution load center providing a minimum of 20 positions, consisting of the main distribution panel, breakers, lug box, and related components for 200A, 120/240v, single phase electrical service
 - UL 1449 Type 1 SAD/MOV surge protection
 - Minimum of four duplex, 20 Amp wall-mounted receptacles
 - Ground bar consisting of ¼-inch x 4-inch x 20-inch solid copper shall be connected to a 10 foot copper ground rod with exothermically welded 2/0 AWG copper solid pigtail (minimum 15 feet in length)
 - Grounding halo comprised of a 2 AWG stranded copper, green insulated, mounted approximately 4 feet from the ceiling along the interior perimeter of the shelter
 - Must include 6 AWG stranded copper, green insulated connected from halo to support attachment to interior equipment
 - 35 kW diesel electrical generator
 - Minimum 140 gallon sub-base fuel tank
 - Automatic transfer switch
 - Weatherproof, outdoor enclosure
- Lighting specifications:
 - Interior lighting shall consist of 4-foot, two bulb fluorescent fixtures with acrylic lens covers (minimum four)
 - Exterior lighting shall consist of a 150 watt fixture with photo-cell and motion sensor control
 - Emergency exit lighting shall consist of illuminated exit sign(s), dual flood lights and battery backup
- Alarms and fire protection systems:

- The shelter shall be equipped and pre-wired to a “66 Block” mounted to the supplied plywood wall-board for the following alarms:
 - High Temperature
 - Low Temperature
 - Generator Alarm(s)
 - Air conditioner failure
 - Primary power failure
 - Door opened/closed
 - Fire and Smoke Alarm
- The shelter shall be equipped with an inert gas fire suppression system (FM-200, or equivalent)

In the event that two listed specifications conflict, the more stringent of the two shall apply.

Specific floor plans, receptacle locations, cable ladder configuration, surface finishing, and location of cable entry points must be approved by the City prior to construction.

The Contractor shall perform all site preparation necessary for the installation of the shelter, including construction of a concrete pad for shelter mounting, proper placement of the shelter according to manufacturer instructions, electrical grounding, connection to electrical service, and installation and assembly of shelter subsystems. The Contractor shall provide all necessary stamped shop drawings and site plans required for City review and permitting of the enclosure installation.

The City will be responsible for arranging electrical service from the electric utility company to a Contractor installed meter socket box. The Contractor shall make the electrical connection between the equipment shelter and the electric meter socket box. Conduit placement required for electrical power service is not included in this line item.

Item #19: Installation of Fiber Optic Taps within Handholes

This item consists of the supply and proper mounting of fiber optic tap assemblies (e.g. Corning Optitap-style connector housings), within underground enclosures. Mounting shall be performed according to manufacturer instructions using manufacturer-provided mounting hardware. This item includes placement of the stub cable and any associated slack loops within underground conduit and handholes.

This item consists of fiber optic tap assemblies having the following properties:

- Single buffer tube stub cable of varying lengths
- Tested to Telcordia GR-771-CORE standards
- Singlemode fiber meeting ITU-T G.652.D specifications
- Multiple ports compatible with Corning OptiTap®, SC-APC connectors
- Environmentally hardened, designed for outdoor installation (underground or aerial installation)

Fiber Optic Tap Assemblies shall be the Corning OptiSheath® MultiPort Terminal, or equivalent, and shall be provided in the following varieties:

Item #19a:	Fiber Tap Assembly, 4-port, 100 foot stub
Item #19b:	Fiber Tap Assembly, 4-port, 200 foot stub
Item #19c :	Fiber Tap Assembly, 4-port, 300 foot stub
Item #19d:	Fiber Tap Assembly, 4-port, 400 foot stub
Item #19e:	Fiber Tap Assembly, 4-port, 500 foot stub
Item #19f:	Fiber Tap Assembly, 4-port, 600 foot stub
Item #19g:	Fiber Tap Assembly, 4-port, 800 foot stub
Item #19h:	Fiber Tap Assembly, 6-port, 100 foot stub
Item #19i:	Fiber Tap Assembly, 6-port, 200 foot stub
Item #19j:	Fiber Tap Assembly, 6-port, 300 foot stub
Item #19k:	Fiber Tap Assembly, 6-port, 400 foot stub
Item #19l:	Fiber Tap Assembly, 6-port, 500 foot stub
Item #19m:	Fiber Tap Assembly, 6-port, 600 foot stub
Item #19n:	Fiber Tap Assembly, 6-port, 700 foot stub
Item #19o:	Fiber Tap Assembly, 8-port, 100 foot stub
Item #19p:	Fiber Tap Assembly, 8-port, 200 foot stub
Item #19q:	Fiber Tap Assembly, 8-port, 300 foot stub
Item #19r:	Fiber Tap Assembly, 8-port, 400 foot stub
Item #19s:	Fiber Tap Assembly, 8-port, 500 foot stub
Item #19t:	Fiber Tap Assembly, 8-port, 600 foot stub
Item #19u:	Fiber Tap Assembly, 8-port, 700 foot stub
Item #19v:	Fiber Tap Assembly, 12-port, 200 foot stub
Item #19w:	Fiber Tap Assembly, 12-port, 300 foot stub
Item #19x:	Fiber Tap Assembly, 12-port, 400 foot stub
Item #19y:	Fiber Tap Assembly, 12-port, 600 foot stub
Item #19z:	Fiber Tap Assembly, 12-port, 800 foot stub

Item #20: Installation of Lateral Termination Panel

This item consists of the supply and installation of a wall-mounted or rack-mounted fiber termination panel, typically for fiber strand counts of 12 to 96. This item includes any required assembly of the termination housing/frame, mounting the housing/frame (including mounting a plywood backboard where required), installation of splice trays, installation of connector modules and pigtails, installation of cable management hardware, and proper labeling of fiber ports.

This item does not include fiber splicing.

The Contractor shall supply fiber termination (patch) panels, each equipped with the appropriate number of bulkhead connector panels, fusion splicing trays, strain relief accessories, and rack-mounting hardware (if applicable). All panels shall include accessories for cable management and protection of splicing to outside plant cable in the space behind or inside of the panel housing. Panels designed for both wall-mounting and rack-mounting shall be provided.

Panels supporting greater than 48 fibers may have the splicing storage and handling space provided in a physically separate, but integrated housing.

Item #20a: Lateral Termination Panel, rack-mount, 12-strands

The Contractor shall supply and install a single termination panel equipped to support the termination of 12 fiber strands, scalable to 24 fiber strands. The termination panel housing shall be designed for rack-mounting in a standard 19-inch equipment rack or enclosure, and shall occupy no more than 1 RU (rack unit, 1.75-inches) of vertical rack space. The panel shall include 12 fiber pigtailed terminated with LC/UPC connectors, 12 LC/UPC bulkhead connectors, bulkhead panel/module, splice tray, and related cable management accessories.

This item shall be the Corning PCH-01U, or equivalent, consisting of the following:

- One (1) each, Corning PCH-01U Pretium Connector Housing Patch Panel
- One (1) each, Corning PC1-SPLC-04R – Splice Tray Bracket for PCH-01U
- One (1) each, Corning CCH-CP12-A9 – 12 port, duplex, singlemode LC-UPC connector panel
- Twelve (12) each, LC/UPC fiber pigtail, preterminated, 2 meter
- One (1) each, Corning M67-110 Type 4R splice tray
- All required cable management and mounting accessories.

Item #20b: Lateral Termination Panel, wall-mount, 12-strands

The Contractor shall supply and install a single termination panel equipped to support the termination of 12 fiber strands, scalable to 24 fiber strands. The termination panel housing shall be designed for wall-mounting, and shall provide a lockable door to protect splice trays and fiber pigtailed. The panel shall include 12 fiber pigtailed terminated with LC/UPC connectors, 12 LC/UPC bulkhead connectors, bulkhead panel/module, splice tray, and related cable management accessories.

This item shall be the Corning PWH-02P, or equivalent, consisting of the following:

- One (1) each, Corning PWH-02P Pretium Connector Housing Patch Panel
- One (1) each, Corning HDWR-LOCK-KIT, lock kit for PWH-02P housing
- One (1) each, Corning PWH-SPLC-04-12P – Splice Tray Bracket for PWH-02P
- One (1) each, Corning CCH-CP12-A9 – 12 port, duplex, singlemode LC-UPC connector panel
- Twelve (12) each, LC/UPC fiber pigtail, preterminated, 2 meter
- One (1) each, Corning M67-110 Type 4R splice tray
- All required cable management and mounting accessories.

