CLARENDON COUNTY INVITATION FOR BID

AD- REPLACE AIRPORT FUEL SYSTEM AT THE SANTEE-COOPER REGIONAL AIRPORT

Clarendon County is accepting sealed BIDS for the REPLACEMENT OF AIRPORT FUEL SYSTEM AT THE SANTEE-COOPER REGIONAL AIRPORT, LOCATED AT 8604 HIGHWAY 260, MANNING, SC 29102

This project is funded in part by the SC Aeronautics Commission and the following federal mandates apply

- **Executive Order 11246 and DOL Regulation 41 CFR PART 60** - Affirmative Action to Ensure Equal Employment Opportunity.
- **DOL Regulation 29 CFR Part 5** – Davis Bacon Act.
- **DOT Regulation 49 CFR PART 29** – Government-wide Debarment and Suspension and Government-wide
- Requirements for Drug-free Workplace.
- **TITLE 49 United States Code, CHAPTER 501** – Buy American Preferences.

Clarendon County invites interested General Contractors who are qualified and have performed similar projects. Qualified firms will have at least five years experiences installing, erecting, and assembling work similar in material, design, and to the extent indicated for this project, and a record of successful in-service performance of their work. The firm to be selected must employ personnel, including supervisory personnel, experienced and skilled in the processes and operations indicated.

The work generally consists of the removal and replacement and installation of a new Airport Fuel System. The work includes but is not limited to: removal and disposal of the existing system and all components, removal of existing service lines and complete installation of new fuel system, testing and additional work as required. **The new system must be fully functional, prior to removing the existing system.** All work must be performed in accordance with all local, state and federal mandates to include (but not limited to) DHEC and EPA.

OWNERS RIGHTS: Clarendon County reserves the right to accept or reject any, all or any part of bids received as a result of this request, to waive any informalities or to cancel in part or in its entirety this request, if it is in its best interest to do so. Clarendon County will be sole judge as to whether bids submitted meet all requirements. All bids submitted shall become the property of Clarendon County. This solicitation does not commit Clarendon County to award a contract, to pay any cost incurred in the preparation of bids or to procure or contract for goods or services. No bid will be considered unless bidder is legally qualified under the provisions of the South Carolina Contractor's Licensing Law (South Carolina Code of Laws as amended on April 1, 1999, Chapter 11, Section 40-11-10 through 40-11-428).

Bids must be accompanied by a Bid Bond in the amount of not less than (5%) of the Bid. No bid may be withdrawn within a period of ninety (90) days to allow time for Bid review, qualification of Bidder, and approval of award. Upon award of contract, Clarendon County will supervise construction of project, payments and acceptance of the project.

PRE-BID CONFERENCE: A pre-bid conference will be held on-site at 10:00 a.m. Thursday, July 10, 2014

DEADLINE TO SUBMIT: Sealed BIDS must be received by **2:00 P.M. Monday, July 21, 2014**

Interested parties must request PACKAGE in writing, via fax, mail or e-mail *(preferred)* to:

Tamika Malone procurement@clarendoncountygov.org
PROCUREMENT DIRECTOR
CLARENDON COUNTY
411 SUNSET DRIVE ROOM 603
MANNING, SC 29102 PHONE (803) 433-3240 FAX (803) 433-4002

	CLARENDON COUNTY PROCUREMENT **INVITATION FOR BID** *******THIS DOCUMENT IS** **BID SUBMITTAL FORM**	Solicitation Number Buyer	**REPLACEMENT OF AIRPORT FUEL SYSTEM AT THE SANTEE-COOPER REGIONAL AIRPORT, LOCATED AT 8604 HIGHWAY 260, MANNING, SC 29102** **Tamika Malone CPPO, CPPB** **Procurement Director** **procurement@clarendoncountygov.org**
AWARD& AMENDMENTS	************INSTRUCTIONS ************ **DESCRIPTION:** REPLACEMENT OF AIRPORT FUEL SYSTEM AT THE SANTEE-COOPER REGIONAL AIRPORT, LOCATED AT 8604 HIGHWAY 260, MANNING, SC 29102 *********INSTRUCTIONS ************ **PRE-BID CONFERENCE: A pre-bid conference will be held on-site at 10:00 a.m. Thursday, July 10, 2014 A.M.** **DEADLINE TO SUBMIT**: Bids must be received by **2:00 P.M. Monday, July 21, 2014** Bids will be publicly opened and read aloud at the Clarendon County Procurement Department		

