



**BOARD OF COUNTY COMMISSIONERS
NOTICE OF SOLICITATION
IFB #18-055/HS**

**FIBER OPTIC ENGINEERING, DESIGN, MATERIAL,
SUPPLIES AND INSTALLATION, TERM CONTRACT**

FOR MANDATORY PRE-BID CONFERENCE, SEE TERM AND CONDITION #9 OF THIS SOLICITATION

BID SUBMISSION DATE: MAY 17, 2018 AT 4:00 P.M.

It is the responsibility of the bidder to ensure that all pages are included. Therefore, all bidders are advised to closely examine this package. Any questions regarding the completeness of this package should be immediately directed to Palm Beach County Purchasing Department at (561) 616-6800.

BIDDERS SHALL PROVIDE A RESPONSE IN A SEALED PACKAGE OR CONTAINER SIGNED BY AN AGENT OF THE COMPANY HAVING AUTHORITY TO BIND THE COMPANY OR FIRM. FAILURE TO DO SO SHALL BE CAUSE FOR REJECTION OF YOUR BID.

Protests can be accepted only during the five (5) business day posting period.

C A U T I O N

In order to do business with Palm Beach County, vendors are required to create a Vendor Registration Account OR activate an existing Vendor Registration Account through the Purchasing Department's Vendor Self Service (VSS) system which can be accessed at <https://pbcvssp.co.palm-beach.fl.us/webapp/vssp/AltSelfService>. As they are issued, all amendments to solicitations will be posted under the applicable solicitation on our VSS system. It is the vendor's sole responsibility to routinely check our VSS system for any amendments that may have been issued prior to the deadline for receipt of bids.

Palm Beach County shall not be responsible for the completeness of any Invitation for Bid that was not downloaded from our VSS system or obtained directly from the Purchasing Department.

**In accordance with the provisions of ADA,
this document may be requested in an alternate format.**

**50 South Military Trail, Suite 110, West Palm Beach, FL 33415-3199
(561) 616-6800 FAX: (561) 616-6811**

BOARD OF COUNTY COMMISSIONERS
Palm Beach County
INVITATION FOR BID

IFB # <u>18-055/HS</u>	BID TITLE: FIBER OPTIC ENGINEERING, DESIGN, MATERIAL, SUPPLIES AND INSTALLATION, TERM CONTRACT	
PURCHASING DEPARTMENT CONTACT: HOLLY SKEEN		TELEPHONE NO.: (561) 616-6828
FAX NO.: (561) 242-6728	E-MAIL ADDRESS: hskeen@pbcgov.org	

All bid responses must be received on or before May 17, 2018, prior to 4:00 p.m., Palm Beach County local time. **SUBMIT BID TO:** Palm Beach County Purchasing Department, Attention: Holly Skeen, 50 South Military Trail, Suite 110, West Palm Beach, FL 33415-3199.

This Invitation for Bid, General Conditions, Instructions to Bidders, Special Conditions, Specifications, Attachments, Amendments (if issued), and / or any other referenced document form a part of this bid solicitation and response thereto, and by reference are made a part thereof. The selected awardee shall be bound by all terms, conditions and requirements in these documents.

PURPOSE AND EFFECT: It is the purpose and intent of this solicitation to secure bids for item(s) and / or services as listed herein. The selected awardee is hereby placed on notice that acceptance of its bid by Palm Beach County shall constitute a binding contract.

GENERAL CONDITIONS, INSTRUCTIONS AND INFORMATION FOR BIDDERS

GENERAL CONDITIONS

1. GENERAL INFORMATION

Bidders are advised that this package constitutes the complete set of specifications, terms, and conditions which forms the binding contract between Palm Beach County and the successful bidder. Changes to this Invitation for Bid may be made only by written amendment issued by the County Purchasing Department. Bidders are further advised to closely examine every section of this document, to ensure that all sequentially numbered pages are present, and to ensure that it is fully understood. Questions or requests for explanations or interpretations of this document must be submitted to the Purchasing Department contact in writing in sufficient time to permit a written response prior to the published bid submission time. Oral explanations or instructions given by any County agent are not binding and should not be interpreted as altering any provision of this document. Bidder certifies that this bid is made without reliance on any oral representations made by the County.

The County's performance and obligation to pay under this contract is contingent upon an annual appropriation by the Board of County Commissioners for subsequent fiscal years.

2. LEGAL REQUIREMENTS

- a. **COMPLIANCE WITH LAWS AND CODES:** Federal, State, County and local laws, ordinances, rules and regulations that in any manner affect the items covered herein apply. Lack of knowledge by the bidder shall in no way be a cause for relief from responsibility. The successful bidder shall strictly comply with Federal, State and local building and safety codes. Equipment shall meet all State and Federal Safety regulations. Bidder certifies that all products (materials, equipment, processes, or other items supplied in response to this bid) contained in its bid meets all ANSI, NFPA, and all other Federal and State requirements. Bidder further certifies that, if it is the successful bidder, and the product delivered is subsequently found to be deficient in any of the aforementioned requirements in effect on date of delivery, all costs necessary to bring the product into compliance shall be borne by the bidder.

Any toxic substance provided to the County as a result of this solicitation or resultant contract shall be accompanied by its Safety Data Sheet (SDS).

The Uniform Commercial Code (Florida Statutes, Chapter 672) shall prevail as the basis for contractual obligations between the successful bidder and Palm Beach County for any terms and conditions not specifically stated in the Invitation for Bid.

- b. **DISCRIMINATION PROHIBITED:** Palm Beach County is committed to assuring equal opportunity in the award of contracts and complies with all laws prohibiting discrimination. Pursuant to Palm Beach County Resolution R-2017-1770, as may be amended, the successful bidder warrants and represents that throughout the term of the contract, including any renewals thereof, all of its employees are treated equally during employment without regard to race, color, religion, disability, sex, age, national origin, ancestry, marital status, familial status, sexual orientation, gender identity or expression, or genetic information. Failure to meet this requirement shall be considered a default of contract.
- c. **INDEPENDENT CONTRACTOR RELATIONSHIP:** The successful bidder is, and shall be, in the performance of all work, services, and activities under the Contract, an Independent Contractor and not an employee, agent, or servant of the COUNTY. All persons engaged in any of the work or services performed pursuant to the Contract shall at all times, and in all places, be subject to the successful bidder's sole direction, supervision, and control. The successful bidder shall exercise control over the means and manner in which it and its employees perform the work, and in all respects the successful bidder's relationship, and the relationship of its employees, to the COUNTY shall be that of an Independent Contractor and not as employees or agents of the COUNTY.
- d. **CRIMINAL HISTORY RECORDS CHECK ORDINANCE:** Pursuant to Palm Beach County Code Section 2-371 through 2-377, the Palm Beach County Criminal History Records Check Ordinance ("Ordinance"), the County will conduct fingerprint based criminal history record checks on all persons not employed by the County who repair, deliver, or provide goods or services for, to, or on behalf of the County. A fingerprint based criminal history record check shall be conducted on all employees of vendors, contractors, and subcontractors of contractors, including repair persons and

delivery persons, who are unescorted when entering a facility determined to be either a critical facility ("Critical Facilities") or a criminal justice information facility ("CJI Facilities"), which are critical to the public safety and security of the County. County facilities that require this heightened level of security are identified in Resolution R-2003-1274, as amended. In October 2013, compliance with the requirements of the U. S. Federal Bureau of Investigations CJI Security Policy was added to the Ordinance, which includes a broad list of disqualifying offenses. The bidder is solely responsible for understanding the financial, schedule, and / or staffing implications of this Ordinance. Further, the bidder acknowledges that its bid price includes any and all direct or indirect costs associated with compliance with this Ordinance, except for the applicable FDLE / FBI fees that shall be paid by the County.

- e. **PUBLIC ENTITY CRIMES:** F.S. 287.133 requires Palm Beach County to notify all bidders of the following: "A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in F.S. 287.017 for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list."

- f. **NON-COLLUSION:** Bidder certifies that it has entered into no agreement to commit a fraudulent, deceitful, unlawful, or wrongful act, or any act which may result in unfair advantage for one or more bidders over other bidders. Conviction for the Commission of any fraud or act of collusion in connection with any sale, bid, quotation, proposal or other act incident to doing business with Palm Beach County may result in permanent debarment.

No premiums, rebates or gratuities are permitted; either with, prior to or after any delivery of material or provision of services. Any such violation may result in award cancellation, return of materials, discontinuation of services, and removal from the vendor bid list(s), and / or debarment or suspension from doing business with Palm Beach County.

- g. **LOBBYING:** Bidders are advised that the "Palm Beach County Lobbyist Registration Ordinance" prohibits a bidder or anyone representing the bidder from communicating with any County Commissioner, County Commissioner's staff, or any employee authorized to act on behalf of the Commission to award a particular contract regarding its bid, i.e., a "Cone of Silence".

The "Cone of Silence" is in effect from the date / time of the deadline for submission of the bid, and terminates at the time that the Board of County Commissioners or a County Department authorized to act on their behalf, awards or approves a contract, rejects all bids, or otherwise takes action which ends the solicitation process.

Bidders may, however, contact any County Commissioner, County Commissioner's staff, or any employee authorized to act on behalf of the Commission to award a particular contract, via written communication, i.e., facsimile, e-mail or U.S. mail. Violations of the "Cone of Silence" are punishable by a fine of \$250.00 per violation.

- h. **CONFLICT OF INTEREST:** All bidders shall disclose with their bid the name of any officer, director, or agent who is also an employee or a relative of an employee of Palm Beach County. Further, all bidders shall disclose the name of any County employee or relative of a County employee who owns, directly or indirectly, an interest of ten percent or more in the bidder's firm or any of its branches.
- i. **SUCCESSORS AND ASSIGNS:** The County and the

successful bidder each binds itself and its successors and assigns to the other party in respect to all provisions of the Contract. Neither the County nor the successful bidder shall assign, sublet, convey or transfer its interest in the Contract without the prior written consent of the other.

- j. **INDEMNIFICATION:** Regardless of the coverage provided by any insurance, the successful bidder shall indemnify, save harmless and defend the County, its agents, servants, or employees from and against any and all claims, liability, losses and / or causes of action which may arise from any negligent act or omission of the successful bidder, its subcontractors, agents, servants or employees during the course of performing services or caused by the goods provided pursuant to these bid documents and / or resultant contract.

- k. **PUBLIC RECORDS, ACCESS AND AUDITS:** The bidder agrees that copies of any and all property, work product, documentation, reports, computer systems and software, schedules, graphs, outlines, books, manuals, logs, files, deliverables, photographs, videos, tape recordings or data relating to the Contract which have been created as a part of the bidder's services or authorized by the COUNTY as a reimbursable expense, whether generated directly by the bidder, or by or in conjunction or consultation with any other party whether or not a party to the Contract, whether or not in privity of contract with the COUNTY or the bidder, and wherever located shall be the property of the COUNTY.

Any material submitted in response to this solicitation is considered a public document in accordance with Section 119.07, F.S. This includes material which the responding bidder might consider to be confidential. All submitted information that the responding bidder believes to be confidential and exempt from disclosure (i.e., a trade secret or as provided for in Section 119.07 and Section 812.081, F.S.) must be specifically identified as such. Upon receipt of a public records request for such information, a determination will be made as to whether the identified information is, in fact, confidential.

The bidder shall maintain records related to all charges, expenses, and costs incurred in estimating and performing the work for at least three (3) years after completion or termination of the Contract. The COUNTY shall have access to such records as required in this Section for the purpose of inspection or audit during normal business hours, at the Bidder's place of business.

Notwithstanding anything contained herein, as provided under Section 119.0701, F.S., if the Bidder: **(i) provides a service; and (ii) acts on behalf of the COUNTY as provided under Section 119.011(2), F.S.,** the Bidder shall comply with the requirements of Section 119.0701, Florida Statutes, as it may be amended from time to time. The Bidder is specifically required to:

1. Keep and maintain public records required by the COUNTY to perform services provided under the Contract.
2. Upon request from the COUNTY's Custodian of Public Records ("County's Custodian") or COUNTY's representative/liaison, on behalf of the County's Custodian, provide the COUNTY with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119 or as otherwise provided by law. The Bidder further agrees that all fees, charges and expenses shall be determined in accordance with Palm Beach County PPM CW-F-002, Fees Associated with Public Records Requests, as it may be amended or replaced from time to time.
3. Ensure that public records that are exempt, or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the Contract, if the Bidder does not transfer the records to the public agency. Nothing contained herein shall prevent

the disclosure of or the provision of records to the COUNTY.

4. Upon completion of the Contract, the Bidder shall transfer, at no cost to the COUNTY, all public records in possession of the Bidder unless notified by COUNTY's representative/liaison, on behalf of the County's Custodian, to keep and maintain public records required by the COUNTY to perform the service. If the Bidder transfers all public records to the COUNTY upon completion of the Contract, the Bidder shall destroy any duplicate public records that are exempt, or confidential and exempt from public records disclosure requirements. If the Bidder keeps and maintains public records upon completion of the Contract, the Bidder shall meet all applicable requirements for retaining public records. All records stored electronically by the Bidder must be provided to the COUNTY, upon request of the County's Custodian or the COUNTY's representative/liaison, on behalf of the County's Custodian, in a format that is compatible with the information technology systems of COUNTY, at no cost to COUNTY.

Bidder acknowledges that it has familiarized itself with the requirements of Chapter 119, F. S., and other requirements of state law applicable to public records not specifically set forth herein. Failure of the Bidder to comply with the requirements of this Section, Chapter 119, F.S. and other applicable requirements of state law, shall be a material breach of the Contract. COUNTY shall have the right to exercise any and all remedies available to it for breach of contract, including but not limited to, the right to terminate for cause.

IF THE BIDDER HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE BIDDER'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THE CONTRACT, PLEASE CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT RECORDS REQUEST, PALM BEACH COUNTY PUBLIC AFFAIRS DEPARTMENT, 301 N. OLIVE AVENUE, WEST PALM BEACH, FL 33401, BY E-MAIL AT RECORDSREQUEST@PBCGOV.ORG OR BY TELEPHONE AT 561-355-6680.

- I. **INCORPORATION, PRECEDENCE, JURISDICTION, GOVERNING LAW:** This Invitation for Bid shall be included and incorporated in the final award. The order of contractual precedence shall be the bid document (original terms and conditions), bid response, and purchase order or term contract order. Any and all legal action necessary to enforce the award or the resultant contract shall be governed by the laws of the State of Florida. Any legal action necessary to enforce the award or the resultant contract will be held in a court of competent jurisdiction located in Palm Beach County, Florida.

- m. **LEGAL EXPENSES:** The County shall not be liable to a bidder for any legal fees, court costs, or other legal expenses arising from the interpretation or enforcement of the contract, or from any other matter generated by or relating to the contract.
- n. **NO THIRD PARTY BENEFICIARIES:** No provision of the Contract is intended to, or shall be construed to, create any third party beneficiary or to provide any rights to any person or entity not a party to the Contract, including but not limited to any citizen or employees of the County and / or successful bidder.
- o. **SCRUTINIZED COMPANIES (WHEN CONTRACT VALUE IS GREATER THAN \$1 MILLION):** As provided in F.S. 287.135, by entering into a Contract or performing any work in furtherance of this Invitation for Bid, the BIDDER certifies that it, its affiliates, suppliers, subcontractors and consultants who will perform hereunder, have not been placed on the Scrutinized Companies With Activities in Sudan List or Scrutinized Companies With Activities in The Iran Petroleum Energy Sector List created pursuant to F.S. 215.473, , or on the Scrutinized Companies that boycott Israel List, or is engaged in a boycott of Israel, pursuant to F.S. 215.4725, or is engaged in business operations in Cuba or Syria.

If the County determines, using credible information available to the public, that a false certification has been submitted by BIDDER, the resulting Contract from this Invitation for Bid may be terminated and a civil penalty equal to the greater of \$2 million or twice the amount of the Contract shall be imposed, pursuant to F.S. 287.135.

3. BID SUBMISSION

- a. **SUBMISSION OF RESPONSES:** All bid responses must be submitted on the provided Invitation for Bid "Response" Form. Bid responses on vendor letterhead / quotation forms shall not be accepted. Responses must be typewritten, written in ink or a photocopy and must be signed by an agent of the company having authority to bind the company or firm. **FAILURE TO SIGN THE BID RESPONSE FORM AT THE INDICATED PLACES SHALL BE CAUSE FOR REJECTION OF THE BID.** Bid responses are to be submitted to the Palm Beach County Purchasing Department no later than the time indicated on the solicitation preamble, and must be submitted in a sealed envelope or container bearing the bid number for proper handling.
- b. **CERTIFICATIONS, LICENSES AND PERMITS:** Unless otherwise directed in sub-paragraph d. (Local Preference) or the Special Conditions of this bid, bidder should include with its bid a copy of all applicable Certificates of Competency issued by the State of Florida or the Palm Beach County Construction Industry Licensing Board in the name of the bidder shown on the bid response page. It shall also be the responsibility of the successful bidder to maintain a current Local Business Tax Receipt (Occupational License) for Palm Beach County and all permits required to complete the contractual service at no additional cost to Palm Beach County. A Palm Beach County Local Business Tax Receipt (Occupational License) is required unless specifically exempted by law. In lieu of a Palm Beach County Local Business Tax Receipt (Occupational License), the bidder should include the current Local Business Tax Receipt (Occupational License) issued to the bidder in the response. It is the responsibility of the successful bidder to ensure that all required certifications, licenses and permits are maintained in force and current throughout the term of the contract. Failure to meet this requirement shall be considered default of contract.
- c. **SBE BID DOCUMENT LANGUAGE**

Item 1 – Policy

It is the policy of the Board of County Commissioners of Palm Beach County, Florida, that SBE(s) have the maximum practical opportunity to participate in the competitive process of supplying

goods, services and construction to the County. To that end, the Board of County Commissioners adopted a Small Business Ordinance which is codified in Sections 2-80.21 through 2-80.34 (as amended) of the Palm Beach County Code, which sets forth the County's requirements for the SBE program, and is incorporated in this solicitation. Compliance with the requirements contained in this section shall result in a bidder being deemed responsive to SBE requirements. The provisions of this Ordinance are applicable to this solicitation, and shall have precedence over the provisions of this solicitation in the event of a conflict.

Although preferences will not be extended to certified M/WBEs, unless otherwise provided by law, businesses eligible for certification as an M/WBE are encouraged to maintain their certification in order to assist in the tracking of M/WBE availability and awards of contracts to M/WBEs. This information is vital to determining whether race and gender neutral programs assist M/WBE firms or whether race and gender preferences are necessary in order to address any continued discrimination in the market.

Item 2 – SBE Goals

The County has established a minimum goal of 15% SBE participation for all County solicitations, inclusive of all alternates and change orders. This goal is a minimum, and no rounding will be accepted.

Item 3 – Ranking of Responsive Bidders

Bidders who meet the SBE goal will be deemed to be responsive to the SBE requirement.

- a. In evaluating competitive bids or quotes between \$1,000 and one million dollars (\$1,000,000) where the low bidder is non-responsive to the SBE requirement, the contract shall be awarded to the low bidder responsive to the SBE requirement as long as the bid does not exceed the low bid amount by 10%. In the event there are no bidders responsive to the SBE requirement, the contract shall be awarded to the bidder with the greatest SBE participation in excess of seven percent (7%) participation, as long as the bid does not exceed the low bid amount by ten percent (10%).
- b. In evaluating bids in excess of one million dollars (\$1,000,000), where the low bidder is non-responsive to the SBE requirement, the contract shall be awarded to the low bidder responsive to the SBE requirements provided that such bid does not exceed the lowest responsive bid by more than one hundred thousand dollars (\$100,000) plus three percent (3%) of the total bid in excess of one million dollars (\$1,000,000). In the event there are no bidders responsive to the SBE goal, the contract shall be awarded to the bidder with the greatest SBE participation in excess of seven percent (7%) participation, provided that such bid does not exceed the lowest responsive bid by more than one hundred thousand dollars (\$100,000) plus three percent (3%) of the total bid in excess of one million dollars (\$1,000,000).

Item 4 – Bid Submission Documentation

SBE bidders, bidding as prime contractors, are advised that they must complete Schedule 1 and Schedule 2, listing the work to be performed by their own workforce, as well as the work to be performed by any SBE subcontractor. Failure to include this information on Schedule 1 will result in the participation by the SBE prime bidders own workforce NOT being counted towards meeting the SBE goal. This requirement applies even if the SBE contractor intends to perform 100% of the work with their own workforce.