Item #20c: Lateral Termination Panel, rack-mount, 24-strands

The Contractor shall supply and install a single termination panel equipped to support the termination of 24 fiber strands. The termination panel housing shall be designed for rack-mounting in a standard 19-inch equipment rack or enclosure, and shall occupy no more than 1 RU (rack unit, 1.75-inches) of vertical rack space. The panel shall include 24 fiber pigtailed terminated with LC/UPC connectors, 24 LC/UPC bulkhead connectors, bulkhead panel/module, splice tray, and related cable management accessories.

This item shall be the Corning PCH-01U, or equivalent, consisting of the following:

- One (1) each, Corning PCH-01U Pretium Connector Housing Patch Panel
- One (1) each, Corning PC1-SPLC-04R – Splice Tray Bracket for PCH-01U
- Two (2) each, Corning CCH-CP12-A9 – 12 port, duplex, singlemode LC-UPC connector panel
- 24 each, LC/UPC fiber pigtail, preterminated, 2 meter
- Two (2) each, Corning M67-110 Type 4R splice tray
- All required cable management and mounting accessories.

Item #21: Installation of individual FTTP Service Drop Cable

This item consists of the supply and installation of pre-connectorized service drop cables in conduit between installed Fiber Optic Taps and a demarcation point within the customer premises. The Contractor shall pull the drop cable to a demarcation point along an exterior wall of a single family or attached residence or business building, and shall secure a service loop of approximately 50 feet in length to the building exterior.

This item does not include underground conduit placement.

Service drop cables shall be connectorized on one end with Corning OptiTap-style connectors for interfacing with installed fiber taps. Drop cables shall be Corning 004301EB4FDxxxF, or equivalent, and provided in the following varieties:

- Item #21a: Service Drop Cable, SC-APC, 250 foot**
- Item #21b: Service Drop Cable, SC-APC, 500 foot**

4 Technical Submittal Requirements and Vendor Qualifications

This Request for Bids requires the return of sufficient narrative in response to the technical requirements of this document, including any exceptions the Contractor may take. Failure to return all required documents may be cause for rejection of bid.

Qualified contractors must have a minimum of five years' experience performing fiber optic construction and related tasks for projects of similar size and scope. Submissions shall include a Technical Submittal that details the capabilities and qualifications of the Contractor to meet the requirements of this RFB. The detail shall include:

- The Contractor's technical approach to construction of fiber optic cabling with an emphasis on a safe work environment, professional and quality workmanship, and timely completion of work (to include Contractor's use of equipment and facilities). The submission should detail, at a minimum, the Contractor's 1) approach to utility locates and test pitting; 2) methods protection of fiber optic cable and related materials from damage during installation; 3) equipment to be used; 4) approach to work area protection; 5) anticipated construction phasing; and 6) approach to project status reporting and communications with the City and its Engineering Consultant.
- The availability of the Contractor's resources to mobilize and an estimated timeline to initiate construction efforts, not including permitting and other tasks outside the scope of the Contractor. Also, submissions shall describe the availability of the Contractor's resources to provide a dedicated and continuous effort towards the construction of the City's fiber network, including number of crews and primary equipment resources that can be dedicated to Westminster for the estimated duration of the project;
- The Contractor's Management Plan to include a staffing plan; a subcontracting plan indicating the proposed sub-contractors to be used; a quality control plan that identifies service warranties; and a safety plan demonstrating compliance with OSHA and other applicable requirements; and
- A list of five references in construction of single mode fiber optic cable (underground and/or aerial) in an outside plant environment for similar projects during the past five years (per Bid Experience Record and Vendor Responsibility Form submissions). References may be contacted; and
- Resumes for Key Personnel proposed for this project, including quality control personnel, jobsite foreman / crew leaders, and equipment operators, indicating related experience, training, and certifications relevant to the scope of work.

The submission of a bid will be considered as a representation that the Bidder: (1) has carefully investigated all conditions which affect or may, at some future date, affect the performance of the services covered by the bid; (2) has carefully reviewed all contract documents; (3) is fully informed concerning the conditions to be encountered, character, quality and quantity of work to be

performed and materials to be furnished; and (4) is familiar with all Federal, State and County laws, all codes and ordinances of the City that in any way affect the prosecution of the work or persons engaged or employed in the work.