NAME OF OFFEROR (Full legal name of business submitting the offer)	OFFEROR'S TYPE OF ENTITY: (Check one) ☐ Sole Proprietorship ☐ Partnership ☐ Corporation ____State of Incorporation ☐ Government entity (federal, state, or local) ☐ Other ☐ **DBE/MBE/WBE** ☐ **SC RESIDENT VENDOR** ☐ **CERTIFICATE OF INSURANCE ENCLOSED** ☐ **GENERAL CONTRACTOR** _____
AUTHORIZED SIGNATURE Person signing must be authorized to submit binding offer to enter contract on behalf of Offeror named above. My signature indicates my agreement to be bound to the terms and conditions contained herein.	**TAX PAYER ID** _____ **DUNS** _____ **ACKNOWLEDGEMENT OF ADDENDUMS** ☐ **ADDENDUM #1** ☐**ADDENDUM #2** ☐ **ADDENDUM #3**
TITLE (Business title of person signing above)	
PRINTED NAME (Printed name of person signing above) / DATE	

OFFEROR'S ADDRESS	CITY/STATE	ZIP CODE
PHONE	FAX	E-MAIL

I hereby affirm that my BID includes cost for permits, fees, personnel, supervision, labor, time, materials and equipment required to perform all work in accordance with all terms and conditions contained herein. This solicitation, along with an assigned PO# will act as contract for this purchase. My signature indicates that I have the authority to enter into an agreement with Clarendon County and will be responsible for the fulfillment of this solicitation.

My Lump Sum Bid Price meets all specifications as outlined herein; to provide and install a new **AIRPORT FUEL SYSTEM** and **REMOVAL AND DISPOSAL** of existing system. **After the new system is approved and is deemed as fully functional by the County Engineer, the existing system will be removed and disposed of in accordance with local, state and federal requirements.**

I have included all manufacturer specifications/tear sheets along with my BID. ☐ YES ☐ NO

Lump Sum BID PRICE $_____ **(BID PRICE SHOULD NOT INCLUDE TAXES)**

Lump Sum BID PRICE in words _____

ACCEPTED BY: _____ _____

TAMIKA MALONE CPPO, CPPB **DATE**
PROCUREMENT DIRECTOR, CLARENDON COUNTY

I: GENERAL

EXISTING APPURTENANCES The purpose of this **INVITATION FOR BID** is to seek a qualified Contractor(s) to **REPLACE AIRPORT FUEL SYSTEM AT THE SANTEE-COOPER REGIONAL AIRPORT**

Clarendon County reserves the right to accept or reject any, all or any part of bids received as a result of this request, to waive any informalities or to cancel in part or in its entirety this request, if it is in the best interest to do so. Clarendon County will be sole judge as to whether bids submitted meet all requirements. All bids submitted shall become the property of Clarendon County. This solicitation does not commit Clarendon County to award a contract, to pay any cost incurred in the preparation of bids or to procure or contract for goods and services.

ADDENDUMS: All Addendums to and interpretations of this solicitation shall be in writing from the Procurement Director, Clarendon County. Any errors or omissions requiring correction shall be brought to the Procurement Director's attention immediately. The Procurement Director shall not be legally bound by any Addendum or interpretation that is not in writing. Bids, Addendums or withdrawal request must be received by the time the request for proposal is due. It is the offeror's sole responsibility to ensure that these documents are received by the Procurement Director (or office) any time prior to the advertised deadline. No BID may be withdrawn after that time.

CANCELLATION/REJECTION: Clarendon County reserves the right to accept or reject any, all or any part of the proposals received as a result of this request, or to cancel in part or in its entirety this request if it is in the best interest of the County to do so. Clarendon County will be sole judge as to whether proposals submitted meet all requirements contained in this solicitation. Clarendon County will not be responsible for any cost incurred in the preparation of this proposal. Clarendon County reserves the right to negotiate final price subsequent to the submission of qualified proposals.