Bidders are required to submit with their bid the appropriate SBE-M/WBE schedules in order to be deemed responsive to the SBE requirements. SBE-M/WBE documentation to be submitted is as follows:

Schedule 1 – List of Proposed SBE and M/WBE Participation

This list shall contain the names of the SBE Prime SBE and

subcontractors intended to be used in performance of the contract, if awarded. This schedule shall also be used if an SBE prime bidder is utilizing ANY subcontractors.

(Only Job Order Contracting (JOC) contracts and Task Authorizations for annual contracts may be excluded from this requirement.)

Schedule(s) 2 – Letter(s) of Intent to Perform as an SBE or M/WBE Subcontractor

A Schedule 2 shall be completed by the SBE Prime. A Schedule 2 shall be completed and signed by the proposed SBE subcontractor listed on Schedule 1. SBE Primes and SBE Subcontractors shall specify the type of work to be performed, the cost and / or percentage. If the SBE intends to subcontract any portion of the job to another certified SBE, or non-SBE, they are required to list the amount and the name of the subcontractor on this form. The Prime may count toward its SBE goal second and third tiered SBE subcontractors; provided that the Prime submits a completed Schedule 2 form for each SBE subcontractor. Additional sheets may be used as needed. In lieu of a Schedule 2, a detailed responsive proposal may be acceptable.

Item 5 – SBE Certification

Only those firms certified by Palm Beach County at the time of bid submission shall be counted toward the established SBE goals. Upon receipt of a complete application, **IT TAKES UP TO NINETY (90) DAYS TO BECOME CERTIFIED AS AN SBE WITH PALM BEACH COUNTY.** It is the responsibility of the bidder to confirm the certification of any proposed SBE; therefore, it is recommended that bidders visit the on-line Vendor Directory at www.pbcgov.org/osba to verify SBE certification.

Item 6 – Counting SBE Participation (and M/WBE Participation for Tracking Purposes)

- a. Once a firm is determined to be an eligible SBE according to the Palm Beach County certification procedures, the County or the Prime may count toward its SBE goals only that portion of the total dollar value of a contract performed by the SBE. Prior to issue, total dollar value of a contract will be determined by the PBC user department by defining factors to be considered as value. Total dollar value of retail contracts shall be determined by Gross Receipts.
- b. The County may count toward its SBE goals the total value of a contract awarded to an eligible SBE firm that subsequently is decertified or whose certification has expired after a contract award date or during the performance of the contract.
- c. The County or Prime may count toward its SBE goal a portion of the total dollar value of a contract with a joint venture, eligible under the standards for certification, equal to the percentage of the ownership and control of the SBE partner in the joint venture.
- d. The County or Prime may count toward its SBE goal the entire expenditures for materials and equipment purchased by an SBE subcontractor, provided that the SBE subcontractor has the responsibility for the installation of the purchased materials and equipment.
- e. The County or Prime may count the entire expenditure to an SBE manufacturer (i.e., a supplier / distributor that produces goods from raw materials or substantially alters the goods before resale).
- f. The County or Prime may count sixty percent (60%) of its expenditure to SBE suppliers / distributors that are not manufacturers.
- g. The County or Prime may count toward its SBE goal second and third tiered SBE subcontractors; provided that the Prime submits a completed Schedule 2 form for each SBE subcontractor.

- h. The County or Prime may only count toward its SBE goal the goods and services in which the SBE is certified and performs with its own forces.

Item 7 – Responsibilities After Contract Award

Schedule 3 – SBE-M/WBE Activity Form

This form shall be submitted by the prime contractor with each payment application when SBE subcontractors are utilized in the performance of the contract. This form shall contain the names of all SBE subcontractors, specify the subcontracted dollar amount for each subcontractor and show amount drawn and payments to date issued to subcontractors. This form is intended to be utilized on all non-professional services contracts.

Schedule 4 – SBE-M/WBE Payment Certification

A Schedule 4 for each SBE sub shall be completed and signed by the proposed SBE after receipt of payment from the Prime. If a SBE subcontractor intends to disburse any funds associated with this payment to any subcontractor for labor provided on this contract, the amount and name of the subcontractor must be listed on this form. In addition, if the named subcontractor is a certified SBE, then a Schedule 4 shall be completed and signed by the named SBE after receipt of payment from the SBE subcontractor. When applicable, the Prime shall submit this form with each application submitted to the County for payment to document payment issued to a sub in the performance of the contract.

All bidders hereby assure that they will meet the SBE participation percentages submitted in their respective bids with the subcontractors contained on Schedules 1 and 2 and at the dollar values specified. Bidders agree to provide any additional information requested by the County to substantiate participation.

The successful bidder shall submit an SBE-M/WBE Activity Form (Schedule 3) and SBE-M/WBE Payment Certification Forms (Schedule 4) with each payment application. Failure to provide these forms may result in a delay in processing payment or disapproval of the invoice until they are submitted. The SBE-M/WBE Activity Form is to be filled out by the Prime Contractor and the SBE-M/WBE Payment Certification Forms are to be executed by the SBE or M/WBE firm to verify receipt of payment.

Item 8 – SBE Substitutions

After contract award, the successful bidder will only be permitted to replace a certified SBE subcontractor who is unwilling or unable to perform. Such substitution must be done with other certified SBE's in order to maintain the SBE percentages submitted with the bid. Requests for substitutions must be submitted to the user Department and OSBA.

- d. **LOCAL PREFERENCE ORDINANCE:** In accordance with the Palm Beach County Local Preference Ordinance, a preference may be given to (1) bidders having a permanent place of business in Palm Beach County or (2) bidders having a permanent place of business in the Glades that are able to provide the goods or services within the Glades.

1. **Glades Local Preference:** Pursuant to the Palm Beach County Local Preference Ordinance, a 5% Glades Local Preference is given when a Glades business offers to provide the goods or services that will be procured for use in the Glades. If the lowest responsive, responsible bidder is a non-Glades business, all bids received from responsive, responsible Glades businesses will be decreased by 5%. The original bid amount is not changed. The 5% decrease given for the Glades Local Preference is calculated only for the purpose of determining local preference.

2. **Local Preference:** Pursuant to the Palm Beach County Local Preference Ordinance, a 5% Local Preference is given to bidders having a permanent place of business in Palm Beach County. If the lowest responsive, responsible bidder is a non-local business; all bids received from responsive, responsible local businesses will be decreased by 5%. The original bid amount is not changed. The 5% decrease given for the Local Preference is calculated only for the purpose of determining local preference.
3. To receive a Glades Local Preference or a Local Preference (collectively referred to as "local preference"), a bidder must have a permanent place of business in existence prior to the County's issuance of this Notice of Solicitation / Invitation for Bid. A permanent place of business means that the bidder's headquarters is located in Palm Beach County or in the Glades, as applicable; or, the bidder has a permanent office or other site in Palm Beach County or in the Glades, as applicable, where the bidder will produce a substantial portion of the goods or services to be purchased. A valid Business Tax Receipt issued by the Palm Beach County Tax Collector is required, unless the bidder is exempt from the business tax receipt requirement by law, and will be used to verify that the bidder had a permanent place of business prior to the issuance of this Notice of Solicitation / Invitation for Bid. In addition, the attached "Certification of Business Location" and Business Tax Receipt must accompany the bid at the time of bid submission. The Palm Beach County Business Tax Receipt and this Certification are the sole determinant of local preference eligibility. Errors in the completion of this Certification or failure to submit this completed Certification will cause the bidder / proposer to not receive a local preference.

- e. **DRUG FREE WORKPLACE CERTIFICATION:** In compliance with Florida Statute (Section 287.087) attached form "Drug-Free Workplace Certification" should be fully executed and submitted with bid response in order to be considered for a preference whenever two (2) or more bids which are equal with respect to price, quality, and service are received by Palm Beach County.

- f. **CONDITIONED OFFERS:** Bidders are cautioned that any condition, qualification, provision, or comment in their bid, or in other correspondence transmitted with their bid, which in any way modifies, takes exception to, or is inconsistent with the specifications, requirements, or any of the terms, conditions, or provisions of this solicitation, is sufficient cause for the rejection of their bid as non-responsive.

- g. **PRICING:**

1. Prices offered must be the price for new merchandise and free from defect. Unless specifically requested in the bid specifications, any bids containing modifying or escalation clauses shall be rejected.
2. The price offered must be in accordance with the unit of measure provided on the bid response page(s). One (1) space or line requires only one (1) single, fixed unit price. Anything other than a single, fixed unit price shall result in the rejection of your bid.
3. All unit prices bid should be within two (2) decimal points. If bidder's pricing exceeds two (2) decimal points, Purchasing reserves the right to round up or down accordingly.
4. Bidder warrants by virtue of bidding that prices shall remain firm for a period of ninety (90) days from the date of bid submission to allow for evaluation and award.
5. Bidder warrants by virtue of bidding that prices shall remain firm for the initial and any subsequent term.
6. In the event of mathematical error(s), the unit price shall prevail and the bidder's total offer shall be corrected accordingly. **BIDS HAVING ERASURES OR CORRECTIONS MUST BE INITIALED BY THE BIDDER PRIOR TO BID SUBMISSION. IF THE CORRECTION IS NOT PROPERLY INITIALED, OR IF THE INTENT OR LEGIBILITY OF THE CORRECTION IS NOT CLEAR,**

THE BID SHALL BE REJECTED.

7. Bidders may offer a cash discount for prompt payment. However, such discounts shall not be considered in determining the lowest net cost for bid evaluation purposes unless otherwise specified in the special conditions. Bidders should reflect any discounts to be considered in the unit prices bid.
 - h. **SUBMITTING NO BID or NO CHARGE:** Bidders not wishing to bid on some items sought by this solicitation should mark those items as "no bid". If some items are to be offered at no charge, bidders should mark those items as "no charge". Items left blank shall be considered a "no bid" for that item, and the bid shall be evaluated accordingly.
 - i. **ACCEPTANCE / REJECTION OF BIDS:** Palm Beach County reserves the right to accept or to reject any or all bids. Palm Beach County also reserves the right to (1) waive any non-substantive irregularities and technicalities; (2) reject the bid of any bidder who has previously failed in the proper performance of a contract of a similar nature, who has been suspended or debarred by another governmental entity, or who is not in a position to perform properly under this award; and (3) inspect all facilities of bidders in order to make a determination as to its ability to perform.
Palm Beach County reserves the right to reject any offer or bid if the prices for any line items or subline items are materially unbalanced. An offer is materially unbalanced if it is mathematically unbalanced, and if there is reason to believe that the offer would not result in the lowest overall cost to the County, even though it is the lowest evaluated offer. An offer is mathematically unbalanced if it is based on prices which are significantly less than fair market price for some bid line item and significantly greater than fair market price for other bid line items. Fair market price shall be determined based on industry standards, comparable bids or offers, existing contracts, or other means of establishing a range of current prices for which the line items may be obtained in the market place. The determination of whether a particular offer or bid is materially unbalanced shall be made in writing by the Purchasing Director, citing the basis for the determination.
 - j. **NON-EXCLUSIVE:** The County reserves the right to acquire some or all of these goods and services through a State of Florida contract under the provisions of Section 287.042, Florida Statutes, provided the State of Florida contract offers a lower price for the same goods and services. This reservation applies both to the initial award of this solicitation and to acquisition after a term contract may be awarded. Additionally, Palm Beach County reserves the right to award other contracts for goods and services falling within the scope of this solicitation and resultant contract when the specifications differ from this solicitation or resultant contract, or for goods and services specified in this solicitation when the scope substantially differs from this solicitation or resultant contract.
 - k. **OFFER EXTENDED TO OTHER GOVERNMENTAL ENTITIES:** Palm Beach County encourages and agrees to the successful bidder extending the pricing, terms and conditions of this solicitation or resultant contract to other governmental entities at the discretion of the successful bidder.
 - l. **PERFORMANCE DURING EMERGENCY:** By submitting a bid, bidder agrees and promises that, immediately preceding, during and after a public emergency, disaster, hurricane, flood, or act of God, Palm Beach County shall be given "first priority" for all goods and services under the contract. Bidder agrees to provide all goods and services to Palm Beach County immediately preceding, during and after a public emergency, disaster, hurricane, flood, or act of God, at the terms, conditions, and prices as provided in this solicitation on a "first priority" basis. Bidder shall furnish a 24-hour phone number to the County. Failure to provide the goods or services to the County on a first priority basis immediately preceding, during and after a public emergency, disaster, hurricane, flood, or act of God, shall constitute breach of contract and subject the bidder to sanctions from doing further business with the County.
 - m. **SALES PROMOTIONS / PRICE REDUCTIONS / MOST FAVORED CUSTOMER:** Should sales promotions occur during the term of the contract that lower the price of the procured item, the successful bidder shall extend to the County the lower price offered by the manufacturer on any such promotional item. Further, any price decreases effectuated during the contract period by reason of market change or otherwise, shall be passed on to Palm Beach County. Additionally, anytime after award, the successful bidder may offer a reduced price which shall remain in effect for the duration of the contract. The successful bidder warrants that the price(s) shall not exceed the successful bidder's price(s) extended to its most favored customer for the same or similar goods or services in similar quantities, or the current market price, whichever is lower. In the event the successful bidder offers more favorable pricing to one of its customer(s), the successful bidder shall extend to the County the same pricing or the then current market price, whichever is lower.
4. **BID SUBMISSION TIME / AWARD OF BID**
 - a. **OBSERVING THE PUBLISHED BID SUBMISSION TIME:** The published bid submission time shall be scrupulously observed. It is the sole responsibility of the bidder to ensure that their bid arrives in the Purchasing Department prior to the published bid submission time. Any bid delivered after the precise published time of bid submission shall not be considered, and shall be returned to the bidder unopened if bidder identification is possible without opening. Bid responses by telephone, electronics, or facsimile shall not be accepted. Bidders shall not be allowed to modify their bids after the published bid submission time.
 - b. **POSTING OF AWARD RECOMMENDATION:** Recommended awards shall be publicly posted for review, at the Purchasing Department and on the Purchasing Department website at www.pbcgov.org/purchasing prior to final approval, and shall remain posted for a period of five (5) business days. The official posting on the Purchasing Department website shall prevail if a discrepancy exists between the referenced listings.
 - c. **PROTEST PROCEDURE:** Protest procedures are provided in the Palm Beach County Purchasing Code. Protests must be submitted in writing, addressed to the Director of Purchasing, via hand delivery, mail or fax to (561) 242-6705. Protest must identify the solicitation, specify the basis for the protest, and be received by the Purchasing Department within five (5) business days of the posting date of the recommended award. The protest is considered filed when it is received by the Purchasing Department. Failure to file protest as outlined in the Palm Beach County Purchasing Code shall constitute a waiver of proceedings under the referenced County Code.
 5. **CONTRACT ADMINISTRATION**
 - a. **DELIVERY AND ACCEPTANCE:** Deliveries of all items shall be made as soon as possible. Deliveries resulting from this bid are to be made during the normal working hours of the County. Time is of the essence and delivery dates must be met. Should the successful bidder fail to deliver on or before the stated dates, the County reserves the right to CANCEL the order or contract and make the purchase elsewhere. The successful bidder shall be responsible for making any and all claims against carriers for missing or damaged items.

Delivered items shall not be considered "accepted" until an authorized agent for Palm Beach County has, by inspection or test of such items, determined that they appear to fully comply with specifications. The Board of County Commissioners may return, at the expense of the successful bidder and for full credit, any item(s) received which fail to meet the County's specifications or performance standards.
 - b. **FEDERAL AND STATE TAX:** Palm Beach County is exempt from Federal and State taxes. The authorized agent for Purchasing shall provide an exemption certificate to the

successful bidder, upon request. Successful bidders are not exempted from paying sales tax to their suppliers for materials to fulfill contractual obligations with the County, nor are successful bidders authorized to use the County's Tax Exemption Number in securing such materials. Any sales tax paid by successful bidders to their suppliers for materials to fulfill contractual obligations with the County are not reimbursable by the County to the successful bidder.

- c. **PAYMENT:** In order for Palm Beach County to make payment, the Vendor's Legal Name; Vendor's Address; and Vendor's TIN/FEIN Number on the successful bidder's bid; must be exactly the same as it appears on the invoice and in Palm Beach County's VSS system which can be accessed at <https://pbcvssp.co.palm-beach.fl.us/webapp/vssp/AltSelfService>. Successful bidders shall send **ALL ORIGINAL** invoices to the following address and may send copies of invoices to the Palm Beach County Department requesting the goods/services. Invoices submitted on carbon paper shall not be accepted.

**PALM BEACH COUNTY
FINANCE DEPT.
P.O. BOX 4036
WEST PALM BEACH, FL 33402-4036**

Payment shall be made by the County after goods / services have been received, accepted and properly invoiced as indicated in the contract and / or order. Invoices must bear the order number. The Florida Prompt Payment Act is applicable to this solicitation. Interest penalties will only be paid in accordance with the Florida Prompt Payment Act, Florida Statute 218.70.

Note: Palm Beach County Vendors can now be paid by Credit Card via the County's voluntary Payment Manager Program. For vendors who don't have a merchant account, one is needed to utilize the Program. For vendors with a merchant account, you will need to enroll with the Palm Beach County Clerk & Comptroller's office. For information, contact the Palm Beach County Clerk & Comptroller at pbcpaymentmgr@mypalmbeachclerk.com.

- d. **CHANGES:** The Director of Purchasing, Palm Beach County, by written notification to the successful bidder may make minor changes to the contract terms. Minor changes are defined as modifications which do not significantly alter the scope, nature, or price of the specified goods or services. Typical minor changes include, but are not limited to, place of delivery, method of shipment, minor revisions to customized work specifications, and administration of the contract. The successful bidder shall not amend any provision of the contract without written notification to the Director of Purchasing, and written acceptance from the Director of Purchasing or the Board of County Commissioners.
- e. **DEFAULT:** The County may, by written notice of default to the successful bidder, terminate the contract in whole or in part if the successful bidder fails to satisfactorily perform any provisions of this solicitation or resultant contract, or fails to make progress so as to endanger performance under the terms and conditions of this solicitation or resultant contract, or provides repeated non-performance, or does not remedy such failure within a period of 10 days (or such period as the Director of Purchasing may authorize in writing) after receipt of notice from the Director of Purchasing specifying such failure. In the event the County terminates the contract in whole or in part because of default of the successful bidder, the County may procure goods and / or services similar to those terminated, and the successful bidder shall be liable for any excess costs incurred due to this action.
- If it is determined that the successful bidder was not in default or that the default was excusable (e.g., failure due to causes beyond the control of, or without the fault or negligence of, the successful bidder), the rights and obligations of the parties shall be those provided in Section 5f, "Termination for Convenience".
- f. **TERMINATION FOR CONVENIENCE:** The Director of

Purchasing may, whenever the interests of the County so require, terminate the contract, in whole or in part, for the convenience of the County. The Director of Purchasing shall give five (5) days prior written notice of termination to the successful bidder, specifying the portions of the contract to be terminated and when the termination is to become effective. If only portions of the contract are terminated, the successful bidder has the right to withdraw, without adverse action, from the entire contract.

Unless directed differently in the notice of termination, the successful bidder shall incur no further obligations in connection with the terminated work, and shall stop work to the extent specified and on the date given in the notice of termination. Additionally, unless directed differently, the successful bidder shall terminate outstanding orders and / or subcontracts related to the terminated work.

- g. **REMEDIES:** No remedy herein conferred upon any party is intended to be exclusive of any other remedy, and each and every such remedy shall be cumulative and shall be in addition to every other remedy given hereunder now or hereafter existing at law, or in equity, by statute or otherwise. No single or partial exercise by any party of any right, power, or remedy hereunder shall preclude any other or further exercise thereof.
6. **PALM BEACH COUNTY OFFICE OF THE INSPECTOR GENERAL AUDIT REQUIREMENTS:** Pursuant to Palm Beach County Code, Section 2-421 – 2-440, as amended, Palm Beach County's Office of Inspector General is authorized to review past, present and proposed County contracts, transactions, accounts, and records. The Inspector General's authority includes, but is not limited to, the power to audit, investigate, monitor, and inspect the activities of entities contracting with the County, or anyone acting on their behalf, in order to ensure compliance with contract requirements and to detect corruption and fraud. Failure to cooperate with the Inspector General or interfering with or impeding any investigation shall be a violation of Palm Beach County Code, Section 2-421 – 2-440, and punished pursuant to Section 125.69, Florida Statutes, in the same manner as a second degree misdemeanor.
7. **BUSINESS INFORMATION:** If bidder is a Joint Venture for the goods / services described herein, bidder shall, upon request of Palm Beach County, provide a copy of the Joint Venture Agreement signed by all parties.