5 Evaluation of Bids

Bids will be evaluated in two phases; the first based on the technical and price submittals and the second on the oral discussions, if required. The first phase will be evaluated based on the following criteria listed:

- Contractor's approach toward high quality construction and workmanship;
- Availability of the Contractor's resources to mobilize in a timely manner and to offer a continuous and dedicated effort to complete the City's project;
- Past performance, key personnel resumes, and technical competence;
- Management Plan to include Staffing Plan, Subcontracting Plan, Cable Testing Plan, Quality Control Program, and Safety Plan; and
- Completeness of Bid submission

After identifying the short list of the most qualified Bidders based on the evaluation criteria, representative(s) may be required to clarify their bids by making individual presentations to the evaluation committee.

The City may enter into negotiations with Bidders and invite best and final offers as deemed to be in the best interest of the City. Negotiations may be in the form of face-to-face, telephone, facsimile, e-mail or written communications, or any combination thereof, at City's sole discretion.

Contractors are strongly advised not to prepare their bid submissions based on any assumption or understanding that negotiations will take place.

Following the submittal of bids, Contractors are strongly cautioned not to contact elected officials or members of the evaluation committee regarding the selection process. Inappropriate efforts to lobby or influence individuals or Contractors involved in this selection may result in dismissal from further consideration, at the City's sole discretion.

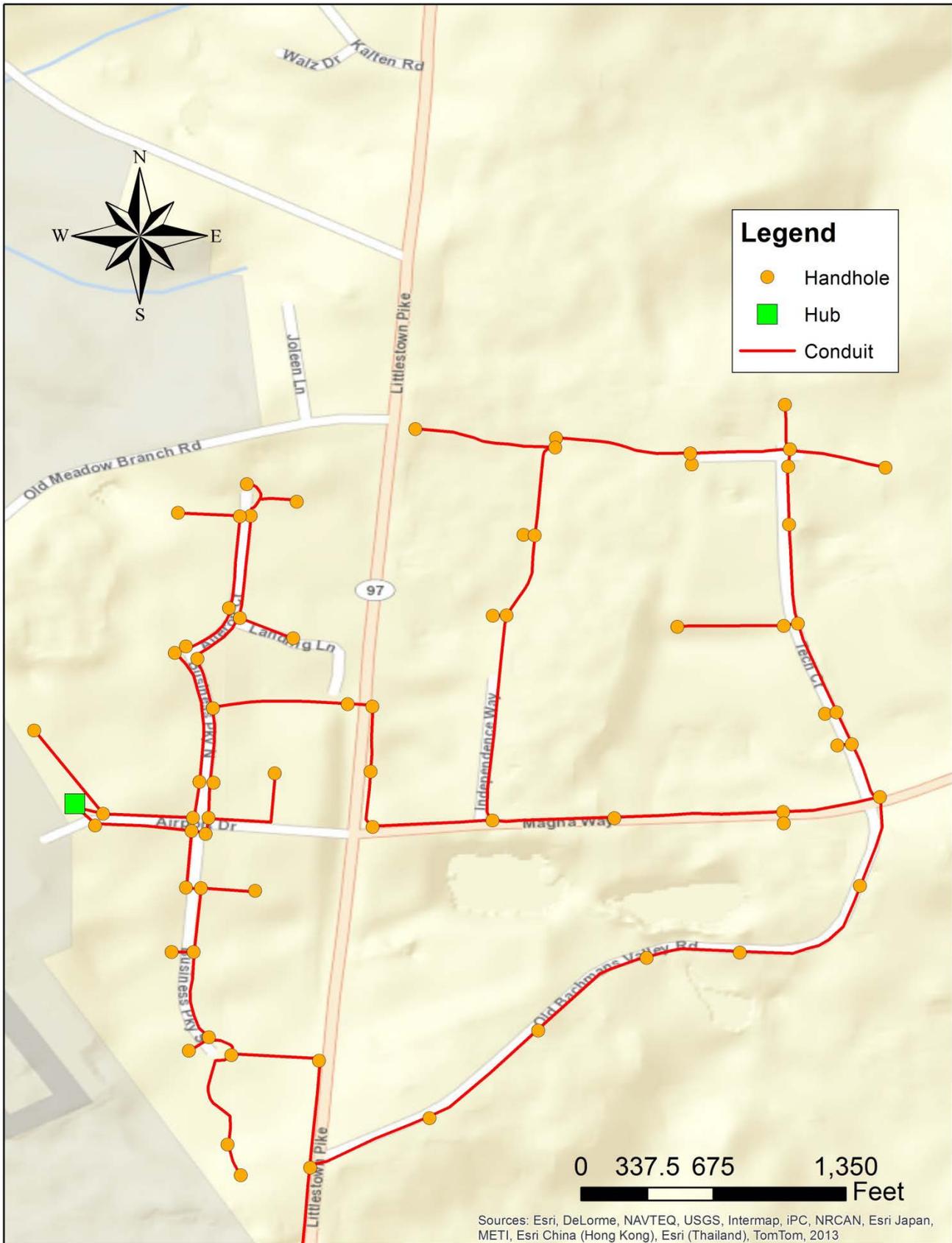
**Fiber Optic Communications
Network Construction**