CERTIFICATE OF INSURANCE: Successful offeror(s) shall name the County as additional insured on the contractor's insurance policies. Contractor will be required to provide a **'Certificate' of Insurance** for **any CONTRACTOR** visiting on-site in Clarendon County and those that are so located, and those that provide on-site equipment maintenance, evaluation, or other services for the protection of Clarendon County, contractor shall maintain throughout the performance of its obligations under this Agreement a policy or policies of Workers' Compensation Insurance with such limits as may be required by law, and a policy or policies of general liability insurance with limits sufficient to cover any loss or potential loss resulting from this contract insuring against liability for injury to and death of persons and damage to and destruction of property arising out of or based upon any act or omission of the CONTRACTOR or any of its subcontractors or their respective officers, directors, employees or agents and a policy or policies of Automobile Liability Insurance with such limits as may be required by law insuring against liability for injury to and death of persons and damage to and destruction of property arising out of or based upon any act or omission of the CONTRACTOR or any of its subcontractors or their respective officers, directors, employees or agents while operating their vehicle(s) on Clarendon County property.

COMPETITION: This solicitation is intended to promote competition. If the language, specifications, terms and conditions, or any combination thereof restricts or limits the requirements in this solicitation to a single source, it shall be the responsibility of the interested offeror to notify the Procurement Office in writing so as to be received five (5) days prior to opening date. Award will be made to lowest responsive and responsible vendor. The solicitation may or may not be changed but a review of such notification will be made prior to award.

CONTRACT ADMINISTRATION: Questions or problems arising after award of this contract shall be directed in writing to the Clarendon County Procurement Director, 411 Sunset Drive Room 603, Manning, SC 29102.

CORRECTION OF ERRORS ON RESPONSE FORM(S): All prices and notations should be printed in ink or typewritten. Errors should be crossed out, corrections entered and initialed by the person signing the proposal. Erasures or use of typewriter correction fluid may be cause for rejection. No proposal shall be altered or amended after specified time for reviewing.

DEFAULT: In case of default by the contractor, Clarendon County reserves the right to purchase any or all services in default in the open market, charging the contractor with any additional costs. The defaulting contractor shall not be considered a responsible bidder until the assessed charge has been satisfied.

Compliance with Laws. Contractor agrees to comply with any applicable federal, state and local laws and regulations. ***Termination--Breach.*** Should Contractor fail to fulfill in a timely and proper manner its obligations under this contract or if it should violate any of the terms of this contract, Clarendon County shall have the right to immediately terminate the contract. Such termination shall not relieve Contractor of any liability to Clarendon County for damages sustained by virtue of any breach by Contractor. ***Termination--Funding.*** Should funding for this contract be discontinued, Clarendon County shall have the right to terminate the contract immediately upon written notice to Contractor. ***Termination--Notice.*** Clarendon County may terminate this contract at any time upon written notice to Contractor. ***Warranty and Responsibilities.*** Any failure of Contractor to provide goods or services or otherwise perform pursuant to this contract, including, without limitation, interruption or delay, that is due to failure of any services, individually or in combination, to successfully transition and/or to provide correct results as set forth in this document, shall not be ***force majeure***, and shall be a breach of this contract. This applies to any failure of Contractor to perform and/or subcontractors that are due to perform any services, individually or in combination.

DISPUTES: The laws of South Carolina shall govern this Agreement. All litigation arising under said Agreement shall be litigated only in a nonjury hearing in the Circuit Court within the Third Judicial Circuit of Clarendon County, South Carolina. Upon approval of the Circuit Court, any such action shall be referred to the Master-in-Equity for Clarendon County. The prevailing party shall be entitled to recover attorney's fees and the costs of said litigation.

EQUAL OPPORTUNITY: Contractor is referred to and shall comply with all applicable provisions, if any, of Title 41, Part 60 of the Code of Federal Regulations, including but not limited to Sections 60-1.4, 60-4.2, 60-4.3, 60-250.5(a), and 60-741.5(a), which are hereby incorporated by reference.

EXISTING APPURTENANCES: The Contractor shall be solely responsible for the continuity of service and shall maintain a safe and satisfactory operating condition, all overhead surface, or subsurface utilities affected by his operations.

The Contractor shall exercise every precaution to avoid damage to existing shoulder pavements, grassed areas, fences and monuments. The Contractor shall locate all existing utilities and take all necessary precautions to prevent damage and/or determine the extent of relocation required in the event of damage during project work.