THIS IS THE END OF "GENERAL CONDITIONS"

SPECIAL CONDITIONS

8. GENERAL / SPECIAL CONDITION PRECEDENCE

In the event of conflict between General Conditions and Special Conditions, the provisions of the Special Conditions shall have precedence.

9. PRE-BID CONFERENCE (MANDATORY)

All interested parties/bidders are **required** to attend a pre-bid conference which is scheduled to be held at the Palm Beach County Purchasing Department, 50 S. Military Trail, Room 1N-142, West Palm Beach, FL 33415 on April 24, 2018 commencing at 2:00 P.M.

At this time, the County's representative will be available to answer questions relative to this Invitation for Bid (IFB). Any suggested modifications may be presented in writing to, or discussed with the County's representative(s) as possible amendments to the Invitation for Bid. **THE BIDDER'S FAILURE TO ATTEND THIS CONFERENCE SHALL RESULT IN DISQUALIFICATION OF THEIR BID.**

All interested parties/bidders shall sign an attendance sheet. The attendance sheet will be collected at TBD (10 minutes after stated start time) local time. Those arriving after the attendance sheet has been collected shall be considered as not in attendance for purposes of the mandatory pre-bid conference.

In accordance with the provisions of ADA, auxiliary aids or services will be provided upon request with at least three days notice.

10. QUALIFICATION OF BIDDERS

This bid shall be awarded only to a responsive and responsible bidder, qualified to provide the goods and/or service specified. The bidder shall, upon request, promptly furnish the County sufficient evidence in order to confirm a satisfactory performance record. Such information may include an adequate financial statement of resources, the ability to comply with required or proposed delivery or performance schedule, a satisfactory record of integrity and business ethics, the necessary organization, experience, accounting and operation controls, and technical skills, and be otherwise qualified and eligible to receive an award under applicable laws and regulations.

The bidder should submit the following information with their bid response; however, if not included, it shall be the responsibility of the bidder to submit all evidence, as solicited, within a time frame specified by the County (normally within two working days of request). Failure of a bidder to provide the required information within the specified time frame is considered sufficient cause for rejection of their bid. **Information submitted with a previous bid shall not satisfy this provision.**

- A. "Provide evidence that the bidder has under their employment, a permanent full-time Registered Communications Distribution Designer (RCCD); and,
- B. Provide written evidence that bidder's company has an AMP ND & I (Network Design and Installation) Certification.
- C. Provide written evidence to include the following:
 1. Total number of years in the business, including all other government agencies;
 2. A minimum of five (5) years showing experience in the specifications listed within the bid; and
 3. General capabilities of the firm.
- D. Provide a minimum of three (3) references demonstrating the successful provision of professional services to staff similar projects within the past two (2) years. Each reference shall include the following:
 1. Name of Client Company, contact names, addresses, telephone/fax numbers, email address, dollar amount of contracts and dates of service.
 2. Types of services provided, with the number of staff and average length of time each were utilized during the contract.

11. CRIMINAL HISTORY RECORDS CHECK

This solicitation includes sites and/or buildings which have been designated as either "critical facilities" or "criminal justice information facilities" pursuant to Palm Beach County Code Section 2-371 through 2-377, the Palm Beach County Criminal History Records Check Ordinance ("Ordinance"), and Resolution R-2003-1274, as amended. County staff representing the User County Department will contact the recommended awardee(s) and provide specific instructions for meeting the requirements of this Ordinance. This provision applies to and must be adhered to by all vendors, contractors, and subcontractors of contractors, including repair persons and delivery persons, who are unescorted when entering critical facilities or criminal justice information facilities.

Individuals passing the background check will be issued a badge. Contractor shall make every effort to collect the badges of its employees and its subcontractors' employees upon conclusion of the contract work and return them to the County. If the contractor or its subcontractor terminates an employee who has been issued a badge, the Contractor must notify the County within two (2) hours. At the time of termination, the contractor shall retrieve the badge and return it to the County in a timely manner. The County reserves the right to suspend any Contractor that; 1) does not comply with the requirements of County Code Section 2-371 through 2-377 as amended; 2) does not contact the County regarding a terminated contractor employee or subcontractor employee within the stated time; or 3) fails to make a good faith effort in attempting to comply with the badge retrieval policy.

12. AWARD (ALL-OR-NONE)

Palm Beach County shall award this bid to the lowest, responsive, responsible bidder on an all-or-none, total offer basis. Therefore, it is necessary for a bidder to bid on every item in order to have a bid considered. It is also required that the bidder carefully consider each item, and make sure that each one meets the specifications as indicated. In the event that one item does not meet such specifications the entire bid will be considered non-responsive. Additionally, if a bidder enters a No Bid, or N/A for any item, they will be considered non-responsive.

13. PERMIT(S) (PERMIT PRICING AT COST)

The price to be paid for permit(s) purchased for Palm Beach County as a result of this bid award, shall be based on the bidder's cost of the actual permit. With each invoice that includes permit(s) not covered by the service as defined herein, the bidder shall supply original permit(s) cost documentation to the Palm Beach County Department requesting the service as well as to the Finance Department, Pre-Audit Division, P.O. Box 4036, West Palm Beach, Florida 33402-4036. Any Federal or State taxes paid by the bidder to its suppliers for a permit(s) sold to Palm Beach County as a result of this bid award are not reimbursable by Palm Beach County to the bidder.

14. INVOICES

The successful bidder shall provide the County Finance Department with the original invoice for each billable activity completed. A duplicate copy of the invoice shall be provided to ISS Network Services. Network Services will utilize the duplicate invoice copy to validate the billing invoice and effect the *correct* payment amount through the Finance Department.

All billing invoices submitted to the County, for Time & Material (T&M) and billable trouble activities, shall contain the following documentation and information:

- Location (County work center and complete address) where work was performed
- Network Services trouble ticket (HD) number or Network Services Work Order (PTS) number
- County Delivery Order (DO) number
- Name of Network Services representative generating the service request
- Successful bidder's trouble ticket number or T&M work sheet identification number
- Description of T&M work activity actually performed or a description of trouble clearance. List of all material used to complete the work request or trouble AND copy of receipt(s) from successful bidder's supply source depicting actual cost of material provided to complete the work request.
- Job start date, end date and time
- Test results completed after installation as specified in Specifications, Section 7.2.5

Network Services is required to validate the accuracy of all billing invoices before payment authorization can be made; therefore, billing invoices received which do not contain the required information will result in a delay in payment. Invoices which cannot be validated by the County *shall not be paid*.

The successful bidder shall provide ISS Fiscal Manager with a monthly account statement. Account statements shall contain a detailed listing of all invoices presented to the County with an indication of the status (paid or unpaid) of each invoice.

15. METHOD OF ORDERING (TERM CONTRACT)

A contract shall be issued for a term of twelve (12) months or until the estimated amount is expended, at the discretion of the County. The County will order on an "as needed" basis.

16. F.O.B. POINT

The F.O.B. point shall be destination. Exact delivery point will be indicated on the term contract delivery order (DO). Bid responses showing other than F.O.B. destination shall be rejected. Bidder retains title and assumes all transportation charges, responsibility, liability and risk in transit, and shall be responsible for the filing of claims for loss or damage

17. AS SPECIFIED

A purchase order or term contract delivery order (DO) will be issued to the successful bidder with the understanding that all items delivered must meet the specifications herein. Palm Beach County will return, at the expense of the successful bidder, items not delivered as specified.

At the option of Palm Beach County, item(s) from any delivery may be submitted to an independent testing laboratory to determine conformity to respective specifications. Bidders shall assume full responsibility for payment of any and all charges for testing and analysis of any product offered or delivered that does not conform to the minimum required specifications.

18. QUANTITY

The quantities shown are estimated. Palm Beach County reserves the right to increase or decrease the total quantities as necessary to meet actual requirements. Unless stipulated otherwise, Palm Beach County will accept NO minimum order requirements. Additionally, bidders are cautioned to bid in accordance with the unit specified on the bid response page.

19. RENEWAL OPTION

The successful bidder shall be awarded a contract for twelve (12) months with the option to renew for four (4) additional twelve (12) month period(s). The option for renewal shall only be exercised upon mutual written agreement and with all original terms, conditions and unit prices adhered to with no deviations. The unit prices bid, shall apply for the initial term and each renewal period. Any renewal shall be subject to the appropriation of funds by the Board of County Commissioners. A renewal shall be revoked if the successful bidder is suspended by the Purchasing Department prior to the commencement of the renewal period.

20. WARRANTY

The successful bidder shall fully warrant all labor furnished hereunder against defect in workmanship for a period of ninety (90) days from date of delivery and acceptance by Palm Beach County and equipment furnished hereunder against defect in materials for a period of one (1) year from date of delivery and acceptance by Palm Beach County. Should any defect in materials or workmanship, excepting ordinary wear and tear, appear during the above stated warranty period, the successful bidder shall repair or replace same at no cost to Palm Beach County, immediately upon written notice from the Director of Purchasing.

21. WORK SITE SAFETY/SECURITY

The successful bidder shall at all times guard against damage or loss to the property of Palm Beach County, the bidder's own property, and/or that of other contractors, and shall be held responsible for replacing or repairing any such loss or damage. When applicable, the successful bidder shall provide fences, signs, barricades, flashing lights, etc. necessary to protect and secure the work site(s) and insure that all County, State of Florida, OSHA, and other applicable safety regulations are met. Additionally, successful bidder shall provide for the prompt removal of all debris from Palm Beach County property. Palm Beach County may withhold payment or make such deductions as deemed necessary to ensure reimbursement or replacement for loss or damage to property through negligence of the successful bidder or its agents.

22. INSURANCE REQUIRED

It shall be the responsibility of the successful bidder to provide evidence of the following minimum amounts of insurance coverage to Palm Beach County, c/o Insurance Tracking Services, Inc. (ITS), P.O. Box 20270, Long Beach, CA 90801. Subsequently, the successful bidder shall, during the term of the Contract, and prior to each renewal thereof, provide evidence of insurability to ITS at bbc@instracking.com or fax (562) 435-2999, which is Palm Beach County's insurance management system, prior to the expiration date of each and every insurance required herein.

Commercial General Liability Insurance. Successful bidder shall maintain Commercial General Liability Insurance, or similar form, at a limit of liability not less than \$500,000 Each Occurrence for Bodily Injury, Personal Injury and Property Damage Liability. Coverage shall include Premises and/or Operations, Independent Contractors, Products and/or Completed Operations, Personal Injury/Advertising Liability, Contractual Liability and Broad Form Property Damage coverages. Coverage for the hazards of explosion, collapse and underground property damage (X-C-U) must also be included when applicable to the work to be performed. **This coverage shall be endorsed to include Palm Beach County as an Additional Insured.**

Business Auto Liability Insurance. Successful bidder shall maintain Business Auto Liability Insurance at a limit of liability not less than \$500,000 Combined Single Limit Each Accident for all owned, non-owned, and hired automobiles. (In this context, the term "Autos" is interpreted to mean any land motor vehicle, trailer or semi trailer designed for travel on public roads.) In the event successful bidder neither owns nor leases automobiles, the Business Auto Liability requirement shall be amended allowing successful bidder to maintain only Hired & Non-Owned auto Liability and shall provide either an affidavit or a letter on company letterhead signed by the bidder indicating either the bidder does not own any vehicles, and if vehicles are acquired throughout the term of the contract, bidder agrees to purchase "Owned Auto" coverage as of the date of acquisition. This amended requirement may be satisfied by way of endorsement to the Commercial General Liability, or separate Business Auto coverage form.

Workers' Compensation and Employer's Liability Insurance. Successful bidder shall maintain Workers' Compensation & Employer's Liability Insurance in accordance with Florida Statute Chapter 440.

A signed Certificate or Certificates of Insurance, evidencing that required insurance coverages have been procured by the successful bidder in the types and amounts required hereunder shall be transmitted to the County via the Insurance Company/Agent within a time frame specified by the County (normally within 2 working days of request). Failure to provide required insurance shall render your bid non responsive.

Except as to Business Auto, Workers' Compensation and Employer's Liability (and Professional liability, when applicable), said Certificate(s) shall clearly confirm that coverage required by the contract has been endorsed to include Palm Beach County as an Additional Insured.

Said Certificate(s) of Insurance shall, to the extent allowable by the insurer, include a minimum thirty (30) day endeavor to notify due to cancellation (10 days for nonpayment of premium) or non-renewal of coverage. It is the responsibility of the successful bidder to ensure that all required insurance coverages are maintained in force throughout the term of the contract. Failure to maintain the required insurance shall be considered default of contract.

All insurance must be acceptable to and approved by County as to form, types of coverage and acceptability of the insurers providing coverage.

Bidder shall agree that all insurance coverage required herein shall be provided by Bidder to County on a primary basis.

SPECIFICATIONS
IFB #18-055/HS

**FIBER OPTIC ENGINEERING, DESIGN, MATERIAL,
SUPPLIES AND INSTALLATION, TERM CONTRACT**

PURPOSE AND INTENT

The sole purpose and intent of this Invitation for Bid (IFB) is to secure firm, fixed pricing and establish a term contract for the procurement, installation, integration, repair and support services for the Enterprise Network System to include fixed pricing for the cable, material, equipment and installation labor rate(s) for Palm Beach County.

COUNTY'S RESPONSIBILITIES

The County shall:

1. Order services on an as needed basis.
2. Designate a County Project Supervisor, which shall have the responsibility to ensure compliance with contract requirements, such as, but not limited to, inspection and acceptance.
3. Reserve the right to require the removal of any of the successful bidder's employees from the project, if in the County's judgement, such removal is necessary to protect the County's interest.
4. Provide access to the work area.
5. Inspect the service upon completion of work to ensure that the work is acceptable.

SUCCESSFUL BIDDER'S RESPONSIBILITIES

The successful bidder shall:

1. Coordinate all activities with the County Project Supervisor on a daily basis.
2. Not substitute from the agreed upon installation plan or repair method, as well as the equipment to be used without prior written approval from the designated Count Project Supervisor.
3. Ensure that all equipment operators (including subcontractors) are competent in the use of assigned equipment.
4. Ensure that all personnel (including subcontractors) are in uniform at all time and have on their body, all of the required identification required within the contract.
5. Maintain a clean and professional work environment at all times.
6. Use full-time permanent employees for the following:
 - a. All PE services
 - b. All BICSI/RCCD services
 - c. All CADD services
 - d. All GIS services
 - e. All clerical services
 - f. All ROW strand mapping, design and permitting
 - g. All fiber optic cable installation
 - h. All fiber optic cable terminating, splicing and testing

SUBCONTRACTOR'S RESPONSIBILITIES

The use of subcontractors on the contract shall be strictly restricted to the following:

1. Conduit installation – hand trenched, machine trenched or bridge mounted
2. Directional boring
3. Direct bury by plowing
4. Pull box installation
5. Pull box concrete installation
6. Innerduct installation
7. Pole riser installation
8. Detectable marking tape installation
9. Concrete pole installation
10. Communication or device cabinet installation
11. Route marker or ROW marker post installation
12. Tree trimming

1.0 INTRODUCTION

1.1 COUNTY ACCEPTANCE

- 1.1.1** Payment shall be rendered **ONLY** upon County's acceptance of said service. Acceptance is defined as a receipt signed by the designated County representative(s), as acknowledgement of services rendered.

1.2 SCOPE

- 1.2.1** This IFB delineates the requirements for the material, labor and support services to be provided.
- 1.2.2** The successful bidder shall, on an as needed basis, be responsible for the integration, supply and/or installation, connection, and maintenance/repair of the County's Enterprise Network (EN) Systems, OSP (outside plant), various types of fiber optic cable, equipment and supplies, and general network-type cabling systems. The successful bidder may be required to also provide the same or like services, on an as needed basis, in support of new County-owned buildings and facilities.
- 1.2.3** There are approximately two-hundred seventy (270) plus County facilities where these services may be required. Other sites may be added during the term of the contract, dependent on County needs.
- 1.2.4** The reference to "270 plus" County facilities is solely provided for informational purposes. The successful bidder will be required to provide services as specified, on a time and material basis, anywhere geographically within Palm Beach County.
- 1.2.5** The overall scope includes, but is not limited to, providing and/or installing (including: inter-building, intra-building, fiber optic cabling) fiber optic equipment, and maintenance/repair services. When practical and possible, the successful bidder shall utilize existing cable runs and conduits, unless directed otherwise by Network Services.
- 1.2.6** Palm Beach County ISS Network Services hereinafter referred to as Network Services, will periodically notify the successful bidder of required work to be performed.

2.0 SPECIFICATIONS – GENERAL

2.1 QUALIFICATIONS OF BIDDERS

- 2.1.1** See Qualifications of Bidders listed under Special Conditions #10.

2.2 PRICING

- 2.2.1** Network Services reserves the right to utilize the resulting term contract for the purpose of obtaining material only, obtaining labor only, or obtaining a combination of material and labor and the hourly rates offered on the Bid Response pages.

2.3 ACCEPTANCE

- 2.3.1** Any discrepancies in equipment, defects in cabling, operational difficulties or other problems encountered during final testing, and post operation evaluation will be furnished to the successful bidder in writing, per project phase.
- 2.3.2** Resolution of these items to the satisfaction of the County, is required prior to system acceptance. Network Services staff shall verify each of the major components, including but is not limited to, performing random testing of the fiber optic cable.
- 2.3.3** The date of "acceptance" is defined as the date all required cabling, material, and associated hardware have been installed, tested, operationally activated (when requested), and the required documentation has been presented to the County and all identified discrepancies have been satisfactorily completed, on a per-project basis.

3.0 PROJECT SPECIFICATIONS – NON-TECHNICAL

3.1 MATERIAL AND WORKMANSHIP

- 3.1.1** The successful bidder shall schedule and coordinate all installation, rearrangement, removal, or repair activity of any/all equipment, through Network Services.
- 3.1.2** All work shall be performed in a professional manner that is compatible with the County's normal business.

- 3.1.3** The successful bidder shall comply with all applicable national, Federal, State, and local rules, regulations, codes, and standards for safety, building, electrical, fire, communications low voltage wiring, and installation work. The successful bidder also understands and agrees that all equipment and/or services provided to the County, shall comply with specifications set forth in the applicable sections of the Federal Communications Commission Rules and Regulations. In addition, work performed shall be in accordance with industry accepted practices and standards, such as those set forth in EIA/TIA, BISCI. Additionally, all cable, wire, and associated material and equipment provided and installed by the successful bidder is to have been tested by an approved testing facility and listed for the intended use. Additional information relating to codes, etc., is contained in the following Section 3.1.4.
- 3.1.4** Installations/Products are to be in accordance with the following codes and standards. Where there is a conflict between the bid document and the applicable code, the most stringent shall govern:
- American National Standards Institute (ANSI). TIA/EIA – Telecommunications Industry Association/Electronics Industries Association
 - ANSI/TIA/EIA-569-A – Commercial Building Standard for Telecommunications Pathways and Spaces, latest editions
 - ANSI/TIA/EIA-606 – The Administration Standard for Telecommunications Infrastructure of Commercial Building, latest edition
 - ANSI/TIA/EIA-607 – Commercial Building Grounding and Bonding Requirements for Telecommunications, latest editions
 - ANSI/TIA/EIA TSB 72 – Centralized Optical Fiber Cabling Guidelines
 - ANSI/TIA/EIA TSB 75 – Additional Horizontal Cabling Practice for Open Offices
 - ANSI/NFPA 70 Article 318 – Cable Trays
 - American Society for Testing and Material (ASTM)
 - Building Industry Consulting Service International (BISCI)
 1. “Telecommunications Distribution Methods Manual”
 2. “Telecommunications Installation Manual”
 3. “Customer-Owned Outside Plant Design Manual”
 - Underwriters Laboratories (UL)
 - Federal Communications Commission (FCC)
 - Americans with Disabilities Act Requirements (ADA)
 - Occupational Safety and Health Administration Regulations (OSHA)
 - National Fire Protection Association (NFPA)
 - Institute of Electrical and Electronic Engineers (IEEE) Applications standards including, but is not limited to, LAN Standard for Ethernet IEEE 802.3
 - National Electrical Manufacturers Association (NEMA)
 - National Electrical Code (NEC)
 - National Electrical Safety Code (NESC)
 - ISO/IEC – International Standard Organization and International Electro technical Commission
- 3.1.5** All cable, equipment, material, components provided by the successful bidder, shall be guaranteed to be new. The County reserves the right to supply any/all cable, equipment, material or components out of existing stock.
- 3.1.6** No cable, equipment, material, components shall be borrowed, substituted, or removed without the express knowledge and consent of Network Services.
- 3.1.7** See Worksite Safety/Security listed under Special Conditions #20.