**TECHNICAL SPECIFICATIONS AND
BID REQUIREMENTS**

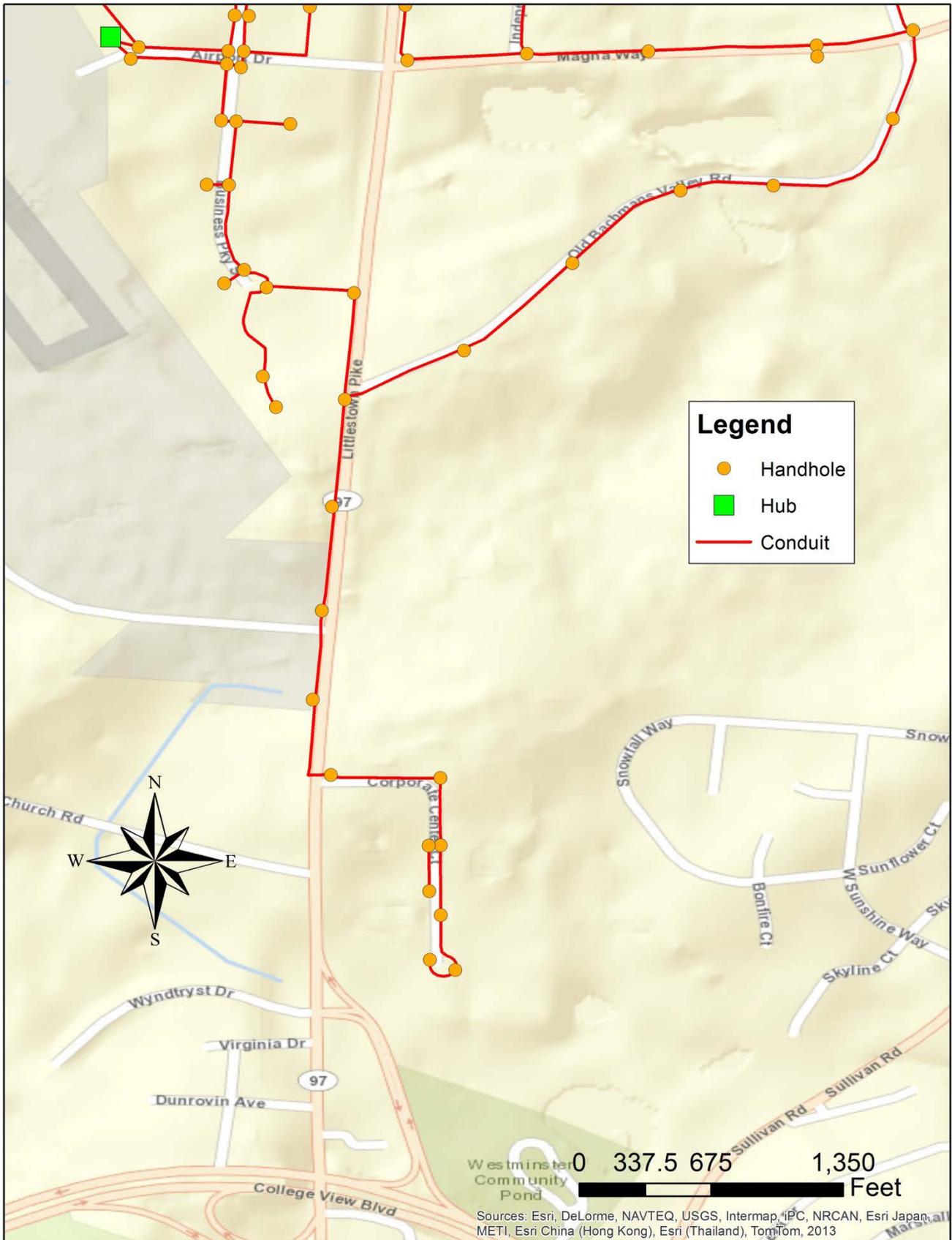
ATTACHMENT 1

FIBER NETWORK ROUTE MAPS

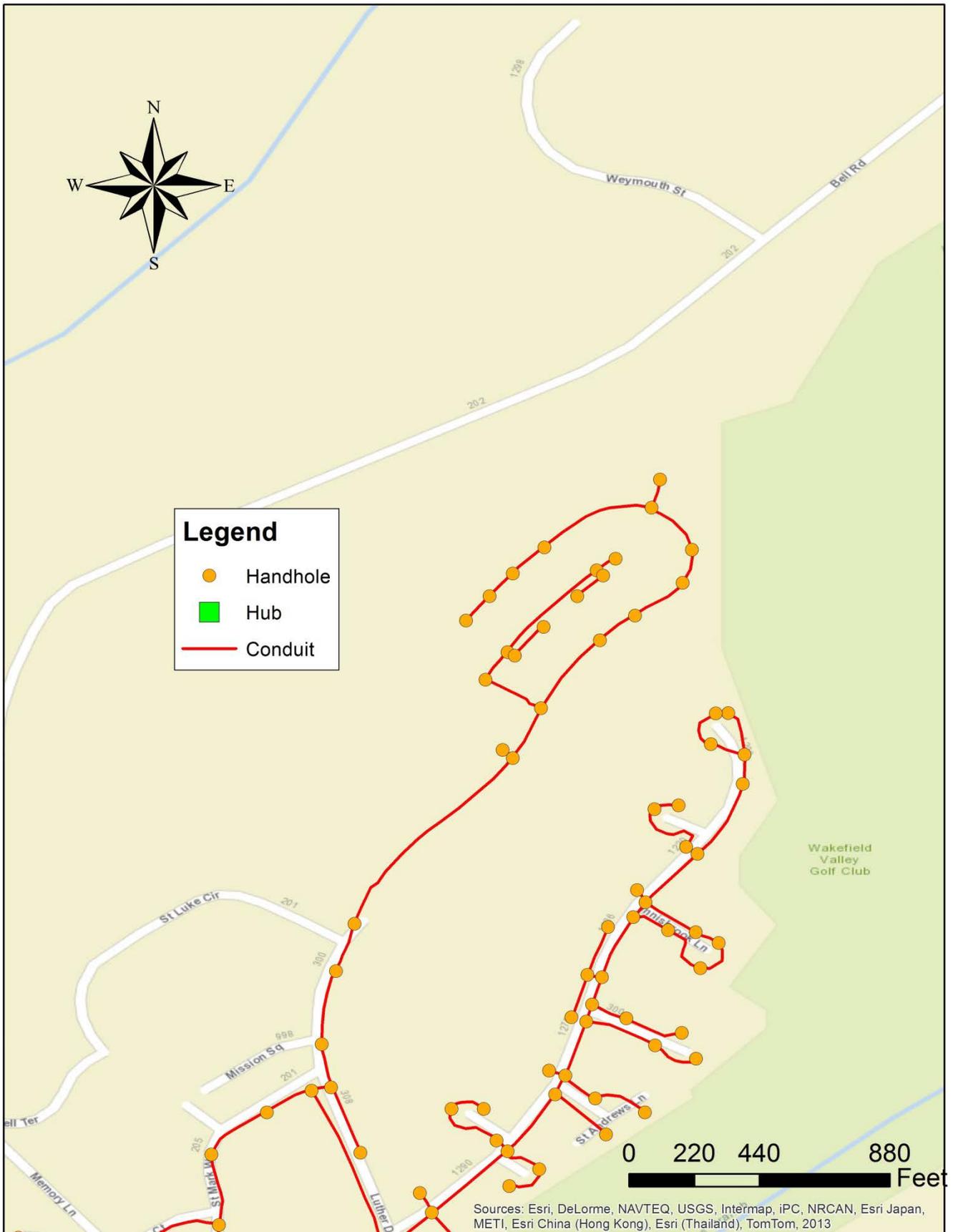
ATTACHMENT 1A – Service Area A Detail Map 1



ATTACHMENT 1B – Service Area A Detail Map 2



ATTACHMENT 1C – Service Area B Detail Map 1



ATTACHMENT 1D – Service Area B Detail Map 2