It shall be the Contractor's responsibility to keep the site neat and clean during the duration of the contract. Removal of all rubbish, waste materials, and unnecessary equipment shall be removed from the site except as otherwise specified. All work shall be accomplished so that the public and adjacent property owners will be inconvenienced as little as possible. Contractor shall be responsible for the repair of damage to public and other private lands that resulted from project work.

FALSE CLAIMS: According to the S.C. Code of Laws § 16-13-240, "a person who by false pretense or representation obtains the signature of a person to a written instrument or obtains from another person any chattel, money, valuable security, or other property, real or personal, with intent to cheat and defraud a person of that property is guilty" of a crime.

FIXED PRICING REQUIRED: Any pricing provided by contractor shall include all costs for performing the work associated with that price. Contractor's price shall be fixed for the duration of this contract, including option terms. This clause does not prohibit contractor from offering lower pricing after award.

INDEMNIFICATION: Any term or condition is void to the extent it requires the County to indemnify anyone.

LIQUIDATED DAMAGES: Any liquidated damages assessed, may be deducted from any payments due to the Contractor. A fixed sum of $200.00 dollars per each and every calendar day the Contractor fails to perform in whole or in part any of his obligations specified herein.

MAINTENANCE & RESTORATION: It shall be the Contractor's responsibility to keep the site neat and clean for duration of project. All waste materials and unnecessary construction equipment shall be removed from the site. Contractor shall be responsible for repair of damage to public and other private lands resulting from project work.

NON-APPROPRIATIONS: Any contract entered into by Clarendon County or its departments, institutions, agencies, political subdivisions or other entities resulting from this bid invitation shall be subject to cancellation without damages or further obligation when funds are not appropriated or otherwise made available to support continuation of performance in a subsequent fiscal period or appropriated year.

PROJECT MANAGEMENT: The designated Project Manager for this project will be the Clarendon County Engineer, Billy Timmons. Successful offeror(s) will be responsible for coordinating all work through Engineer, including (but not limited to) problems, anticipated delays and providing progress reports as required. All routine and final inspections will be made by the County Engineer and will required for payment authorization. **Itemized invoice shall be submitted to:** **CLARENDON COUNTY FINANCE**
411 SUNSET DRIVE ROOM 203
MANNING, SC 29102

PROTECTION OF HUMAN HEALTH & THE ENVIRONMENT: The County of Clarendon requires all contractual activities to be in compliance with local, state, and federal mandates concerning "Protection of Human Health and Environment". Any contractor doing business with the County will be required to document compliance and to specify prudent practices used by the contractor to address applicable mandates including, but not restricted to "The Hazard Communication Standard" OSHA CFR 1910.1200 (scrr article 1,71-1910.1200). By submission of this proposal, the vendor agrees to take all necessary steps to insure compliance with these requirements.

PUBLICITY: Contractor shall not publish any comments or quotes by Clarendon County employees, or include the County in either news releases or a published list of customers, without the prior written approval of the Procurement Director.

RESTORATION OF PROPERTIES & EXISTING CONDITIONS: The Contractor shall be solely responsible for the continuity of service and shall maintain a safe and satisfactory operating condition, all overhead surface, or subsurface utilities affected by his operations. The Contractor shall exercise every precaution to avoid damage to existing shoulder pavements, grassed areas, fences and monuments. The Contractor shall locate all existing utilities and take all necessary precautions to prevent damage and/or determine the extent of relocation required in the event of damage during project work.

RESTRICTIONS APPLICABLE TO OFFERORS: Violation of restrictions may result in disqualification of your offer, suspension or debarment, and may constitute a violation of the SC state Ethics Act. (a) After issuance of the solicitation, ***you agree not to discuss this procurement activity in any way with the Using Governmental Unit or its employees, agents or officials***. All communications must be solely with the Procurement Director or designee. This restriction may be lifted by express written permission from the Procurement Director. (b) Unless otherwise approved in writing by the Procurement Director ***you agree not to give anything to any Using Governmental Unit.***

II: REQUIRED VERIFICATION SOURCES:

REFERENCES: Please provide references who can verify similar work.