- 3.1.8** The successful bidder shall insure that all personnel assigned to projects have the expertise to perform the services, and have the ability to operate any and all tools and equipment utilized in conjunction with this service, and all personnel on a job site have appropriate identification clearly identifying the individuals and the firm they represent available upon request. **NOTE:** All successful bidder's employees and all subcontractor's employed by the successful bidder, shall be required to comply with the County's ordinance/policies regarding access to County facilities and as such, shall be required to comply with those requirements prior to having access to County facilities.
- 3.1.9** All inside/outside plant installation personnel for inside plant cabling, shall be required to wear uniforms on site. The company's name shall be predominately displayed. Palm Beach County vendor badges are to be worn at all times.
- 3.1.10** The successful bidder is solely responsible for obtaining all permits for all work requests. The County shall reimburse the successful bidder for the actual cost of the permits. For projects associated with new facilities under construction, the successful bidder is required to obtain "stand alone" permits. Sub-permits, under the General Contractor's permits will not be allowed unless specifically approved by the County's Capital Improvements Division of Facilities Development & Operations Department. Additionally, the successful bidder is solely responsible for any/all costs associated to repair any items or County facility, structure, and/or property which become damaged by the successful bidder's installation activity.
- 3.1.11** Any and all equipment, material, components, cable, etc., provided, installed and operationally activated by the successful bidder that is deemed unacceptable by the County or does not comply with the specifications herein and rules, regulations, codes, ordinances, or standards as indicated in other sections of this document, shall be replaced with appropriate and compliant products by the successful bidder, prior to system acceptance, at no cost whatsoever to the County.
- 3.1.12** All installed backbone fiber cabling shall be end to end tested. Fiber links shall meet the EIA/TIA requirements for connector mated pair reflection loss and splice loss as applicable.
- 3.1.13** Consumables – Items used for the installation of fiber infrastructure that are expended to complete an installation process are the sole responsibility of the successful bidder. Examples of these items are: jet line, electrical tape, label tape, solvents, cleaners, cable lube, polishing paper, etc.

3.2 MANUALS AND DOCUMENTATION

- 3.2.1** It shall be the responsibility of the successful bidder to provide the as-built documentation. As-built information should be understood to be part of the work units authorized by County staff.

The requirements contained below address some of the data collection processes and methodologies for the outside plant (OSP) as-built documentation.

- All OSP infrastructures shall be documented utilizing GPS instruments as construction occurs.
- Provide positioning data for trench deployment. Documentation shall include conduit support infrastructure description, when installation is different than the standard 2" conduit or when more than a single conduit is laced underground, as well as placement. GPS coordinates shall be taken at 150 foot intervals and/or at any running line changes, infrastructure changes (manhole, hand holes, pull boxes, cabinets, terminations) or other points, as necessary.
- Provide positioning data for directional bores. Documentation shall include GPS coordinates for each rod length with its corresponding depth. Other points shall be documented as necessary.
- Provide positioning data of aerial infrastructure by taking GPS coordinates of each pole. Documentation shall include attachment details such as pole type, pole class, riser conduit, height of attachment (HOA), etc., as well as any aerial slacks and aerial splices between poles.
- Provide positioning data of service loops with slack length, as well as the sequential cable length markings at each splice vault, pull box, terminations or other points.
- All GPS datasets ported to GIS features classes shall be projected in the NAD 1983 HARN State Plan Florida East FIPZONE 0901 coordinate system, with the unit of measure being U.S. Foot.
- All GPS points shall have sub foot (< 12 inch) accuracy for horizontal (X, Y) and vertical (Z) axis, unless otherwise specified.
- Submit as-built data as ESRI file geodatabase. Line and point attributes shall be appropriately formatted and accurately recorded.

4.0 SERVICE REQUIREMENTS

4.1 CUSTOMER SERVICE

- 4.1.1** The County requires that the successful bidder provide qualified installation, maintenance, repair, and support services, from a service center which shall permit adherence to the service response time frame requirements identified in paragraph 4.2.4.
- 4.1.2** The successful bidder shall assign an Account Manager responsible for coordinating orders for installations, rearrangements, removals, repairs and for resolving billing discrepancies.
- 4.1.3** The successful bidder shall provide an escalation list of names, addresses, and telephone numbers to the Network Services representative, within five (5) working days after bid award.
- 4.1.4** The successful bidder shall have a Return Material Authorization (RMA) Program to include, at a minimum, the following:
- Tracking Number
 - Item Description
 - Date Initiated
 - Reason for Return
 - Disposition of Returned Material
 - Expected Resolution Date
- 4.1.5** The successful bidder shall have a Business as Usual (BAU) Program to include, at a minimum, the following:
- Project Tracking Number with Date
 - Brief Description
 - Date initiated
 - Anticipated Installation Start/Delivery
 - Anticipated Construction Completion
 - Responsibility/Ownership for Completion (e.g., material delivery, additional information, engineering)
 - Daily updates of standard work request additions/completions and weekly status updates of on-going projects type work requests.
- 4.1.6** Due to the importance of the Enterprise Network and the Voice Network, in the operation of the County's business, the successful bidder is required to provide Business Recovery Services to the County in the event of natural and/or other disasters.

4.2 INSTALLATIONS/REARRANGEMENTS/REPAIRS

- 4.2.1** All repairs shall be made using Original Equipment Manufacturer (OEM) components. Substitutes, unless designated as a replacement by the manufacturer of the equipment, are not acceptable.
- 4.2.2** The successful bidder shall provide routine and emergency service as required and in accordance with manufacturer and warranty standards. Such action shall be continuous until the problem, or problems, are 100% corrected. There shall be no charge for any work that is covered under the warranty period. The successful bidder shall be responsible for all warranty work even after the contract expires, if work/materials are still under warranty.
- 4.2.3** Should any condition exist which precludes or inhibits the successful bidder's ability to satisfy the required response times, the successful bidder shall inform Network Services in writing within twenty-four (24) clock hours.
- 4.2.4** The successful bidder shall initiate repair, and time and material service, after the County requests service as follows:
- | | | |
|---------------------------|----|--|
| Emergency Trouble Service | -- | Within two (2) clock hours of reported trouble |
| Time & Material Service | -- | Within five (5) workdays of requested work |
- 4.2.5** **Emergency Trouble Service:** An Emergency Trouble Service is defined as the failure of the network backbone and/or passive/active network component which renders an entire area incapable of performing any of its functions (e.g., a zone, floor, or communications between sites).
- a.** In the event of an Emergency Trouble Service situation, a trained and qualified technician shall be onsite within two (2) clock hours. Once a return to service plan is agreed upon, the items needed for the repair as described in Section 4.2.5.b. shall be onsite within two (2) clock hours.

- b. The successful bidder shall have fusion splicer, OTDR, 5,000 feet of 96 and 48 strand single-mode fiber, and 2,000 feet of 24 strand, multi-mode fiber cable in inventory for deployment to emergency repair.

4.2.6 Time and Material Service (BAU): Response to BAU requests shall be within five (5) workdays of the requested service.

4.2.7 Should any condition exist that would preclude or inhibit the successful bidder's ability to satisfy the maintenance or order work activity within the above specified time frames, the successful bidder shall notify Network Services immediately. Additionally, a description of the limiting or exempting condition(s) shall be provided to Network Services with a revised completion date of the required work activity. Furthermore, if such constraining conditions are temporary in nature, the successful bidder shall indicate when and/or under what conditions he would again become fully compliant with required response times.

4.2.8 The County's normal working hours shall be defined as Monday through Friday, 8:00 a.m. to 5:00 p.m., excluding County holidays.

5.0 COMMENCEMENT OF WORK NOTIFICATION

- 5.1** Network Services shall call the successful bidder's service center, to report troubles and request all repair and maintenance service. Network Services shall provide the location and all pertinent information related to the trouble report, including the Network Services, (internal) trouble identification number.
- 5.2** Network Services shall contact the successful bidder's service center via fax/e-mail, to request T&M service activity. The fax/e-mail transmittal shall contain all information necessary for scheduling and responding to the request, including location where work is to be performed, Network Services (internal) work request number, requesting Network Services contact person's name and telephone number, on site (work location) contact name & telephone number, description of work activity to be performed and/or listing of material to be procured and/or installed.
- 5.3** The successful bidder shall provide to Network Services a detailed status report on all open projects on a weekly basis. The report shall be delivered via email to the project contact for Network Services.
- 5.4** The successful bidder shall meet (and/or discuss project activity/requirements) with Network Services representative prior to the commencement of any project. Furthermore, the successful bidder's Project Manager shall keep Network Services representative advised of work progress from commencement through completion.
- 5.5** Upon request, the successful bidder shall provide a complete itemized estimate, including scope of work, parts, professional services, etc., per project. These per project, estimates shall be approved in writing, by Network Services authorized personnel, prior to commencement of any project. Additionally, there may be instances where Network Services will request a "not-to-exceed" cost for material and labor on a specific project. The successful bidder shall be required to provide the "not-to-exceed" cost then, if directed to by Network Services, to complete the specific project for no more than the "not-to-exceed" dollar amount submitted prior to work commencement.
- 6.6** For installed products, "Operational Date" is the date all station lines, network backbones, and campus network (when applicable) are fully operational and ready for use.

6.0 INVOICING AND BILLING REQUIREMENTS

- 6.1** See Invoices listed under Special Conditions #13.

7.0 PROJECT SPECIFICATION - TECHNICAL

- 7.1** This "overall" project, with its individual work requests, shall consist of, but is not limited to, the procurement, delivery, installation and testing, of fiber optic cables, fiber optic cable terminations and terminating equipment and hardware, etc.

7.2 TESTING REQUIREMENTS

- 7.2.1** The successful bidder shall be required to perform tests on all fiber installed, to ensure operational and technical conformity. Dispersion, splice loss, and optical time domain tests shall be performed on all fiber optic cable installed.
- 7.2.2** Dispersion, splice loss, and optical time domain tests, shall be performed on all fiber optic cable installed.

- 7.2.3** Each reel of fiber optic cable provided by the successful bidder shall be accompanied by the manufacturer's test data showing the conformance to the requirements described herein. The manufacturer's test data shall identify each fiber in each cable and list its factory tested attenuation in decibels per kilometer. This attenuation shall meet as a minimum, the attenuation requirements set forth in Table – Fiber Optic Cable Specifications (Section 7.5.2) included in this document.

Ensure that each finished and installed fiber optic cable segment shall be traceable to the test date on file for each step in its manufacturing process. The successful bidder shall provide the County five (5) calendar days advance notice of the date the cable will be ready for final testing so that County staff may be present at the tests if staff elects.

- 7.2.4** The successful bidder shall test the fiber optic cable at the site storage area prior to installation. Test each optical fiber in the cable from one end and one wavelength with an OTDR compatible with wavelength and fiber type. Check for continuity, kinks, anomalies, and appropriate attenuation. Record each measurement with color, location and type of fiber measured. If the tested loss per kilometer exceeds the loss from the manufacturers test data, the County will reject the cable. An electronic and hard copy shall be provided to Network Services prior to the fiber optic cable being installed.

- 7.2.5** After installation (splicing and termination) is complete, and if specified, the successful bidder shall test the optical fiber in the cable again for the loss characteristics. Perform a uni-directional test on all terminated fibers using the Optical Time Domain Reflectometer (OTDR). Single mode fiber that is a distance of five (5) miles or less shall be shot at a 1310nm wavelength. Single mode fiber that is greater than five (5) miles shall be shot at a 1550nm wavelength. Multi-mode fiber shall be tested at an 850nm wave length. Results of these tests shall be provided to Network Services in both a hard copy and electronic format for acceptance. Any failure that shows up on the successful bidder's OTDR results may result in total replacement of the fiber optic cable. In addition, Network Services may also perform testing with an OTDR for testing result comparison. If any discrepancies are found, resolution of these items to the satisfaction of the County is required prior to system acceptance.

The successful bidder shall notify the County in writing, five (5) calendar days in advance of the testing of the cable, so that the County staff may be present for the tests. Test result printouts shall include, but is not limited to, the following:

- Distance of trace
- Total loss
- Splice loss
- Cable ID
- Fiber ID
- Beginning testing location
- Fiber testing location
- Operator/technician name or initials
- Date and time test was performed
- Test wavelength
- Test pulse width
- Re-factory index

The method of connectivity between the OTDR and the tested fiber shall be factory assembled patch cords, pulse suppression, or launch cables equal to length of 150% of the Dead Zone as published by the OTDR manufacturer. The launch cable shall have the appropriate connectors to allow for connection to the terminated fiber port, without the use of additional couplers.

The successful bidder shall prepare and submit a test procedure for the pre-installation and post installation tests to the County for approval.

7.3 FIRESTOPPING

- 7.3.1** The successful bidder shall be required to firestop all penetrations of floors and walls, including cable "riser" openings. All firestopping and sleeves provided shall comply with all local, state, and national codes, as may be amended.

7.4 OSP CONSTRUCTION CONDUIT – UNDERGROUND

7.4.1 General Requirements

- Consider the locations of conduit as shown on the plans as approximate. Construct conduit runs as straight as possible, and obtain the Engineer's / County's approval of all major deviations in conduit locations from those shown on the plans.
- Do not place more than the equivalent of four quarter bends or 360 degree of bends, including the termination bends, between the two points of termination in the conduit, without a pullbox. Obtain the Engineer's/County's approval to use corrugated flexible conduits for short runs 6 feet or less.
- Use only intermediate metal conduit, rigid galvanized conduit, rigid aluminum conduit or PVC coated intermediate metal conduit for above-ground or underground electrical power service installations.
- Use either schedule 80 PVC or fiberglass reinforced epoxy conduit for installations on bridge decks. Use either schedule 40 PVC or fiberglass reinforced epoxy, conduit for underground and under pavement installations, except for electrical power service.
- When the installation of a conduit requires jacking under paved surfaces, railroads, etc., use an intermediate metal conduit as the sleeve for the underground conduit. Install the underground conduit as shown in the Design Standards, Index No. 17721.
- When a conduit installation changes from underground to above-ground, make the change a minimum of 6 inches below finished grade.
- Install an expansion fitting when conduit crosses an expansion joint of a structure.
- Use couplings and expansion joints made of the same material as the conduit.
- Ensure that all joints are made as specified by the manufacturer and are waterproof.
- For installations not specifically shown, install the conduit in accordance with National Electrical Code (NEC) and/or National Electrical Safety Code (NESC) requirements.
- When earth backfill and tamping is required, place backfill material in layers approximately 12 inches thick, and tamp each layer to a density equal to or greater than the adjacent soil.
- When trenching instead of boring, saw cut and repair all pavement and sidewalks encountered. When backfilling trenches in existing pavement, use a commercially available sand-cement (approximately 10:1 mix ratio).
- Provide a standard clearance between underground control cable and electrical service cable or another parallel underground electrical service cable that meets National Electrical Safety Code requirements.
- Install conduit for electrical and low-voltage systems as shown on the plans or referenced to FDOT Design Standards, Index No. 17721. Consider the locations of conduit as shown on the plans as approximate. Construct conduit runs as straight as possible, and obtain the Engineer's/County's approval of all major deviations in conduit locations from those shown on the plans.
- Provide an outer duct and innerduct that is suitable for underground use in an ambient temperature range of -32 to 130° F, without degradation of material properties.
- Provide outer duct and innerduct that is resistant to benzene, calcium chloride, ethyl alcohol, fuel oil, gasoline, lubricating oil, potassium chloride, sodium chloride, sodium nitrate, and transformer oil, and is protected against degradation due to oxidation and general corrosion.
- Provide outer duct and innerduct with an outer diameter to a minimum wall thickness ratio that complies with ASTM – D3035, Standard Dimension Ratio (SDR) 13.5.
- Provide outer duct and innerduct that meets or exceeds the following:
 1. ASTM – D1238: Tensile Strength – 3000 PSI minimum Elongation – 400% minimum
 2. ASTM – D1238: Melt Index – 0.4 maximum
 3. ASTM – D1505: Density – 0.941 – 0.9 55 g/cc
 4. ASTM – D1693: Condition B – 20% failure, maximum

- 5. ASTM – D2444: Impact – NEMA Standards Publication TC 7
- 6. ASTM – D3350: Cell Classification – 334420 or 34420

- Provide outer duct and innerduct with the coefficient of friction of 0.09 or less.
- Provide 0.5 inch, pre-lubricated, woven polyester tape with a minimum rated tensile strength of 2,500 lbs.

7.4.2 HDPE Outer Duct

Provide a factory lubricated low friction, coilable, high-density conduit constructed over high-density polyethylene (HDPE). Provide outer duct conduit with a smooth outer wall, and inner wall, and ensure the conduit is capable of being coiled on reels and continuous lengths, transported, stored outdoors and subsequently uncoiled for installation without affecting its properties or performance. Include multi-duct conduit organizers at all points where the multi-duct conduit enters and exits into a junction, pull box, splice vault, or similar structure. Provide conduit spacers that are appropriately sized relative to the ducts.

7.4.3 HDPE Innerduct

Provide a factory lubricated, industry sized 1.5" or 2" inside diameter as listed in the plans, low friction, coilable, conduit constructed of virgin HDPE innerduct. Said innerduct shall conform to ASTM D – 2239 and meet the following minimum requirements: Smooth wall SDR – 11, nominal outer diameter of 1.592 inches, minimum inner diameter 1.360 inches and a minimum wall thickness of 0.106 inches. Provide conduit with a smooth outer wall and ridged inner wall and ensure the conduit is capable of being coiled on reels in continuous lengths, transported, stored outdoors subsequently uncoiled for installation without affecting its properties or performance. Innerduct shall be furnished in the following factory extruded colors: orange, white, black and yellow as specified. Red shall be reserved for electric.

Provide mechanical duct plugs that provide a watertight barrier when installed in an unused conduit or outer duct conduit. Provide duct plugs sized in accordance with the conduit furnished. Provide duct plugs that are removable. All conduit shall come with factory installed duct plugs to keep out dust, dirt, and water.

Provide mechanical sealing devices that provide a watertight barrier between the conduit and communications cable. Provide mechanical sealing devices sized in accordance with conduit furnished and with appropriately sized holes for the communications cable. Provide mechanical sealing devices that are removable.

7.4.4 Secondary Underground Conduit

Furnish and install HDPE or PVC conduit sized per plans for additional pipe in common trench. Install the proper size and quantity of conduits to be used in accordance with the minimum conduit size and quantity requirements of the NEC and as approved by the County.

7.4.5 Above Ground Conduit

Furnish and install conduit for above ground use (a riser assembly on a utility service pole for the purpose of bringing power from above ground to underground conduit/duct, or bridge mounted or other above ground structure) consisting of galvanized rigid steel (GRS), aluminum, or Schedule 80 PVC conduit in accordance with ASTM D 1785, as approved by the County.

Furnish and install Schedule 80 PVC conduit, aluminum or Rigid Metal Conduit (RMC) for bridge crossings, attached to the bridge structures, under the parapet, wherever feasible and applicable. All rigid steel conduit material utilized shall be compliant with UL-6, ANSI C–80.1 and to Article 346 of the NEC. All aluminum conduits shall be aluminum 6063 aluminum alloy, T – 1 Temper, ANCI C80.5, and NEC 250.118 (2). All required connectors, adapters, fittings, conduit straps or "U" guard clamps and incidentals required and necessary for the above ground installations shall be galvanized and provided to construct a complete conduit/duct system.

No reducing couplings or reduction in the inside diameter of conduit shall be permitted. No intermediate metallic conduit (IMC) or thin – wall type electrical conduit shall be permitted for outdoor use.