COMPANY:	CONTACT NAME:	PROJECT:
ADDRESS: E-MAIL:	PHONE: ( )	Was project completed within budget and minimum change orders? ☐ Yes ☐ No
COMPANY:	CONTACT NAME:	PROJECT:
ADDRESS: E-MAIL:	PHONE: ( )	Was project completed within budget and minimum change orders? ☐ Yes ☐ No

SUBCONTRACTORS LIST: All Subcontractors in excess of 1/2 of 1% of total Offer must be listed. Clarendon County reserves the right to approve all subcontractors, any subcontractor not listed herein must be approved with a written consent from Procurement Director. Please attach any additional numbered pages as required

SUBCONTRACTOR:		ITEM OF WORK:
LOCATION/ADDRESS:		E-MAIL
LICENSE NO. CLASS:	EXPIRATION DATE: / /	PHONE: ( )
SUBCONTRACTOR:		ITEM OF WORK:
LOCATION/ADDRESS:		E-MAIL
LICENSE NO. CLASS:	EXPIRATION DATE: / /	PHONE: ( )

III: SCOPE OF WORK

Provide and install a new **AIRPORT FUEL SYSTEM** and **REMOVAL AND DISPOSAL** of existing system. **After the new system is approved and is deemed as fully functional by the County Engineer, the existing system will be removed and disposed of in accordance with local, state and federal requirements.**

The CONTRACTOR shall restore or replace any damage to public or private properties to a condition at least equal to that of the existing prior to damage. To this end the CONTRACTOR shall provide as required all necessary work to restore the properties to their pre-existing conditions. It shall be the Contractor's responsibility to keep the site neat and clean during the duration of the contract. Removal of all rubbish, waste materials, and unnecessary equipment shall be removed from the site except as otherwise specified.

All work shall be accomplished so that the public and adjacent property owners will be inconvenienced as little as possible. Contractor shall be responsible for the repair of damage to public and other private lands that resulted from work from this contract.

1. The successful contractor (and all sub-contractors) shall be experienced in and appropriately licensed for the work proposed. The successful contractor shall also be responsible for obtaining any and all permits required.

2. The contractor shall perform all work in compliance with applicable local, state and federal safety and health requirements. Where there is a conflict between applicable regulations, the most stringent will apply.

3. The Contractor shall provide evidence and work-related references concerning experience and ability to properly perform the contract as assigned. The Contractor shall have adequate operational resources and plans to successfully fulfill all contract requirements and shall supply Clarendon County with the number of field personnel it has available to provide the work on this contract.

4. The contractor shall repair any damage to all staging and work areas, caused by the contractor's equipment. The contractor shall be responsible for filling to grade with like material all surface damage caused by contractor's equipment.

5. The Contractor shall assume full responsibility and liability to ensure compliance with all applicable regulations pertaining to the health and safety of personnel during project work.

6. The Contractor shall incorporate a quality control plan to address quality of services for duration of the contract, such as identifying and correcting any deficiencies noted during a site inspection. If site is "deemed" less than satisfactory in appearance, the Contractor will make correction before the level of performance becomes unacceptable.

TECHNICAL SPECIFICATIONS

FOR CONSTRUCTION OF

SANTEE-COOPER REGIONAL AIRPORT
CLARENDON COUNTY, SC

Airport Fuel Systems

IN CLARENDON COUNTY, SOUTH CAROLINA

June 17, 2016

Clarendon County
Engineering Department
411 Sunset Drive
Manning, South Carolina 29102

SECTION 00005
TABLE OF CONTENTS

END OF SECTION

SECTION 00850

DRAWING INDEX

1. DRAWINGS ACCOMPANYING SPECIFICATIONS. The drawings enumerated below prepared by Clarendon County Engineering Department, Manning, South Carolina and dated June, 2014 accompany this specification and are a part of the Contract Documents. Drawings (i.e., drawing CAD files, plotted originals or any copies, blueprints, etc.) and original designs thereupon are the property of the ENGINEER with all rights reserved and shall not be used for any purpose other than intended by the Contract Documents.

Drawings:

Number	Title
Santee-Cooper Regional Airport – Clarendon County, SC – New Fuel System	
1	Site Layout
2	Construction Safety and Phasing Plan
3	Fuel Tanks Plan and Sections
4	Electrical

*****Drawings attached via separate PDF file.

END OF SECTION

SECTION 01050

FIELD ENGINEERING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included: Provide such field engineering services as are required for proper completion of the Work including, but not necessarily limited to:

1. Provide all staking required to construct the improvements from benchmarks established by the Engineer.
2. Establish proper line and levels for installation of utilities.

B. Work by others:

1. Not less than two benchmark elevations will be provided.

1.2 QUALITY ASSURANCE

A. Provide a competent survey party and surveying instruments for staking the work.

B. Exercise proper precautions to verify the figures shown on the Drawings prior to laying out any part of the Work.

1. The Contractor will be held responsible for any errors therein that otherwise might have been avoided.

2. Promptly inform the Engineer of any error or discrepancies discovered in the Drawings or Specifications in order that proper corrections may be made.

1.3 SUBMITTALS

A. Comply with Section 01720.

1.4 PROCEDURES

A. Locate and protect control points before starting work on the site.

B. Preserve permanent reference points before progress of the Work.

C. Do not change or relocate reference points or items of the Work without specific approval from the Engineer.

D. Promptly advise the Engineer when a reference point is lost or destroyed, or requires relocation because of other changes in the Work.

END OF SECTION

SECTION 01060

REGULATORY REQUIREMENTS

A. The following requirements of the Owner and Regulatory Agencies having an interest in this project are hereby made a part of this Contract.

B. The construction of the project, including the letting of contracts in connection therewith, shall conform to the applicable requirements of Federal, State, territorial, and local laws and ordinances.

C. South Carolina Sales Tax: All applicable South Carolina sales tax shall be to the account of the Contractor.

D. Use of chemicals: All chemicals used during the project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.

E. Safety and Health Regulations: The Contractor shall comply with the Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (PL 91-596) and under the Section 107 of the Contract Work Hours and Safety Standards Act (PL 91-54) and any later revisions or applicable standards. Also personnel working in various areas of the project vicinity must be properly trained and instructed.

F. Inspection by Owner and Agencies: The representatives of the Owner, the South Carolina Department of Health and Environmental Control, South Carolina Department of Transportation, Federal Aviation Administration and other regulatory agencies shall have access to the work wherever it is, in preparation or in progress, and the Contractor shall provide proper facilities for such access and inspection.

END OF SECTION

SECTION 01061

PERMITS AND RIGHTS-OF-WAY

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included: This section establishes requirements pertaining to be securement and payment for licenses, building permits, rights-of-way, etc. necessary for the construction of the project.

B. Work not included: The Owner will provide to the Contractor access to the site. Contractor must limit area of work and travel to comply with Phasing and Safety Plan.

1.2 SUBMITTALS

A. Submit to the Engineer satisfactory evidence that all necessary licenses, building permits, etc. have been secured prior to commencing the work.

PART 2 - PRODUCTS

No products are required for this work.

PART 3 - EXECUTIION

3.1 BUSINESS LICENSE

A. Determine licenses necessary to perform the work at project location.
B. Obtain all necessary licenses at no additional cost to the Owner.

3.2 BUILDING PERMITS

A. Secure and pay for all building permits required whether of temporary or permanent nature.
B. Permits of a temporary nature necessary for the prosecution of the Work shall be secured and paid for by the Contractor.
C. Permits for permanent structures or permanent changes in existing facilities shall be secured and paid for by the Owner.

3.3 RIGHTS-OF-WAY, UTILITY LINES
A. Owner will provide necessary rights-of-way or easements for construction of utility lines, whether on privately or publicly owned property.

END OF SECTION

SECTION 01340

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included: Make submittals required by the Contract Documents and revise and resubmit as necessary to establish compliance with the specified requirements.

B. Related work:

1. Individual requirements for submittals also may be described in pertinent sections of thsese specifications.

2. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these specifications.

1.2 QUALITY ASSURANCE

A. Coordination of submittals:

1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
2. Verify that each item and the submittal for it conform in all respects with the specified requirements.
3. By affixing the Contractor's signature to each submittal, certify that this coordination has been performed.

B. The following products do not require further approval except for interface within the Work:

1. Products specified by reference to standard specifications such as ASTM, AWWA and similar standards.
2. Products specified by manufacturer's name and catalog model number.

C. "Or Equal":

1. Where the phrase "or equal" occurs in the Contract Documents, do no assume that the materials, equipment or methods will be considered as equal unless the item has been specifically so approved for the Work by the Engineer.
2. The decision of the Engineer shall be final.

1.3 SUBMITTALS

A. Make submittals of shop drawings, samples, substitution requests and other items in accordance with the provisions of this Section.