Furnish and install galvanized metal conduit grounding bushing, or aluminum metal conduit grounding bushing on the terminating ends of all GRS/aluminum conduit runs. The bushings shall have an insert made of plastic and or other suitable material to protect wiring installed in the conduit. The bushing shall have a compression-type grounding lug for bonding the conduit to the ground rod and pull box. Do not field drill ceilings bushings.

7.4.6 Conduit Placement – General

Place conduit (location and depth) as required by the FDOT Utility Accommodation Manual, the plans, or as specified by the County. If the required steps cannot be accomplished due to soil conditions, obstructions, etc., additional mechanical protection may be required at the discretion and approval of the County.

For underground conduit/duct requiring additional mechanical protection (i.e., boring under railroads, shallow boring depth, proximity to foreign utilities, etc.), furnish and install black steel pipe (BSP) as an outer sleeve/pacing, or other materials as required by the permitting agency and/or approved by the County.

After the installation of the inner-ducts and upon completion of the tamping and backfill process, perform a mandrel test on each individual duct to ensure that no duct has been damaged. Provide a nonmetallic mandrel having a diameter of approximately 1 inch, for use in 1.25 inch innerduct. If damage has occurred, replace the entire length of the duct.

Test HDPE conduit for continuity and proper installation using a pressurization process; plug each innerduct and pressurize it to achieve a minimum pressure of 100 PSI for a minimum of 2 minutes.

No roadway pavement cuts will be allowed unless approved by the County. Conduit entrances into base-mounted field cabinets through the sides, back or top of the cabinet, are not permitted. All conduit attachments to rigid structures shall require the shop drawing/plan detail showing the attachment method for review.

Conduits terminating base mounted cabinet foundations shall extend a minimum of 2" above the foundation. All bends shall be 90° sweep, suitable for fiber optic cable, free from kinks, and of such easy curvature to permit the drawling in of cables without damage to insulation.

All new base mounted field cabinet foundations shall have installed at least two spare, empty 2" conduits, terminating a pull box.

Any metal conduit utilized shall be grounded and bonded in accordance with the NEC. All installation and construction work on all facilities shall be in compliance with the NESC.

7.4.7 Conduit Placement – Multi-duct Installation in Outer Duct

Simultaneously, install the individual colored innerducts in the outer duct. Install the multi-duct conduits using an approved cable pulling lubricant.

Use a dynamometer (clutch device) so as not to exceed the maximum allowable pulling tension. Do not use a motorized vehicle to generate pulling forces.

Keep tension on the ducts and the pulling line at the start of each pull. Do not release the tension if the pulling operation is halted. Restart the pulling operation by gradually increasing the tension until the multi-ducts are in motion. Once the multi-duct system is installed in the outer duct, install the duct organizers at the point where the multi-duct system enters or exits the junction box, pull box, splice vault, or other similar structure, or a cabinet.

Extend the ends of the multi-duct conduit such that upon completion of the installation, the ducts will extend a minimum of 2 inches above concrete services and 4 inches above crushed stone bases.

7.4.8 Conduit Placement – Splicing of the Conduit

Splice or join sections of conduit(s) using the manufacturer's recommended splice kits. Upon approval, a pull box may be installed at locations where splicing the coupling of the conduit is necessary due to problems encountered with the installation. Use of mechanical couplings may be approved by the County on a project basis depending upon project requirements.

7.4.9 Conduit Placement – Duct Plugs and Mechanical Ceiling Devices

Following the installation of conduit where the communications cable is not immediately installed, use a duct plug to seal the ends of the conduit. Secure the pull line to the duct plug in such a manner that it will not interfere with installation of the duct plug and provide a watertight seal.

7.4.10 List of Items for OSP Conduit – Underground

The items and services listed below are not an all-inclusive list. Furnish and install the following items as required:

Conduit – 2" placed at 24", machine trenched, per foot.

Conduit – 2" placed at 36", machine trenched, per foot.

Conduit – 2" placed at 24", hand trenched, per foot.

Conduit – 2" placed 3", hand trenched, per foot.

Conduit – 2" extra pipe, per foot.

Placement – 1.25", innerduct, corrugated, colored, per foot.

Placement – 4W 1.25", HDPE colored, per foot.

MaxCell Innerduct – placement – 3 cell for 2" and larger conduits.

Include preinstalled color-coded pull tapes for identification, pre-lubricated.

Placement – cable direct bury, plow, 30" placement, per foot.

Placement – 2" HDPE, directional bore, per foot.

Placement – 2" HDPE, directional bore, special conditions, per foot.

Placement – 8" HDPE, directional or, underwater way <10001f, per foot.

Placement – 2" RGS per foot.

Placement – 4" RGS per foot.

Placement – 2" fiberglass, bridge mount, per foot.

Placement – 4" fiberglass, bridge mount, per foot.

Detectable Tracer Wire, per foot.

Furnish and install a 14 GA tracer wire for placement in conduit.

Detection – Detectable Marking Tape, per foot.

Detection – jet line, per foot.

ROW detection – ROW delineator marker post, orange, 6 foot, per each.

Cable Route Markers

Furnish and install delineators that are tubular and designed and constructed of Type III HDPE material. Provide delineator assemblies that are ultraviolet stabilized, to help prevent their components from color fading, warping, absorbing water, and deteriorating with prolonged exposure to the elements. Provide delineator posts that have a cap that is orange in color.

The delineator assemblies shall include the descriptive information "PBC-ISS FIBER OPTIC CABLING, CALL BEFORE DIGGING, 561-355-HELP" printed black on orange reflective background material that will not fade or deteriorate over time. The printed message shall be partially visible from all directions approaching the assembly.

7.5 FIBER OPTIC CABLING AND RELATED ITEMS

7.5.1 General Requirements

Furnish, install, splice, and test all fiber optic cable, fiber optic assemblies, patch cords, and all passive network infrastructures including, but is not limited to, splice trays and closures, patch panels, fan-outs, terminations, and fusion splices.

Furnish all tools, equipment, materials, supplies, and manufactured articles, and perform all operations and equipment integration necessary to provide a complete, fully operational passive fiber optic infrastructure.

The necessary equipment shall be the responsibility of the successful bidder. Provide all labor and equipment necessary to move inventory and to transport it to the installation location. Install all items in accordance with the manufacturer's instructions or as directed by the County.

7.5.2 Fiber Optic Cable Specifications

The following table presents the optical requirements of the single mode and multimode fiber:

Parameters	Single Mode	Multi
Type	Step Index	Graded Index
Core Diameter	8.3 μm (Nominal)	50 μm
Cladding Diameter	125 μm	125 μm
Core to Cladding Offset	$\leq 0.8 \mu\text{m}$	$\leq 1.5 \mu\text{m}$
Coating Diameter (OSP)	245 μm	245 μm +/- 5 μm
Coating Diameter (IP)	900 μm $\pm 15 \mu\text{m}$	
Cladding – circularity	$\leq 0.7\%$	
Proof Tensile Test	100 kpsi (0.7 GN/m ²)	
Attenuation		
@850 nm (MM)	N/A	$\leq 3.5 \text{ dB/km}$
@1300 nm (MM)	N/A	$\leq 1.0 \text{ dB/km}$
@1310 nm (SM)	$\leq 0.4 \text{ dB/km}$	N/A
@1550 nm (SM)	$\leq 0.3 \text{ dB/km}$	N/A
Bandwidth		
@850 nm (MM)	N/A	200
@1300 nm (MM)	N/A	1000
Chromatic Dispersion		
Zero Dispersion	1301.5/1321.5 nm	
Wavelength Zero		
Dispersion Slope	0.089 ps/nm ² - km	
Maximum Dispersion	3.3 ps/(nm*km) for 1285–1330 nm <18ps/(nm*km) for 1550 nm	
Cut – Off Wavelength	1260 nm	
Numerical Aperture		
(EIA – 455 – 47)	NA	0.275

All optical fibers shall be proof tested by the fiber manufacture at a minimum load of 100 kpsi. All optical fibers shall be 100% attenuation tested at the factory for compliance with performance specifications described herein. The attenuation data for each fiber shall be provided with each cable reel.

7.5.3 Fiber Optic Cable Outside Plant (OSP)

Provide outside plant cable (OSP) suitable for installation in an underground conduit environment including constant immersion in water for outdoor installations. The cable shall be provided and installed in continuous links. Fibers in the fiber optic cable shall be spliced and/or terminated as specified by the County Project Supervisor.

All optical glass shall be of the same manufacturer.

The cable shall be capable of withstanding a minimum–bending radius of ten (10) times its outer diameter during operation and twenty (20) times its outer diameter during installation, without changing the characteristics of the optical fibers.

All fibers are to be single mode unless specifically noted on plans by the County.

Unless specified otherwise, provide cable of water-blocked, loose tube construction with buffer tubes wrapped around a dielectric central strength member. All fiber(s) shall be contained within buffer tubes, and each buffer tube shall have an inside diameter much greater than the total diameter(s) of the fiber(s) it supports. The fiber optic cable shall have a reverse oscillation or planetary stranding structure.

The buffer tubes and all fibers shall be color coded in compliance with EIA/TIA – 598 "Color Coding of Fiber Optic Cables".

Jacket construction and configuration of the groups shall be such that they can easily be separated at splice points, permitting one set of fibers to be cut and spliced while the others remain continuous.

The jacket or sheath shall be marked with the manufacturer's name, date of manufacture, cable description, and sequential measurement markings at least every three (3) feet. PBC-ISS shall be marked on the jacket/sheath for agency identification.

Submit proposed cable designs for County approval prior to procurement and installation of cable plant if the cable is something other than what is normally used.

The cable shall have a water-block tape over the buffer tubes and throughout the remainder of the cable, to prevent entry of water.

Each fiber or group of fibers, shall be free-floating within the tubes such that all mechanically or environmentally induced stress placed upon the cable is decoupled from the fibers. The air within the buffer tubes shall be displaced with a gel to prevent entry by water and to facilitate free movement of the fiber(s) within.

The cable shall be capable of withstanding a pull tension of 2700 N (600 pounds) under load condition and 600 N (135 pounds) under static conditions and a crush resistance of 220 N/cm (length of cable), without changing the characteristics of the optical fibers.

The outer jacket shall be UV and fungus resistant.

7.5.4 Cables Labeling

Cables shall be distinguishable from each other by labeling. Cable tags similar to Blackbox 32785 shall be attached to the cable at each pull box, pole attachment, or entry into a termination facility. The tag shall be marked as "PBC-ISS, FIBER OPTICS, 561-355-4357". These tags will be provided by Network Services.

7.5.5 Riser Cables up to 24 Fibers (Multimode OFNP)

In cables with more than one (1) fiber, the fibers shall be stranded around a dielectric central member and surrounded by layered aramid yarns. The aramid yarns shall serve as the tensile strength member of the cable. A ripcord may be applied between the aramid yarns and the outer jacket to facilitate jacket removal. The outer jacket shall be extruded over the aramid yarns for physical and environmental protection.

7.5.6 Riser Cables with More than 24 Fibers (Multimode OFNP)

The buffered fibers shall be grouped in twelve (12) fiber subunits. In each subunit, the individual fibers shall be stranded around a dielectric central member and surrounded by layered aramid yarns. A ripcord shall be incorporated in the subunit design to facilitate access to the individual fibers. The subunit jacket shall be extruded over the aramid yarns for additional physical and environmental protection. The subunits shall be stranded around a dielectric central member. A ripcord shall be inserted beneath the outer jacket to facilitate jacket removal. The outer jacket shall be extruded around the units for physical and environmental protection.

7.5.7 Non-Plenum Applications

The storage temperature range for the cable on the original shipping reel shall be -400°C to +700°C. The installation/operating temperature range for riser cables shall be -200°C to +700°C. Testing shall be in accordance with FOTP-3.

7.5.8 Plenum Cables up to 24 Fibers (Multimode OFNP)

The fibers may be stranded around a dielectric central member and surrounded by layered aramid yarns. The aramid yarns shall serve as the tensile strength member of the cable. A ripcord shall be applied between the aramid yarns and the outer jacket to facilitate jacket removal. The outer jacket shall be extruded over the aramid yarns for physical and environmental protection.

7.5.9 Plenum Applications

The storage temperature range for the cable on the original shipping reel shall be -400°C to +700°C. The installation/operating temperature range for plenum cables shall be -200°C to +700°C. Testing shall be in accordance with FOTP-3.

7.5.10 List of Items for Fiber Optics Cabling

The items and services listed below are **not** an all-inclusive list. Furnish, install, splice, and test all fiber optic cable, fiber optic assemblies, patch cords, and all passive network infrastructures including, but is not limited to, splice trays and closures, patch panels, fan-outs, terminations, and fusion splices. The fiber-optic cables listed below shall conform to the specifications in section 7.5.2.

- 12 fiber, SM, loose – tube construction (aerial placement or underground placement)
- 24 fiber, SM, loose – tube construction (aerial placement or underground placement)
- 48 fiber, SM, loose – tube construction (aerial placement or underground placement)
- 72 fiber, SM, loose – tube construction (aerial placement or underground placement)
- 96 fiber, SM, loose – tube construction (aerial placement or underground placement)
- 144 fiber, SM, loose – tube construction (aerial placement or underground placement)
- 24 fiber, SM, all dielectric self-supporting construction (aerial placement)
- 48 fiber, SM, all dielectric self-supporting construction (aerial placement)
- 96 fiber, SM, all dielectric self-supporting construction (aerial placement)
- 144 fiber, SM, all dielectric self-supporting construction (aerial placement)
- 24 fiber, SM, riser rated construction
- 48 fiber, SM, riser rated construction
- 96 fiber, SM, riser rated construction
- 12 fiber, SM, plenum construction
- 24 fiber, SM, plenum construction
- 48 fiber, SM, plenum construction
- 96 fiber, SM, plenum construction
- 12 fiber, MM, plenum rated, tight buffer
- 24 fiber, MM, plenum rated, tight buffer
- 12 fiber, MM, plenum rated construction
- 24 fiber, MM, plenum rated construction

7.6 Cable Pulling

Before starting any construction, all of the successful bidder's personnel (including subcontractors) shall be thoroughly familiar with and shall comply with Occupational Safety and Hazard Act (OSHA) regulations, FDOT safety practices and policies, and the Florida State "One-Call" System requirements.

Perform the cable pulling operation in such a manner that the minimum-bending radius of the cable shall not be exceeded in the unreeling and pulling operations. Use entry guide chutes to guide the cable into the pull-box conduit ports. Utilize lubricating compound to minimize cable-to-conduit friction. Lubricating compound shall be a water-based compound specifically produced for fiber optic cable lubrication. Lubricants such as dish soap and other substitutes are not allowed.

Corner rollers (wheels), if used, shall not have radii less than the minimum installation bend radius of the cable. A series array of smaller wheels can be used for accomplishing the bend, if the cable manufacturer specifically approves the array. Continuously measure the cable pulling tension; the pulling process shall not be allowed to exceed the maximum tension specified by the manufacturer of the cable. Fuse links and breaks shall be used to insure during the pulling process the cable will not be subjected to pulling stresses exceeding exceed 2700 N (600 lbs.).

When simultaneously pulling fiber optic cable with other cables, separate grooved rollers shall be used for each cable.

The successful bidder is permitted to use air-assisted blowing for the fiber optic cable installation within the conduit. Air-assisted blowing may consist of either the high air speed blowing (HASB) method or the piston method.

While using the HASB method, the volume of air passing through the conduit shall not exceed 600 cfm or the air pressure stipulated by the conduit manufacturer. In using the piston method, the volume of air passing through the conduit shall not exceed 300 cfm or the conduit manufacturer's recommended air volume, whichever is more restrictive.

The successful bidder shall insure that the fiber optic cable procured for this project, is flexible and approved by the cable manufacturer for air-assisted blowing installation methods. The successful bidder shall also be responsible for ensuring that the type of conduit procured for this project, does not have physical characteristics that would disrupt the flow of air needed for proper cable installation (e.g. circumferential ribs or corrugations).

The conduit shall be able to hold up to 100 psi of air without leaks. Conduit splices are critical and shall not reduce the interior diameter of the conduit. Aluminum couplers, suitable for air-assisted blowing of fiber optic cable, shall be used for both HASB and piston method cable installations.

A factory furnished lubrication, especially engineered for blowing methods of cable installation, shall be used, and regular cable-pulling lubricants shall not be permitted for air-assisted blowing installation methods.

Fiber optic simplex duct plugs used with air-assisted blowing installations, shall require seals sized to the cable in order to prevent leakage from the pressure chamber around the entering cable.

General field procedures for air-assisted blowing installations of fiber optic cable shall be as follows:

- Ensure that the conduit system is properly installed with pressure-tight conduit splices. Test the conduit system prior to cable installation by sealing one end of the conduit and pressurizing the conduit using a sealed blowing machine. The conduit should not lose air pressure at any significant rate as determined by the County.
- If using the HASB method, cap the front end of the cable to prevent it from hanging up in the conduit. Use air seals that fit properly around the outside diameter of the cable being installed.
- Clean, dry, and establish the airtight integrity of the conduit, by blowing a hard mandrel through the conduit to establish that the conduit is not crushed. Blow a tight-fitting foam carrier through the conduit at high pressure. The foam carrier should travel through at approximately 100 fps in a clean conduit. If excess water or dirt comes from the conduit, repeat the process. At the County's discretion, dry the conduit with dry airflow prior to cable installation.
- For the HASB method, inject the recommended amount of lubricant, and spread it by blowing another foam carrier through. For the piston method, inject the majority of the lubricant in front of the missile with some lubricant placed behind it.
- Connect the blowing machine to the conduit. For HASB machines, hand feed approximately one-hundred (100) feet of cable into the duct prior to closing and sealing the cable and air chamber on the blowing machine. For piston machines, attach the piston to the cable and insert the piston into the duct. For both installation methods, follow the machine manufacturer's instructions for all operations.
- Check all pneumatic and hydraulic hook-ups prior to increasing the air pressure.
- Keep cable ends sealed at all times during installation, using an approved cable end cap. Do not use tape to seal the cable end. The cable end shall remain sealed until termination takes place.
- Install fiber optic cable such that the optical characteristics are not degraded in any manner. Provide adequately trained personnel for the installation of the cable and for the fusion splicing. Test all fiber links.
- Provide sufficient slack for proper termination in the cabinet communications compartment for all cables that are not immediately terminated.

Throughout the cable plant, pull and store excess cable slack at each pull box, splice box, hub, and each TMC or TOC. The following lengths of slack cable are minimums:

- | | |
|--------------------------|---------------------------------------|
| • Small Fiber Pull Box | 50 ft. |
| • Large Fiber Pull Box | 200 ft. |
| • Fiber Splice Box | 200 ft. |
| • Bridge Barrier Wall | 20 ft. |
| • Device Cabinet | 20 ft. |
| o Hub Building (Inside) | 100 ft. |
| o TMC (OSP Entrance) | 100 ft. Maximum |
| • Equipment/Control Room | 50 ft. Slack at FO Distribution Panel |

-OR- AS SPECIFIED BY THE COUNTY PROJECT SUPERVISOR

Provide proper storage of slack cable – both long term and short term. Do not leave slack cable lying free on the ground, bottom of a pull box, or floor of a Device Cabinet, Hub Building, or RTMC, except during the actual pulling process.

7.7 Optical Splicing and Termination Requirements

Utilize the fusion technique for all splices. Utilize fusion splicing equipment that has been cleaned, calibrated and specifically adjusted to the fiber and environmental conditions. Provide splice enclosures, organizers and incidentals, and cable and preparation tools and procedures, compatible with the cable type being delivered. Maximum allowable splice loss is .04db.

Each spliced fibers shall be packaged in a heat shrinkable splice protection sleeve with strength member. The protection sleeve shall cover the splice and have any bare fiber stripped of its coding.

The use of RTV or silicon is strictly prohibited.

7.7.1 Splice enclosures

Provide and install outdoor optical splice enclosures (3M 2178 or equivalent) capable of aerial, duct, or buried applications. The splice enclosure shall provide space enabling entry of fiber optic cable without exceeding the minimum bend radius of the cable. The splice enclosure shall be capable of through, branch, or mid-span type splice locations. Only one (1) cable per entry port shall be allowed. Furnish and install the splice closure with the correct number of entry ports as dictated by each fiber optic splice location.

The splice enclosure shall be designed to permit selective fiber splicing (looping of backbone cable in and out while only cutting the desired fibers). The splice enclosure shall allow splicing of all fibers in the cables being terminated. The enclosure shall be waterproof and re-enterable, and shall be designed to protect the buffer tubes in the splice trays.