PART 2 - PRODUCTS

2.1 SHOP DRAWINGS

A. Scale and measurements: Make shop drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the Work.

B. Types of prints required:

1. Submit shop drawings in the form of at least two blueline or blackline prints of each sheet. Also provide pdf file of submittals.

C. Review comments of the Engineer will be shown when it is returned to the Contractor. The Contractor may make and distribute such copies as are required for his purposes.

D. Do not begin fabrication of equipment or materials prior to Engineer's approval of shop drawings.

2.2 MANUFACTURER'S LITERATURE

A. Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, clearly show which portions of the contents are being submitted for review.

B. Submit the number of copies which are required to be returned, plus Engineer's copies.

2.3 SAMPLES

A. Provide sample or samples identical to the precise article proposed to be provided. Identify as described under "Identification of submittals" below.

B. Number of samples required:

1. Unless otherwise specified, submit samples in the quantity which is required to be returned, plus one which will be retained by the Engineer.
2. By prearrangement in specific cases, a single sample may be submitted for review and, when approved, be installed in the work at a location agreed upon by the Engineer.

2.4 COLORS AND PATTERNS

A. Unless the precise color and pattern is specifically called out in the Contract Documents, and whenever a choice of color or pattern is available in the specified products, submit accurate color and pattern charts to the Engineer for selection.

PART 3 - EXECUTION

3.1 IDENTIFICATION OF SUBMITTALS

A. Consecutively number all submittals.

1. When material is resubmitted for any reason, transmit under a new letter of transmittal and with a new transmittal number.
2. On resubmittals, cite the original submittal number for reference.

B. Accompany each submittal with a letter of transmittal showing all information required for identification and checking.

C. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number in which the item was included.

D. Maintain an accurate submittal log for the duration of the work, showing current status of all submittals at all times. Make the submittal log available to the Engineer for his review upon request.

3.2 GROUPING OF SUBMITTALS

A. Unless otherwise specified, make submittals in groups containing all associated items to assure that information is available for checking each item when it is received.

1. Partial submittals may be rejected as not complying with the provisions of the Contract.
2. The Contractor may be held liable for delays so occasioned.

3.3 TIMING OF SUBMITTALS

A. Make submittals far enough in advance of scheduled dates for installation to provide time required for reviews, for securing necessary approvals, for possible revisions and resubmittals, and for placing orders and securing delivery.

B. In scheduling, allow at least five working days for review by the Engineer following his receipt of the submittal.

3.4 ENGINEER'S REVIEW

A. Review by the Engineer does not relieve the Contractor from responsibility for errors which may exist in the submitted data.

B. Revisions:

1. Make revisions required by the Engineer.
2. If the Contractor considers any required revision to be a change, he shall so notify the Engineer prior to proceeding with work.
3. Make only those revisions directed or approved by the Engineer.

END OF SECTION

SECTION 01640
PRODUCT HANDLING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included: Protect products scheduled for use in the work by means including, but not necessarily limited to, those described in this Section.

B. Related work:

1. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these specifications.

1.2 QUALITY ASSURANCE

A. Include within the Contractor's quality assurance program such procedures as are required to assure full protection of work and materials.

1.3 MANUFACTURERS' RECOMMENDATIONS

A. Except as otherwise approved by the Engineer, determine and comply with manufacturer's recommendations on product handling, storage and protection.

1.4 PACKAGING

A. Deliver products to the job site in their manufacturer's original container, with labels intact and legible.

1. Maintain packaged materials with seals unbroken and labels intact until time of use.
2. Promptly remove damaged material and unsuitable items from the job site and promptly replace with material meeting the specified requirements, at no additional cost to the Owner.

B. The Engineer may reject as non-complying such material and products that do not bear identification satisfactory to the Engineer as to manufacturer, grade, quality and other pertinent information.

1.5 PROTECTION OF MATERIAL AND WORK

A. General
1. Carefully and properly protect all materials of every description, both before and after being used in the Work.
2. Provide any enclosing or special protection from weather deemed necessary by the Engineer at no additional cost to the Owner.

B. Partial payments under the Contract will not relieve the Contractor from responsibility.

1. When materials and work at the site which have been partially paid for are not adequately protected by the Contractor, such materials will be protected by the Owner at the expense of the Contractor and no further partial payment thereon will be made.