The splice trays within the enclosure shall be capable of accommodating the required number of splices including storage and protection of slack fiber.

All pricing for fiber count splices as listed in Section 7.7.8, are to be inclusive of all necessary labor and materials needed to complete the job. This shall include, but is not limited to, labor, splice enclosures, trays, inserts, splice sleeves and all other hardware and consumables.

7.7.2 Interconnect centers

Furnish compact, modular interconnect centers (3M 8423 or equivalent) designed to mount (rack or wall) insight equipment cabinets. Design and size interconnect centers to accommodate all fibers entering equipment cabinets.

Provide splice trays that, protect, and organize optical fibers and that secure fibers inside the splice tray. Design and size splice trays that fit accordingly into a 19" rack or wall mount unit that accommodate all fibers entering the splice tray and that shall provide sufficient space to prevent micro-bending of optical fibers.

All terminated fiber shall be tested with an OTDR in the fashion described Section 7.2.5.

All fiber optic terminations of OSP fiber shall be done in the manner of fusion splicing on a factory polished pigtail. All pigtails, as well as port plates, shall utilize the ST standard unless otherwise called for. All pricing for the termination of the following counts of fiber shall to be inclusive of all labor and materials needed to complete the job. This shall include, but is not limited to, labor, enclosure, port plates, splice trays, inserts, splice sleeves and all other hardware and consumables.

7.7.3 Splice slack

A maintenance loop at each pull box or fiber optic splice box, shall be at least fifty (50) feet of cable (or as specified by the County Project Supervisor); this slack cable shall be coiled and neatly placed in the splice box. This shall allow for future splices in the event of a damaged splice. Additionally, every effort shall be made to maintain a minimum of ten (10) feet of cable from each cable's entering the enclosure which shall be prepared and installed within the enclosure.

7.7.4 Splice loss

Individual splice loss shall not exceed .04 dB loss.

7.7.5 Installation slack

For all fiber runs, approximately 10% slack will be evenly distributed along the path for future emergency repairs or relocations. Aerial locations shall utilize “snow shoes” and underground shall utilize pull boxes.

7.7.6 Optical termination requirements

ST fiber optic connectors are standard for use on each project and shall be utilized by function in the following manner or as specified by the County Project Supervisor. Utilize ST type fiber optic connectors at the field device level. ST connectors shall be comprised of a ceramic ferrule, nickel plated zinc, or composite connector body to accommodate a field bayonet connection.

Utilize factory pre-terminated assemblies that adhere to the applicable cable, cordage and fiber specifications of this document. All inside plant (IP) assemblies shall meet NEC jacketing requirements and shall have outer jacket coloration of yellow for single mode. No splices of any type are allowed within an assembly. Each assembly shall be individually packaged within a plastic bag, and that bag shall have the submitted manufacturers part number marked clearly on the outside of said bag. Each assembly shall be labeled as directed by the County.

7.7.7 Patch Cords and Pigtails

Utilize factory pre-terminated assemblies that adhere to the applicable cable, cordage and fiber specifications stated within this Technical Special Provision. All pigtails shall have a 3mm outer jacket unless otherwise noted. All pigtails shall use the same glass manufacturer and core diameter as the fiber it is being fusion spliced to. All IP assemblies shall meet NEC jacketing requirements for this project's application and shall have outer jacket coloration of yellow and aqua for multi-mode. The connector shall accommodate the fiber type and size associated with this project.

No splices of any type are allowed within an assembly. Each assembly shall be individually packaged within a plastic bag, with the submitted manufacturer's part number marked clearly on the outside. Each assembly shall be labeled as directed by the County.

Optical Termination Losses:

Connector Type	Installation	Max. Loss	Return Loss
ST/SC/LC Single Mode	Field	0.30dB	>.40dB
ST/SC/LC Single Mode	Factory	0.25dB	>.45dB

7.7.8 List of Items for Optical Splicing and Termination

The items and services listed below are **not** an all-inclusive list. Furnish, install, splice, and test all fiber optic cable, fiber optic assemblies, patch cords, and all passive network infrastructures including, but is not limited to, splice trays and closures, patch panels, fan-outs, terminations, and fusion splices. The fiber-optic cables listed below must conform to the specifications in section 7.5.2.

- 12 fiber, SM/MM, termination
- 24 fiber, SM/MM, termination
- 48 fiber, SM/MM, termination
- 72 fiber, SM/MM, termination
- 96 fiber, SM/MM, termination
- 144 fiber SM/MM, termination
- 12 fiber, SM/MM, splice
- 24 fiber, SM/MM, splice
- 48 fiber, SM/MM, splice
- 72 fiber, SM, splice
- 96 fiber, SM, splice
- 144 fiber, SM, splice
- 06 fiber, SM, buffer fan-out kit
- 12 fiber, SM, buffer fan-out kit
- FO Connector – ST type, MM, Unicam connector

- FO Connector – ST type, SM, Unicam connector
- FO Closure – re-entry kit, cable preparation, up to 144 fiber, aerial or underground installation
- FO Splice – OTDR test any wavelength, one direction, bare fiber
- FO Closure – splice tray, fusion heat shrink, 12 fiber, 12" size
- FO Closure – splice tray, fusion heat shrink, 24 fiber, 12" size
- FO Splice – fusion splice, heat shrink <0.04 db, OSP including detail as needed
- OSP Aerial – messenger table, ¼", per foot
- OSP Aerial – remove messenger cable, ¼", per foot
- OSP Aerial – pole attachment, loose tube, with J-Hook concrete pole
- OSP Aerial – pole attachment, loose tube, with J-Hook wood pole
- OSP Aerial – place pole riser, 2", RGS
- OSP Aerial – place pre-stressed concrete pole, 35 feet, utility
- OSP Aerial – place pre-stressed concrete pole, 45 feet, utility
- OSP Aerial – place pre-stressed concrete pole, 70 feet, utility
- OSP Aerial – place down guy anchor, 6 feet

7.8. PULL BOXES

7.8.1 General Requirements

Furnish and install polymer concrete/fiberglass reinforced polymer pull boxes for fiber optic splicing, storing fiber optic cable, cable pull boxes, and noninvasive magnetic detection system appliances. Pull boxes shall be lightweight, high strength, resistance to sunlight, resistant to petrochemicals, unaffected by freeze/thaw cycles, straight sided, flush fit with sidewalk or grass, no grounding required, and be capable of anchor inserts to allow for mounting rail attachment. All Fiber Optic Pull Boxes shall be of one piece box construction. Approved Fiber Optic Pull Boxes for use in a fiber optic environment are as follows:

Fiber Optic Pull Boxes shall be manufactured of a composite mixture of polymer and concrete, and reinforced by a heavy-weave fiberglass, creating a material compressive strength of no less than 110 psi. Each Fiber Optic Pull Box shall have a minimum design rating of 20,800 lbs., over a 10" x 10" area and be designed and tested to temperatures of -50° F.

Supply Fiber Optic Pull Boxes with a heavy-duty cover having a minimum elastic design load of 20,800 lbs. over a 10" x 10" area. All covers shall be produced to the AASHTO H-20 Cover Rating and meet a ASTM C857 load test of 20,800 lbs., performed as stated in AASHTO T280-87, "Standard Method Of Testing For Concrete Pipe, Section, Or Tile", Section 5, and as referenced in ASTM C497. Supply a minimum of two (2) hex head bolts with washers to secure the cover to the Fiber Optic Pull Box. Any cover that has a length of above 39", shall be split or divided into two (2) equal lengths. Fiber Optic Pull Box covers shall be embossed with "Fiber Optics" on the outside of the cover. Fiber Optic Pull Box covers shall have "J" hook slots (1"W x 4"L).

All pull box lids shall be embossed with "FIBER OPTICS".

7.8.2 Fiber Optic Pull Box Installation Process

Prepare the excavation a minimum 6"-12" deeper than the depth of the Fiber Optic Pull Box. Add a minimum 6" of crushed rock for drainage as required to bring the top of the box to finished grade level.

Place Fiber Optic Pull Box in hole with top at grade level.

While Fiber Optic Pull Box cover is in place, fill and compact soil to grade level. If grade level is raised later, the Fiber Optic Pull Box can be pulled up and bricked at the bottom with one (1) brick per side [a total of four (4)]. The cavity produced by this raising shall be eliminated by the addition of crushed rock.

7.8.3 Fiber Optic Pull Box Installation Conduit Entry

Install 22.5 to 45 degree conduit sweeps into the fiber optic pull box. Conduit ends shall align in the pull box so the fiber optic cable is subjected to no more than 75% of the maximum bending radius of the cable. Provide and install a reinforced concrete apron around the installed pull box.

7.8.4 Fiber Optic Splice Vault

The Fiber Optic Splice Vault shall be manhole type, concrete constructed, with a ¼" x 36" Diameter Traffic Steel Cover (Diamond Plate) with intermediate beam supports. It shall have the dimensions of 48" x 48" x 48", and shall be an open bottom manhole with a concrete collar placed at grade 12" around the entire perimeter of vault 4" thick with reinforced steel mesh.

7.8.5 List of Items for Fiber Optic Pull Boxes

The items and services listed below **are not** an all-inclusive list. Furnish and install the following items as required:

- Pull Box – Concrete, 4' x 4' x 4', with steel lid
- Pull Box – Composite construction, 24" x 36" x 24", with composite lid
- Pull Box – Composite construction, 24" x 36" x 24", traffic rated with composite traffic rated lid
- Pull Box – Composite construction, 17" x 30" x 12", with composite lid
- Pull Box – Composite construction, 17" x 30" x 12", traffic rated with composite traffic rated lid

7.9 OUTSIDE PLANT CABINETS

7.9.1 General Requirements

Install only Field Device Cabinets Type II (336S Special), Type III (332 Special), and Type VI (Hub Cabinet). This shall encompass all labor, equipment, materials required for pickup site delivery, validation, power hookup, and all required appurtenances for complete and operational cabinet. Cabinets shall provide an environmentally secure enclosure to house (ITS) Intelligent Traffic Systems field equipment, subsystems and systems, lighting and surge protection. The cabinet shall be designed for the explicit use of housing and protecting sensitive electronic equipment (Encoders, 10/100/1000 Ethernet switches, media converters, port/terminal service, fiber optics equipment, and other related components, etc.) within a controlled environment necessary for the proper operation of installed electronic equipment. The unit price for an installed Detector Cabinet shall consist of the furnishing and installation of a foundation, slab, electrical service and the transport and placement of the Detector Cabinet on said foundation and/or slab. The installed Detector Cabinet shall also include any ancillary equipment or incidental items, including mounting hardware, cabinet base, foundation, bridge pedestal base plate, and restoration of the surrounding ground to its original condition.

7.9.2 Field Device Cabinet Type II (336S Special)

Install Field Device Cabinet that provides an environmentally secure enclosure to house ITS field device equipment, subsystems and systems, lighting and surge protection. The cabinet shall be designed for the explicit use of housing and protecting sensitive electronic equipment (Encoders, 10/100/1000 Ethernet switches, media converters, port/terminal servers, fiber optics equipment, and other related components, etc.) within a controlled environment necessary for the proper operation of installed electronic equipment.

The Detector Cabinet shall meet or exceed the following minimum requirements:

- **Size:** Outside dimensions shall be approximately 46"H x 24"W x 24"D;
- **Lighting:** The cabinet shall include door activated 20W cool white fluorescent lights;
- **Electrical Outlets:** One duplex (GFI) receptacle shall be included with every cabinet;
- **Equipment Racks:** One 19" equipment rack, adjustable 4-post design with 5/8-inches - 5/8-inches - 1/2-inches spacing with holes tapped for #12-24 screws. A rack-mounted drawer shall be included with the rack;
- **Air Filtration:** The cabinet shall contain a filtered air intake vent featuring re-usable, washable type filters;
- **Power Distribution:** The 30A main breaker provided in the cabinet shall distribute power to rack mounted equipment, lighting and outlets;
- **Surge Protection:**
 1. Primary surge suppression shall consist of a wall or flush mounted unit with 12 AWG terminals with a maximum 80kA (8/20s), protecting lines L-N, L-G, L-L, and N-G. The unit shall meet the following environmental requirements: ambient temperatures of -40°F to 185°F (-40°C to 85°C working) and 95% RH (non-condensing). Dimensions shall be 4.5" x 2.9" x 2.3".

2. A nine-outlet (seven switched, two un-switched) rack mounted surge suppressor unit shall be installed. The maximum surge current shall be 84kA with a load current of 15A or 20A at a working voltage of 120V 50/60Hz.
 3. A 19" DIN Rail kit assembly shall be installed and have enough space for 32 modular surge suppressor devices (RJ11, RJ45, or BNC connector type) attached meeting the following criteria: ambient temperature of -40°F to 185°F (-20°C to 85°C working) and 95% RH (non-condensing) Dimensions shall be 5.04"H x .99"W x 2.25"D.
- **Common Grounding System:** A floor mounted 12-position ground bar shall be provided with the cabinet.
 - **Cabinet Construction:**
 1. The cabinet shall contain R-4 insulation to control the effect of environmental conditions.
 2. Cabinet shall be of 1/8", 5052 Aluminum construction with white powder coat finish to eliminate rusting.
 3. Doors shall have NEMA 3R rated with neoprene gasketing, for maximum equipment protection, and shall have heavy-duty 3-point hardware on all doors.
 4. All hinges shall be 1/8" aluminum with a stainless steel piano hinge, or continuous door length stainless steel hinges.

7.9.3 Field Device Cabinet Type III (332 Special)

Install Field Device Cabinet that provides an environmentally secure enclosure to house ITS field device equipment, subsystems and systems, lighting and surge protection. The cabinet shall be designed for the explicit use of housing and protecting sensitive electronic equipment (Encoders, 10/100/1000 Ethernet switches, media converters, port/terminal servers, fiber optics equipment, and other related components, etc.) within a controlled environment necessary for the proper operation of installed electronic equipment.

The Detector Cabinet shall meet or exceed the following minimum requirements:

- **Size:** Outside dimensions shall be approximately 66"H x 24"W x 30"D;
- **Lighting:** The cabinet shall include door activated 20W cool white fluorescent lights;
- **Electrical Outlets:** One duplex (GFI) receptacle shall be included with every cabinet;
- **Equipment Racks:** One 19" equipment rack, adjustable 4-post design, with 5/8-inches - 5/8 - inches - 1/2-inches spacing with holes tapped for #12-24 screws, a rack-mounted drawer shall be included with the rack;
- **Air Filtration:** The cabinet shall contain a filtered air intake vent featuring re-usable, washable type filters;
- **Power Distribution:** The 30A main breaker provided in the cabinet shall distribute power to rack mounted equipment, lighting, and outlets;
- **Surge Protection:**
 1. Primary surge suppression shall consist of a wall or flush mounted unit with 12 AWG terminals with a maximum 80kA (8/20's), protecting lines L-N, L-G, L-L, and N-G. The unit shall meet the following environmental requirements: ambient temperatures of -40°F to 185°F (-40°C to 85°C working) and 95% RH (non-condensing). Dimensions shall be 4.5" x 2.9" x 2.3".
 2. A nine-outlet (seven switched, two un-switched) rack mounted surge suppressor unit shall be installed. The maximum surge current shall be 84kA with a load current of 15A or 20A at a working voltage of 120V 50/60Hz.
 3. A 19" DIN Rail kit assembly shall be installed and have enough space for 32 modular surge suppressor devices (RJ11, RJ45, or BNC connector type) attached meeting the following criteria: ambient temperature of -40°F to 185°F (-20°C to 85°C working) and 95% RH (non-condensing) Dimensions shall be 5.04"H x .99"W x 2.25"D.
- **Common Grounding System:** A floor mounted, 12-position ground bar, is to be provided with the cabinet;

- **Cabinet Construction:**

1. The cabinet shall contain R-4 insulation to control the effect of environmental conditions.
2. Cabinet shall be of 1/8", 5052 Aluminum construction with white powder coat finish to eliminate rusting.
3. Doors shall have NEMA 3R rated with neoprene gasketing for maximum equipment protection and shall have heavy-duty 3-point hardware on all doors.
4. All hinges shall be 1/8" aluminum with a stainless steel piano hinge, or continuous door length stainless steel hinges.

7.9.4 Hub Cabinet Type IV (Model 336S Special)

Install cabinet that provides an environmentally secure enclosure to house ITS field device equipment, subsystems and systems, lighting and surge protection. The cabinet shall be designed for the explicit use of housing and protecting sensitive electronic equipment (Encoders, 10/100/1000 Ethernet switches, media converters, port/terminal servers, fiber optics equipment, and other related components, etc.) within a controlled environment necessary for the proper operation of installed electronic equipment.

The cabinet shall meet or exceed the following minimum requirements:

- **Size:** Outside dimensions shall be approximately 48"H x 24"W x 24"D;
- **Cabinet Configuration:** The cabinet is a single door cabinet with one (1) NEMA 4 rated internal cabinet mounted to the interior of the outer cabinet;
- **Lighting:** The cabinet shall include door activated 20W cool white fluorescent lights;
- **Electrical Outlets:** One (1) duplex (GFI) receptacle shall be included with every cabinet;
- **Equipment Racks:** One (1) 19" equipment rack, adjustable 4-post design, with 5/8-inches -5/8-inches -1/2-inches spacing with holes tapped for #12-24 screws, a rack-mounted drawer with tabletop shall be included with the rack. Cable management guides shall be included with the rack and shall be constructed of an 18-gauge steel base plate with hook and loop fasteners. Four (4), two front, two rear 19" horizontal cable management guides and four (4), two front, two rear vertical cable management guides that shall run the vertical length of the rack;
- **Air Handling/Filtration:** The cabinet shall contain two (2) thermostatically controlled fans, 100 cfm rated. The cabinet shall contain a filtered air intake vent featuring re-usable, washable type filters;
- **Power Distribution:** The cabinet shall contain one 480/120 Volt transformer (Dry Type, 10KVA). A 30A main breaker shall be provided in the cabinet and shall distribute power to equipment, lighting, and outlets. The transformer and main breaker shall be mounted inside the outer cabinet;
- **UPS:** The cabinet shall contain one managed uninterruptible power supply. The UPS shall be 19" rack mounted. The UPS shall be 120V input/120V output. Output power capacity shall be 1400VA/1050Watts. The unit shall have a serial interface port for management. The unit shall be no more than 3U high;
- **Surge Protection:** Primary surge suppression shall consist of a wall or flush mounted unit with 12 AWG terminals with a maximum 80kA (8/20's), protecting lines L-N, L-G, L-L, and N-G. The unit shall meet the following environmental requirements;
 1. Ambient temperatures of -40°F to 185°F (-40°C to 85°C working) and 95% RH (non-condensing). Dimensions shall be 4.5" x 2.9" x 2.3";
 2. A nine-outlet (seven switched, two un-switched) rack mounted surge suppressor unit shall be installed. The maximum surge current shall be 84kA with a load current of 15A or 20A at a working voltage of 120V 50/60Hz;
 3. A 19" DIN Rail kit assembly shall be installed and have enough space for 32 modular surge suppressor devices (RJ11, RJ45, or BNC connector type) attached, meeting the following criteria: ambient temperature of -40°F to 185°F (-20°C to 85°C working) and 95% RH (non-condensing). Dimensions shall be 5.04"H x .99"W x 2.25"D;
- **Common Grounding System:** A floor mounted 12-position ground bar is to be provided with the cabinet.

7.9.5 Outer Cabinet Construction

The cabinet shall contain R-4 insulation to control the effect of environmental conditions. Cabinet shall be of 1/8", 5052 Aluminum construction with white powder coat finish to eliminate rusting. Outer door shall have NEMA 3R rated with neoprene gasketing for maximum equipment protection and shall have heavy-duty 3-point hardware. All hinges shall be 1/8" aluminum with a stainless steel piano hinge, or continuous door length stainless steel hinges.

7.9.6 Inner Cabinet (NEMA 4) Construction

The cabinet shall be a NEMA 4 rated cabinet with approximate dimensions of 20"W x 24"H x 12"D. The cabinet shall be constructed of 16-gauge stainless steel or other non-corrosive material. The cabinet shall contain one 12-gauge mounting plate with 10-32 x 2" threaded hole pattern mounted to the rear of the cabinet. The cabinet shall contain one heat sink mounted to the outside rear of the inner cabinet tangent to the mounting plate.

7.9.7 Device Cabinet Base

Install Device Cabinet Base that provides an environmentally secure enclosure to house fiber optic splice closure, fiber optic drop cable slack, data cable slack, and power cable slack. The base shall be specifically fabricated to accommodate the detector cabinet as specified within this Section A268. Neoprene gasketing shall be supplied by the Device Cabinet Base vendor that shall be applied by the installation Contractor between the Base and the Detector Cabinet. The Device Cabinet Base shall meet or exceed the following minimum requirements:

- Outside dimensions shall be approximately 16"H x 40"W x 24"D or 16"H x 24"W x 24"D;
- Shall be fabricated from 1/8" aluminum;
- Shall have an epoxy powder coating;
- Shall have a front access panel with captive stainless steel screws;
- Shall have an open top and open bottom, each with a 2-inch lip for mounting and/or attachment of the Detector Cabinet;
- Shall have a conduit mounting plate of same size (width and depth) made of 1/4" Stainless Steel 316.
- All screws and hardware shall be stainless steel.

7.9.8 Base Plate

All bridge pedestals shall have the existing open cable raceways sealed. These raceways shall be sealed by way of 1/4" stainless steel plates, anchored over the raceway by way of epoxy anchor drilled into the pedestal at a minimum depth of 1 1/4". There shall be two sizes of base plates, 18" x 12" and 10" x 10". The successful bidder shall install the Engineer's System Manager supplied Base Plates where noted and/or depicted within the plan set.

7.9.9 Hub Cabinet Type VI (Master Hub Cabinet)

Install a Master Hub Cabinet that provides an environmentally cooled enclosure facility required for the sensitive network equipment to be furnished on this project. The cabinet shall be designed for the explicit use of housing sensitive electronic equipment (Gigabit Ethernet switches, 10/100 Ethernet switches, media converters, port/terminal servers, fiber optics equipment, and other related components, etc.) within a controlled atmosphere required for the proper operating conditions for installed equipment and shall be furnished by the System Manager.

The Master Hub cabinet shall meet or exceed the following minimum requirements:

- **Size:** Dimensions shall be approximately 104"H x 108"W x 77"D;
- **AC Unit/Cooling Unit:** The cabinet shall have an AC unit/cooling unit(s) with a minimum total cooling capacity of 20,000 BTUs. The AC unit/cooling unit(s) shall be designed specifically for outdoor electronic enclosures and shall be designed for a fully-gasketed, leak-proof installation in accordance with the NEMA 4/4X enclosure rating. Refrigerant shall be CFC-free;
- **Lighting:** The cabinet shall include a switch controlled fluorescent light fixture providing adequate work lighting throughout the cabinet;

- **Electrical Outlets:** Two (2) separate duplex (GFCI) wall electrical outlets for test/maintenance equipment shall be provided. Two (2) separate standard duplex outlets shall be supplied for equipment power;
- **Equipment Racks:** Two (2) 19" EIA equipment racks with two (2) vertical and four (4) horizontal cable management panels per rack, placed as specified within the plan set;
- **Ladder Racks:** Ladder rack cable management system as depicted within the plan set shall be provided;
- **Power Distribution:** The cabinet shall provide for power distribution to all installed equipment racks, lighting and the air conditioning unit shall be provided;
- **Lightning Protection System:** Provide for lightning protection for the overall, integrated structure, including each metallic (copper) conductor penetrating the cabinet;
- **Common Grounding System:** A cabinet grounding system shall be provided;
- **Cabinet Monitoring System:** A cabinet monitoring system shall be provided to continuously monitor and report local conditions (temperature, humidity, smoke, and door alarm).

7.9.10 Construction

Construct a flat, level, concrete base, meeting the requirements for Class 1, non-stressed concrete and shall be accepted according to Section 347 of the FDOT Standard Specifications, and the latest supplements. The minimum final grade shall be set at nominal eight inches above the surrounding grade to insure that water drains away from the cabinet. Restore surrounding surfaces to their original condition.

7.9.11 Method of Measurement

The Detector Cabinet Type II, Detector Cabinet III, and Detector Cabinet VI shall be measured for payment at each site as installed. Detector Cabinet IV and its corresponding base (A268-4.1) shall be paid as each is installed. The Detector Cabinet Base installed shall be an appurtenance of the Type IV Detector Cabinet. The unit price for each Master Hub cabinet, installed, shall include all labor, equipment, foundations, mounting hardware, and miscellaneous material necessary for a complete and acceptable installation. The Engineer's System Manager will supply the cabinet assemblies as specified in the contract.

7.9.12 List of Items for Outside Plant Cabinets

Communications Cabinet – 35 " x 24" x 22", with concrete base

Communications Cabinet – 51.25" x 20" x 18", with concrete base

Communications Cabinet – 37" x 20" x 17", with concrete base

Device Cabinet Type 332 - 66" x 24" x 30", with concrete base

BID RESPONSE
IFB #18-055/HS

**FIBER OPTIC ENGINEERING, DESIGN, MATERIAL,
SUPPLIES AND INSTALLATION, TERM CONTRACT**

SECTION A

ITEM	ITEM DESCRIPTION	ANNUAL ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL OFFER
	LABOR				
1.	Engineering Florida PE Services – Hourly Rate	5	HR	\$ _____	\$ _____
2.	BICSI RCDD – Hourly Rate	35	HR	\$ _____	\$ _____
3.	CADD Operator – Hourly Rate	15	HR	\$ _____	\$ _____
4.	Clerical Support Services – Hourly Rate	60	HR	\$ _____	\$ _____
5.	Commercial Cable – Electronics Technician – Hourly Rate	5	HR	\$ _____	\$ _____
6.	Commercial Cable Installer – Hourly Rate	350	HR	\$ _____	\$ _____
7.	Commercial Duct Installer – Hourly Rate	700	HR	\$ _____	\$ _____
8.	Tree Trimming – Hourly Rate	5	HR	\$ _____	\$ _____
9.	OSP ROW Strand Mapping	25	MILE	\$ _____	\$ _____
10.	OSP ROW Design and Permitting	20	MILE	\$ _____	\$ _____
11.	OSP GPS Survey	20	MILE	\$ _____	\$ _____
12.	OSP GIS Technician	20	MILE	\$ _____	\$ _____
TOTAL OFFER SECTION A (ITEMS #1 – #12)					\$ _____

All unit prices bid should be within two (2) decimal points, with the exception of LF. If bidder's pricing exceeds two (2) decimal points, Purchasing reserves the right to round up or down accordingly.

Continued...

FIRM NAME: _____

BID RESPONSE
IFB #18-055/HS

**FIBER OPTIC ENGINEERING, DESIGN, MATERIAL,
SUPPLIES AND INSTALLATION, TERM CONTRACT**

SECTION B

ITEM	ITEM DESCRIPTION	ANNUAL ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL OFFER
	OSP CONSTRUCTION – UNDERGROUND				
13.	Conduit – 2" placed at 24", machine trenched (Furnished and Installed)	25	LF	\$ _____	\$ _____
14.	Conduit – 2" placed at 36", machine trenched (Furnished and Installed)	1,000	LF	\$ _____	\$ _____
15.	Conduit – 2" placed at 24" hand trenched (Furnished and Installed)	25	LF	\$ _____	\$ _____
16.	Conduit – 2" placed at 36", hand trenched (Furnished and Installed)	7,000	LF	\$ _____	\$ _____
17.	Conduit – 2", extra pipe (Furnished and Installed)	100	LF	\$ _____	\$ _____
18.	Placement – 1 ¼", innerduct, corrugated, colored (Furnished and Installed)	100	LF	\$ _____	\$ _____
19.	Placement – 4W 1 ¼", HDPE colored (Furnished and Installed)	100	LF	\$ _____	\$ _____
20.	MaxCell placement – 3 cell for 2" and larger conduits (Furnished and Installed)	100	LF	\$ _____	\$ _____
21.	Placement – cable direct bury, plow, 30" placement (Furnished and Installed)	100	LF	\$ _____	\$ _____
22.	Placement – 2" HDPE, Directional Bore (Furnished and Installed)	5,000	LF	\$ _____	\$ _____
23.	Placement – 2" HDPE, Directional Bore, Special Conditions (Furnished and Installed)	50	LF	\$ _____	\$ _____
24.	Placement – 8" HDPE, Directional Bore, under waterway (Furnished and Installed)	50	LF	\$ _____	\$ _____

All unit prices bid should be within two (2) decimal points, with the exception of LF. If bidder's pricing exceeds two (2) decimal points, Purchasing reserves the right to round up or down accordingly.

Continued...

FIRM NAME: _____

BID RESPONSE
IFB #18-055/HS

**FIBER OPTIC ENGINEERING, DESIGN, MATERIAL,
SUPPLIES AND INSTALLATION, TERM CONTRACT**

ITEM	ITEM DESCRIPTION	ANNUAL ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL OFFER
25.	Placement – 2" RGS (Furnished and Installed)	25	LF	\$ _____	\$ _____
26.	Placement – 4" RGS (Furnished and Installed)	25	LF	\$ _____	\$ _____
27.	Placement – 2" Fiberglass, Bridge mount (Furnished and Installed)	25	LF	\$ _____	\$ _____
28.	Placement – 4" Fiberglass, Bridge mount (Furnished and Installed)	25	LF	\$ _____	\$ _____
29.	Detection – Detectable Tracer Wire (Furnished and Installed)	30,000	LF	\$ _____	\$ _____
30.	Detection – Detectable Marking Tape (Furnished and Installed)	100	LF	\$ _____	\$ _____
31.	Detection – Jet Line (Furnished and Installed)	7000	LF	\$ _____	\$ _____
32.	ROW Detection – ROW Delineator Marker Post, orange, 6' (Furnished and Installed)	10	EACH	\$ _____	\$ _____
33.	Cable Route Markers - Tubular, Type III HDPE	10	EACH	\$ _____	\$ _____

All unit prices bid should be within two (2) decimal points, with the exception of LF. If bidder's pricing exceeds two (2) decimal points, Purchasing reserves the right to round up or down accordingly.

Continued...

FIRM NAME: _____

BID RESPONSE
IFB #18-055/HS

**FIBER OPTIC ENGINEERING, DESIGN, MATERIAL,
SUPPLIES AND INSTALLATION, TERM CONTRACT**

ITEM	ITEM DESCRIPTION	ANNUAL ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL OFFER
	FIBER OPTIC CABLES				
34.	FO Cable – 12 fiber, Single-mode, Loose-Tube Construction, Aerial Placement (Furnished and Installed)	2,000	LF	\$ _____	\$ _____
35.	FO Cable – 12 fiber, Single-mode, Loose-Tube Construction, Underground Placement (Furnished and Installed)	5,000	LF	\$ _____	\$ _____
36.	FO Cable – 24 fiber, Single-mode, Loose-Tube Construction, Aerial Placement (Furnished and Installed)	10,000	LF	\$ _____	\$ _____
37.	FO Cable – 24 fiber, Single-mode, Loose-Tube Construction, Underground Placement (Furnished and Installed)	20,000	LF	\$ _____	\$ _____
38.	FO Cable – 48 fiber, Single-mode, Loose-Tube Construction, Aerial Placement (Furnished and Installed)	35,000	LF	\$ _____	\$ _____
39.	FO Cable - 48 fiber, Single-mode, Loose-Tube Construction, Underground Placement (Furnished and Installed)	20,000	LF	\$ _____	\$ _____
40.	FO Cable – 72 fiber, Single-mode, Loose-Tube Construction, Aerial Placement (Furnished and Installed)	500	LF	\$ _____	\$ _____
41.	FO Cable – 72 fiber, Single-mode, Loose-Tube Construction, Underground Placement (Furnished and Installed)	500	LF	\$ _____	\$ _____
42.	FO Cable – 96 fiber, Single-mode, Loose-Tube Construction, Aerial Placement (Furnished and Installed)	1,500	LF	\$ _____	\$ _____
43.	FO Cable – 96 fiber, Single-mode, Loose-Tube Construction, Underground Placement (Furnished and Installed)	1,500	LF	\$ _____	\$ _____
44.	FO Cable – 144 fiber, Single-mode, Loose-Tube Construction, Aerial Placement (Furnished and Installed)	500	LF	\$ _____	\$ _____

All unit prices bid should be within two (2) decimal points, with the exception of LF. If bidder's pricing exceeds two (2) decimal points, Purchasing reserves the right to round up or down accordingly.

Continued...

FIRM NAME: _____

BID RESPONSE
IFB #18-055/HS

**FIBER OPTIC ENGINEERING, DESIGN, MATERIAL,
SUPPLIES AND INSTALLATION, TERM CONTRACT**

ITEM	ITEM DESCRIPTION	ANNUAL ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL OFFER
45.	FO Cable – 144 fiber, Single-mode, Loose-Tube Construction, Underground Placement (Furnished and Installed)	500	LF	\$ _____	\$ _____
46.	FO Cable – 12 fiber, Multi-mode, Loose-Tube Construction, Aerial Placement (Furnished and Installed)	100	LF	\$ _____	\$ _____
47.	FO Cable – 12 fiber, Multi-mode, Loose-Tube Construction, Underground Placement (Furnished and Installed)	100	LF	\$ _____	\$ _____
48.	FO Cable – 24 fiber, Multi-mode, Loose-Tube Construction, Aerial Placement (Furnished and Installed)	500	LF	\$ _____	\$ _____
49.	FO Cable – 24 fiber, Multi-mode, Loose-Tube Construction, Underground Placement (Furnished and Installed)	500	LF	\$ _____	\$ _____
50.	FO Cable – 24 fiber, Single-mode, All Dielectric Self Supporting Construction, Aerial Placement (Furnished and Installed)	50	LF	\$ _____	\$ _____
51.	FO Cable – 48 fiber, Single-mode, All Dielectric Self Supporting Construction, Aerial Placement (Furnished and Installed)	50	LF	\$ _____	\$ _____
52.	FO Cable – 96 fiber, Single-mode, All Dielectric Self Supporting Construction, Aerial Placement (Furnished and Installed)	50	LF	\$ _____	\$ _____
53.	FO Cable – 144 fiber, Single-mode, All Dielectric Self Supporting Construction, Aerial Placement (Furnished and Installed)	50	LF	\$ _____	\$ _____

All unit prices bid should be within two (2) decimal points, with the exception of LF. If bidder's pricing exceeds two (2) decimal points, Purchasing reserves the right to round up or down accordingly.

Continued...

FIRM NAME: _____

BID RESPONSE
IFB #18-055/HS

**FIBER OPTIC ENGINEERING, DESIGN, MATERIAL,
SUPPLIES AND INSTALLATION, TERM CONTRACT**

ITEM	ITEM DESCRIPTION	ANNUAL ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL OFFER
54.	FO Cable – 24 fiber, Single-mode, Riser Rated Construction (Furnished and Installed)	50	LF	\$ _____	\$ _____
55.	FO Cable – 48 fiber, Single-mode, Riser Rated Construction (Furnished and Installed)	50	LF	\$ _____	\$ _____
56.	FO Cable – 96 fiber, Single-mode, Riser Rated Construction (Furnished and Installed)	50	LF	\$ _____	\$ _____
57.	FO Cable – 12 fiber, Multi-mode, Riser Rated Construction (Furnished and Installed)	10	LF	\$ _____	\$ _____
58.	FO Cable – 24 fiber, Multi-mode, Riser Rated Construction (Furnished and Installed)	10	LF	\$ _____	\$ _____
59.	FO Cable – 12 fiber, Single-mode, Plenum Construction (Furnished and Installed)	50	LF	\$ _____	\$ _____
60.	FO Cable – 24 fiber, Single-mode, Plenum Construction (Furnished and Installed)	50	LF	\$ _____	\$ _____
61.	FO Cable – 48 fiber, Single-mode, Plenum Construction (Furnished and Installed)	50	LF	\$ _____	\$ _____
62.	FO Cable – 96 fiber, Single-mode, Plenum Construction (Furnished and Installed)	50	LF	\$ _____	\$ _____
63.	FO Cable – 12 fiber, Multi-mode, Plenum Rated Construction, Tight Buffer (Furnished and Installed)	50	LF	\$ _____	\$ _____
64.	FO Cable – 24 fiber, Multi-mode, Plenum Rated Construction, Tight Buffer (Furnished and Installed)	50	LF	\$ _____	\$ _____
65.	FO Cable – 24 count Hybrid Fiber, 12 Multi-mode Fiber, 12 Single-mode Fiber, Plenum Rated Construction (Furnished and Installed)	50	LF	\$ _____	\$ _____
66.	FO Cable – 48 count Hybrid Fiber, 24 Multi-mode Fiber, 24 Single-mode Fiber, Plenum Rated Construction (Furnished and Installed)	50	LF	\$ _____	\$ _____

All unit prices bid should be within two (2) decimal points, with the exception of LF. If bidder's pricing exceeds two (2) decimal points, Purchasing reserves the right to round up or down accordingly.

Continued...

FIRM NAME: _____

BID RESPONSE
IFB #18-055/HS

**FIBER OPTIC ENGINEERING, DESIGN, MATERIAL,
SUPPLIES AND INSTALLATION, TERM CONTRACT**

ITEM	ITEM DESCRIPTION	ANNUAL ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL OFFER
	OPTICAL SPLICING & TERMINATION				
67.	FO Cable – 12 fiber, Single-mode or Multi-mode, Termination, Wall / Rack Cabinet, trays, pigtails, splices, tests (Furnished and Installed)	15	EACH	\$ _____	\$ _____
68.	FO Cable – 24 fiber, Single-mode or Multi-mode, Termination, Wall / Rack Cabinet, trays, pigtails, splices, tests (Furnished and Installed)	10	EACH	\$ _____	\$ _____
69.	FO Cable – 48 fiber, Single-mode or Multi-mode, Termination, Wall / Rack Cabinet, trays, pigtails, splices, tests (Furnished and Installed)	10	EACH	\$ _____	\$ _____
70.	FO Cable – 72 fiber, Single-mode or Multi-mode, Termination, Wall / Rack Cabinet, trays, pigtails, splices, tests (Furnished and Installed)	1	EACH	\$ _____	\$ _____
71.	FO Cable – 96 fiber, Single-mode or Multi-mode, Termination, Wall / Rack Cabinet, trays, pigtails, splices, tests (Furnished and Installed)	3	EACH	\$ _____	\$ _____
72.	FO Cable –144 fiber, Single-mode or Multi-mode, Termination, Wall / Rack Cabinet, trays, pigtails, splices, tests (Furnished and Installed)	1	EACH	\$ _____	\$ _____
73.	FO Cable – 06 fiber, Single-mode, Buffer fan-out kit (Furnished and Installed)	1	EACH	\$ _____	\$ _____
74.	FO Cable – 12 fiber, Single-mode, Buffer fan-out kit (Furnished and Installed)	1	EACH	\$ _____	\$ _____
75.	FO Connector – ST type, Multi-mode, Unicam connector (Furnished and Installed)	1	EACH	\$ _____	\$ _____
76.	FO Connector – ST type, Single-mode, Unicam connector (Furnished and Installed)	1	EACH	\$ _____	\$ _____

All unit prices bid should be within two (2) decimal points, with the exception of LF. If bidder's pricing exceeds two (2) decimal points, Purchasing reserves the right to round up or down accordingly.

Continued...

FIRM NAME: _____

BID RESONSE
IFB #18-055/HS

**FIBER OPTIC ENGINEERING, DESIGN, MATERIAL,
SUPPLIES AND INSTALLATION, TERM CONTRACT**

ITEM	ITEM DESCRIPTION	ANNUAL ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL OFFER
77.	FO Closure – Splice Closure, 12 fiber, Aerial or UG installation, trays, splices, tests (Furnished and Installed)	10	EACH	\$ _____	\$ _____
78.	FO Closure – Splice Closure, 24 fiber, Aerial or UG installation, trays, splices, tests (Furnished and Installed)	10	EACH	\$ _____	\$ _____
79.	FO Closure – Splice Closure, 48 fiber, Aerial or UG installation, trays, splices, tests (Furnished and Installed)	10	EACH	\$ _____	\$ _____
80.	FO Closure – Splice Closure, 72 fiber, Aerial or UG installation, trays, splices, tests (Furnished and Installed)	1	EACH	\$ _____	\$ _____
81.	FO Closure – Splice Closure, 96 fiber, Aerial or UG installation, trays, splices, tests (Furnished and Installed)	1	EACH	\$ _____	\$ _____
82.	FO Closure – Splice Closure, 96 fiber, Aerial or UG installation, trays, splices, tests (Furnished and Installed)	144	EACH	\$ _____	\$ _____
83.	FO Splice – OTDR Test any wavelength, one direction, bare fiber	700	EACH	\$ _____	\$ _____
84.	FO Closure – Splice Tray, Fusion Heatshrink, 12 fiber, 12" size (Furnished and Installed)	1	EACH	\$ _____	\$ _____
85.	FO Closure – Splice Tray, Fusion Heatshrink, 24 fiber, 12" size (Furnished and Installed)	1	EACH	\$ _____	\$ _____
86.	FO Splice – Fusion Splice, Heat Shrink < 0.04 db, OSP, including pigtail as needed (Furnished and Installed)	100	EACH	\$ _____	\$ _____
87.	OSP Aerial – Messenger Cable, ¼"	10,000	LF	\$ _____	\$ _____
88.	OSP Aerial – Remove Messenger Cable, ¼"	100	LF	\$ _____	\$ _____

All unit prices bid should be within two (2) decimal points, with the exception of LF. If bidder's pricing exceeds two (2) decimal points, Purchasing reserves the right to round up or down accordingly.

Continued...

FIRM NAME: _____

BID RESPONSE
IFB #18-055/HS

**FIBER OPTIC ENGINEERING, DESIGN, MATERIAL,
SUPPLIES AND INSTALLATION, TERM CONTRACT**

ITEM	ITEM DESCRIPTION	ANNUAL ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL OFFER
89.	OSP Aerial – Pole Attachment, Loose Tube, with J-Hook Concrete Pole (Furnished and Installed)	10	EACH	\$ _____	\$ _____
90.	OSP Aerial – Pole Attachment, Loose Tube, with J-Hook Wood Pole (Furnished and Installed)	10	EACH	\$ _____	\$ _____
91.	OSP Aerial – Place Pole Riser, 2", RGS (Furnished and Installed)	500	LF	\$ _____	\$ _____
92.	OSP Aerial – Place Pre-Stressed Concrete , 35 ft., Utility (Furnished and Installed)	1	EACH	\$ _____	\$ _____
93.	OSP Aerial – Place Pre-Stressed Concrete, 45 ft., Utility (Furnished and Installed)	1	EACH	\$ _____	\$ _____
94.	OSP Aerial – Place Pre-Stressed Concrete, 70 ft., Utility (Furnished and Installed)	1	EACH	\$ _____	\$ _____
95.	OSP Aerial – Place Down Guy Anchor, 6' (Furnished and Installed)	1	EACH	\$ _____	\$ _____

All unit prices bid should be within two (2) decimal points, with the exception of LF. If bidder's pricing exceeds two (2) decimal points, Purchasing reserves the right to round up or down accordingly.

Continued...

FIRM NAME: _____

BID RESPONSE
IFB #18-055/HS

**FIBER OPTIC ENGINEERING, DESIGN, MATERIAL,
SUPPLIES AND INSTALLATION, TERM CONTRACT**

ITEM	ITEM DESCRIPTION	ANNUAL ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL OFFER
	PULL BOXES				
96.	Pull Box – Concrete, 4' x 4' x 4', with Steel Lid (Furnished and Installed)	1	EACH	\$ _____	\$ _____
97.	Pull Box – Composite construction, 24" x 36" x 24", with Composite Lid (Furnished and Installed)	5	EACH	\$ _____	\$ _____
98.	Pull Box – Composite construction, 24" x 36" x 24", Traffic Rated, with Composite Traffic Rated Lid (Furnished and Installed)	10	EACH	\$ _____	\$ _____
99.	Pull Box – Composite construction, 17" x 30" x 12", with Composite Lid (Furnished and Installed)	25	EACH	\$ _____	\$ _____
100.	Pull Box – Composite construction, 17" x 30" x 12", Traffic Rated, with Composite Traffic Rated Lid (Furnished and Installed)	10	EACH	\$ _____	\$ _____
101.	Pull Box Apron – for a 24" x 36" pull box 12" wide by 6" deep (Furnished and installed)	5	EACH	\$ _____	\$ _____
	OUTSIDE PLANT CABINET'S				
102.	Communications Cabinet – 35" x 24" x 22", with Concrete Base (Furnished and Installed)	1	EACH	\$ _____	\$ _____
103.	Communications Cabinet – 51.25" x 20" x 18", with Concrete Base (Furnished and Installed)	4	EACH	\$ _____	\$ _____

All unit prices bid should be within two (2) decimal points, with the exception of LF. If bidder's pricing exceeds two (2) decimal points, Purchasing reserves the right to round up or down accordingly.

Continued...

FIRM NAME: _____

BID RESPONSE
IFB #18-055/HS

**FIBER OPTIC ENGINEERING, DESIGN, MATERIAL,
SUPPLIES AND INSTALLATION, TERM CONTRACT**

ITEM	ITEM DESCRIPTION	ANNUAL ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL OFFER
	OUTSIDE PLANT CABINET'S				
104.	Communications Cabinet – 37" x 20" x 17", with Concrete Base (Furnished and Installed)	1	EACH	\$ _____	\$ _____
105.	Device Cabinet Type 332 (66"x 24" x 30") (Furnished and Installed)	2	EACH	\$ _____	\$ _____
TOTAL OFFER SECTION B (ITEMS #13 - #105)					\$ _____

All unit prices bid should be within two (2) decimal points, with the exception of LF. If bidder's pricing exceeds two (2) decimal points, Purchasing reserves the right to round up or down accordingly.

Acknowledge Pre-bid Conference was made, per Term #9? YES/INITIAL _____

Acknowledge Qualification of Bidders information is included, per Term #10? YES/INITIAL _____

Acknowledge Criminal History Records Check requirement, per Term #11? YES/INITIAL _____

Acknowledge Insurance requirements, per Term #22? YES/INITIAL _____

*** PLEASE AFFIX SIGNATURE WHERE INDICATED
(FAILURE TO DO SO SHALL RESULT IN THE REJECTION OF YOUR BID)**

By signature on this document, bidder acknowledges and agrees that its offer includes and accepts all terms, conditions, and specifications of the County's bid solicitation as originally published, without exception, change or alteration of any kind, except as may have been published by the County in official amendments prior to this date of submittal.

Per General Term and Condition #7, if bidder is a Joint Venture for the goods/services described herein, bidder shall, upon request of Palm Beach County, provide a copy of the Joint Venture Agreement signed by all parties.

FIRM NAME: (Enter the entire legal name of the bidding entity)		DATE:
* SIGNATURE: _____	PRINT NAME:	
	PRINT TITLE:	
ADDRESS: _____		
CITY / STATE: _____		ZIP CODE: _____
TELEPHONE # ()	E-MAIL:	
TOLL FREE # ()	FAX #: ()	
APPLICABLE LICENSE(S) NUMBER # _____ TYPE: _____		
FEDERAL ID # _____		

QUALIFICATIONS OF BIDDERS

REFERENCES FOR IFB #18-055/HS

Bidder shall list references in accordance with the requirements set forth in the Qualifications of Bidders.

REFERENCE NAME:			
ADDRESS:			
CONTACT NAME:		← This Contact must be informed that they are listed as a reference, and the County may be calling them.	
CONTACT INFORMATION:	PHONE:	CELL PHONE:	
	FAX:	EMAIL:	
SCOPE OF WORK:			
CONTRACT DATES:			

REFERENCE NAME:			
ADDRESS:			
CONTACT NAME:		← This Contact must be informed that they are listed as a reference, and the County may be calling them.	
CONTACT INFORMATION:	PHONE:	CELL PHONE:	
	FAX:	EMAIL:	
SCOPE OF WORK:			
CONTRACT DATES:			

REFERENCE NAME:			
ADDRESS:			
CONTACT NAME:		← This Contact must be informed that they are listed as a reference, and the County may be calling them.	
CONTACT INFORMATION:	PHONE:	CELL PHONE:	
	FAX:	EMAIL:	
SCOPE OF WORK:			
CONTRACT DATES:			

FIRM NAME: _____

CERTIFICATION OF BUSINESS LOCATION
IFB #18-055/HS

In accordance with the Palm Beach County Local Preference Ordinance, as amended, a preference may be given to: (1) bidders having a permanent place of business in Palm Beach County ("County") or (2) bidders having a permanent place of business in the Glades that are able to provide the goods and/or services to be utilized within the Glades. To receive a local preference, bidders must have a permanent place of business within the County or the Glades, as applicable, prior to the County's issuance of the solicitation. A Business Tax Receipt which is issued by the Palm Beach County Tax Collector, authorizes the bidder to provide the goods/services being solicited by the County, and will be used to verify that the bidder had a permanent place of business prior to the issuance of the solicitation. The bidder must submit this Certification of Business Location ("Certification") along with the required Business Tax Receipt at the time of bid or quote submission. The Business Tax Receipt and this Certification are the sole determinant of local preference eligibility. Errors in the completion of this Certification or failure to submit this completed Certification will cause the bidder to not receive a local preference.

In instances where the bidder is exempt by law from the requirement of obtaining a Business Tax Receipt, the bidder must: (a) provide a citation to the specific statutory exemption; and (b) provide other documentation which clearly establishes that the bidder had a permanent place of business within the County or the Glades prior to the date of issuance of the solicitation. The County hereby retains the right to contact said bidders for additional information related to this requirement after the bid/quote due date.

I. Bidder is a:

_____ Local Business: A local business has a permanent place of business in Palm Beach County.

(Please indicate):

_____ Headquarters located in Palm Beach County
 _____ Permanent office or other site located in Palm Beach County from which a vendor will produce a substantial portion of the goods or services.

_____ Glades Business: A Glades business has a permanent place of business in the Glades.

(Please indicate):

_____ Headquarters located in the Glades
 _____ Permanent office or other site located in the Glades from which a vendor will produce a substantial portion of the goods or services.

II. The attached copy of bidder's County Business Tax Receipt verifies bidder's permanent place of business.

THIS CERTIFICATION is submitted by _____, as
 (Name of Individual)

_____, of _____
 (Title/Position) (Firm Name of Bidder)

who hereby certifies that the information stated above is true and correct and that the County Business Tax Receipt is a true and correct copy of the original. Further, it is hereby acknowledged that any misrepresentation by the bidder on this Certification will be considered an unethical business practice and be grounds for sanctions against future County business with the bidder.

 (Signature)

 (Date)

DRUG-FREE WORKPLACE CERTIFICATION
IFB #18-055/HS

IDENTICAL TIE BIDS/QUOTES - In accordance with Section 287.087, F.S., a preference shall be given to vendors submitting with their bids/quotes the following certification that they have implemented a drug-free workplace program which meets the requirements of Section 287.087; provided, however, that any preference given pursuant to Section 287.087, shall be made in conformity with the requirements pursuant to the Palm Beach County Code, Chapter 2, Article III, Sections 2-80.21 thru 2-80.34. In the event tie bids/quotes are received from vendors who have not submitted with their bids/quotes a completed Drug-Free Workplace Certification form, the award will be made in accordance with Palm Beach County's purchasing procedures pertaining to tie bids/quotes.

This Drug-Free Workplace Certification form must be executed and returned with the attached bid/quote, and received on or before the published bid/quote submission deadline to be considered. The failure to execute and/or return this certification shall not cause any bid/quote to be deemed non-responsive.

Whenever two (2) or more bids/quotes which are equal with respect to price, quality, and service are received by Palm Beach County for the procurement of commodities or contractual services, a bid/quote received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. In order to have a drug-free workplace program, a business shall:

- (1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
- (2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
- (3) Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in number (1).
- (4) In the statement specified in number (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893, Florida Statutes, or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
- (5) Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.
- (6) Make a good faith effort to continue to maintain a drug-free workplace through implementation Section 287.087, Florida Statutes.

THIS CERTIFICATION is submitted by _____ the
 (Individual's Name)

_____ of _____
 (Title/Position with Company/Vendor) (Name of Company/Vendor)

who does hereby certify that said Company/Vendor has implemented a drug-free workplace program which meets the requirements of Section 287.087, Florida Statutes, which are identified in numbers (1) through (6) above.

 Signature

 Date

SCHEDULE 1
LIST OF PROPOSED SBE-M/WBE PRIME AND/OR SUBCONTRACTOR PARTICIPATION

PROJECT NAME OR BID NAME: _____ PROJECT NO. OR BID NO.: _____
 NAME OF PRIME BIDDER: _____ ADDRESS: _____
 CONTACT PERSON: _____ PHONE NO.: _____ FAX NO.: _____
 BID OPENING DATE: _____ USER DEPARTMENT: _____

THIS DOCUMENT IS TO BE COMPLETED BY THE PRIME CONTRACTOR AND SUBMITTED WITH BID PACKET. PLEASE LIST THE NAME, CONTACT INFORMATION AND DOLLAR AMOUNT AND/OR PERCENTAGE OF WORK TO BE COMPLETED BY ALL SBE -M/WBE SUBCONTRACTORS ON THIS PROJECT. IF THE PRIME IS AN SBE-M/WBE, PLEASE ALSO LIST THE NAME, CONTACT INFORMATION AND DOLLAR AMOUNT AND/OR PERCENTAGE OF WORK TO BE COMPLETED BY THE PRIME ON THIS PROJECT. THE PRIME AFFIRMS THAT IT WILL MONITOR THE SBES LISTED TO ENSURE THE SBES PERFORM THE WORK WITH ITS OWN FORCES.

Name, Address and Phone Number	(Check one or both Categories)		<u>DOLLAR AMOUNT OR PERCENTAGE OF WORK</u>				
	<u>M/WBE</u> Minority Business	<u>SBE</u> Small Business	Black	Hispanic	Women	Caucasian	Other (Please Specify)
1.	☐	☐	_____	_____	_____	_____	_____
2.	☐	☐	_____	_____	_____	_____	_____
3.	☐	☐	_____	_____	_____	_____	_____
4.	☐	☐	_____	_____	_____	_____	_____
5.	☐	☐	_____	_____	_____	_____	_____
(Please use additional sheets if necessary)							
Total			_____	_____	_____	_____	_____

Total Bid Price \$ _____ Total SBE-M/WBE Participation Dollar Amount or Percentage of Work _____

I hereby certify that the above information is accurate to the best of my knowledge: _____
 Signature Title

- Note:**
- 1.The amount listed on this form for a subcontractor must be supported by price or percentage listed on the signed Schedule 2 or signed proposal in order to be counted toward goal attainment.
 2. Firms may be certified by Palm Beach County as an SBE and/or an M/WBE. If firms are certified as both an SBE and M/WBE, please indicate the dollar amount and/or percentage under the appropriate category.
 3. M/WBE information is being collected for tracking purposes only.

**OSBA SCHEDULE 2
LETTER OF INTENT TO PERFORM AS AN SBE-M/WBE SUBCONTRACTOR**

This document must be completed by the SBE-M/WBE Subcontractor and submitted with bid packet. Specify in detail, the particular work items to be performed and the dollar amount and/or percentage for each work item. SBE credit will only be given for items which the SBE-M/WBE Subcontractor are SBE certified to perform. Failure to properly complete Schedule 2 may result in your SBE participation not being counted.

PROJECT NUMBER: _____ PROJECT NAME: _____

TO:

(Name of Prime Bidder)

The undersigned is certified by Palm Beach County as a - (check one or more, as applicable):

Small Business Enterprise _____ Minority Business Enterprise _____

Black _____ Hispanic _____ Women _____ Caucasian _____ Other (Please Specify) _____

Date of Palm Beach County Certification: _____

The undersigned is prepared to perform the following described work in connection with the above project. Additional Sheets May Be Used As Necessary

Line Item/ Lot No.	Item Description	Qty/Units	Total Price/	
			Unit Price	Percentage
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

at the following price or percentage

(Subcontractor's quote)

and will enter into a formal agreement for work with you conditioned upon your execution of a contract with Palm Beach County.

If undersigned intends to subcontract any portion of this job to a certified SBE or a non-SBE subcontractor, please list the name of the subcontractor and the amount below.

Price or Percentage _____ / _____
(Name of Subcontractor)

The Prime affirms that it will monitor the SBE's listed to ensure the SBE's perform the work with its own forces. The undersigned subcontractor affirms that it has the resources necessary to perform the work listed without subcontracting to non-certified SBE or any other certified SBE subcontractors except as noted above.

The undersigned subcontractor understands that the provision of this form to Prime Bidder does not prevent Subcontractor from providing quotations to other bidders.

(Print name of SBE-M/WBE Subcontractor)

By: _____
(Signature)

(Print name/title of person executing on behalf
of SBE/M/WBE Subcontractor)

Date: _____

**OSBA SCHEDULE 3
SBE-M/WBE ACTIVITY FORM**

SBE-M/WBE ACTIVITY FOR MONTH ENDING _____ PROJECT#: _____

PROJECT NAME _____

PRIME CONTRACTOR NAME _____

PROJECT SUPERVISOR _____

Schedule 3 is used to show the monthly payment activity for work performed by each SBE-M/WBE Subcontractor on the project and in conformity with the SBE-M/WBE's submitted on schedule 2. It also shows approved change orders as they impact the SBE-M/WBE Subcontractors. Schedule 3 is to be submitted by the Prime with each payment request to Palm Beach County. In the SBE-M/WBE Subcontracting Information section, list the name(s) of each SBE-M/WBE Subcontractor on the project and the total contracted amount for each SBE-M/WBE Subcontractor on the project. As the project proceeds, please complete each column under the SBE-M/WBE Subcontracting Information section accordingly. In the SBE-M/WBE Category, please check the appropriate category that represents each SBE-M/WBE Subcontractor.

SBE-M/WBE SUBCONTRACTING INFORMATION								SBE-M/WBE Category (check all applicable)						
Name of SBE-M/WBE Subcontractor	SBE-M/WBE Total Contract Amount	Approved Change Orders	Revised SBE-M/WBE Contract Amount	Amount drawn for SBE-M/WBE Sub This Period	Amount drawn for SBE-M/WBE Sub to Date	Amount Paid to Date for SBE-M/WBE Subcontractor	Actual Starting Date	Minority Business (√)	Small Business (√)	Black	Hispanic	Women	Caucasian	Other (Please Specify)

I hereby certify that the above information is true to the best of my knowledge _____

(Signature and Title)

Return to: Palm Beach County

Additional Sheets May Be Used As Necessary

NOTE: Firms may be certified as an SBE and/or an M/WBE. If firms are certified as both an SBE and M/WBE, the dollar amount will not be counted twice.

Revised 9/7/2011

OSBA SCHEDULE 4 - SBE-M/WBE PAYMENT CERTIFICATION

The Prime Contractor is to submit Schedule 4 with its Monthly Payment Request to Palm Beach County to reflect actual payments made to the SBE-M/WBE Subcontractor. The Prime Contractor is not to request signature from an SBE-M/WBE Subcontractor unless it has made a payment to the SBE-M/WBE Subcontractor. The SBE-M/WBE Subcontractor is not to complete and sign this form unless it has received a payment from the Prime Contractor for services actually performed by the SBE-M/WBE Subcontractor. A separate Schedule 4 is required for each SBE-M/WBE Subcontractor payment.

This is to certify that _____ received
(SBE or M/WBE Subcontractor Name)

(Monthly) or (Final) payment of \$ _____ . _____

On _____ - _____ - _____ from _____
MM DD YYYY (Prime Contractor Name)

For labor and/or materials used on _____ / _____
(Project Name) (Work Order)

DEPT.: _____ PROJECT NO.: _____

PRIME CONTRACTOR VENDOR CODE: _____

SBE OR M/WBE SUBCONTRACTOR VENDOR CODE: _____

=====

If the SBE Subcontractor intends to disburse any funds associated with this payment to any Subcontractor for labor and/or material provided on this project, please provide the following information:

*Subcontractor Name: _____ Amount to be paid: _____

*Note: If the subcontractor listed in this section is an SBE or M/WBE a separate schedule 4 is required to verify payment.

=====

By: _____
(Signature of Subcontractor) (Print Name & Title of Person executing on behalf of Subcontractor)

STATE OF FLORIDA
COUNTY OF _____

Sworn to and subscribed before me this _____ day of _____, 20_____

By: _____

Notary Public, State of Florida

Print, Type or Stamp Commissioned Name of Notary

Personally Known ____ OR Produced Identification ____ Type of Identification _____