C. Maintain finished surfaces clean, unmarred, and suitably protected until accepted by the Owner.

1.6 STORAGE

A. Store all items of equipment, component parts, etc. in accordance with the manufacturer's recommendations or as may otherwise be necessary to prevent damage or deterioration of any sort.

1.7 REPAIRS AND REPLACEMENTS

A. In the event of damage, promptly make replacements and repairs to the approval of the Engineer, and at no additional cost to the Owner.

B. Additional time required to secure replacements and to make repairs will not be considered by the Engineer to justify an extension in the contract time of completion.

END OF SECTION

SECTION 01700
CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included shall be providing compliance with the requirements of the General Conditions of these Specifications for administrative procedures in closing out the projected work.

B. Related work:

1. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these specifications.

1.2 SUBSTANTIAL COMPLETION

A. The Contractor shall notify the Engineer that, in his opinion, the project is substantially complete. A written statement listing items complete shall be submitted.

B. Upon receipt of the Contractor's notice, the Engineer shall make an inspection to determine if substantial completion is provided.

C. If, in the Engineer's opinion, the project is not substantially complete, a written notice to the Contractor shall follow outlining reasons and deficiencies in work which comprised his decision. The Engineer's decision shall be final.

1.3 FINAL INSPECTION

A. The Engineer will make a final inspection for the Contractor after any and all items noted in the substantial completion inspection have been corrected. The Contractor shall notify the Engineer in writing when a final inspection is needed. Incomplete and/or defective work shall be given to the Contractor by written notice.

1.4 REINSPECTION

A. Reinspections required due to failure by the Contractor to make previously noted corrections will be performed by the Engineer.

B. Reinspections will continue until the work is acceptable to the Engineer.

1.5 COMPLETION BY CONTRACTOR

A. When the Engineer finds the Contractor's work acceptable, the Contractor shall be given such notice and should proceed with closeout submittals.

B. Closeout submittals shall contain at least the following:

1. Project record documents.
2. Certification that all materials have been paid for and no liens or other encumbrances exist.

1.6 FINAL PAYMENT

A. Final payment to the Contractor will be made upon completion of the previous items and others required by these specifications. A final statement shall be forwarded to the Engineer. The statement shall address:

1. Previous change orders.
2. Unit prices.
3. Deductions for uncorrected work.
4. Deductions for liquidated damages.
5. Deductions for re-testing work.
6. Deductions for re-inspection.
7. Adjusted contract sum.
8. Previous payments.
9. Amount due.

B. When required, the Engineer will prepare a contract change order for adjustments not previously made.

END OF SECTION

SECTION 02222

TRENCHING, BACKFILLING FOR UTILITIES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included: Trench, backfill, and compact as specified herein and as needed for installation of underground utilities associated with the Work.

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completetly familiar with the specified requirements and the methods needed for proper preformance of the work of this Secion.

B. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.

1.3 JOB CONDITIONS

A. Existing Utilities:

1. There now exists in the construction areas, waterworks, storm drainage, paving, telephone cables, electrical power cables and other utilities.

2. Approximate location of certain underground lines and structures are shown on the plans for information only, other underground lines or structures are not shown.

3. Locate these and other possible unknown utility lines using electronic pipe finder, or other approved means.

4. Locate, excavate and expose all existing underground lines in advance of trenching operations.

5. The Contractor will be held responsible for the workmanlike repair of any damage done to any of these utilities in the prosecution of his work under this Section.

6. The Contractor shall familiarize himself with the existing conditions and be prepared to adequately care for and safeguard himself and the Owner from damage.

B. Notification of intent to excavate:

1. South Carolina Underground Utility Damage Prevention Act requires persons to ascertain the location of underground public utility property prior to excavation or demolition in certain situations. The Act also requires such persons to give timely notice of intent to excavate or demolish prior to commencing such operations. Failure to comply could subject the violater to a civil penalty.

2. Notification of intent to excavate may be given by calling 811 at least 72 hours prior to beginning work. Verify that existing utilities have been located prior to beginning work.

C. Protecting trees, shrubbery and lawns:

1. Trees, shrubbery and lawns in developed areas and along the trench line shall only be disturbed when absolutely necessary, and then subject to the approval of the Engineer.

a. Any such trees and shrubbery necessary to be removed and where possible shall be heeled in and replanted.

D. Clearing:

1. Perform all clearing necessary for installation of the complete work.

2. All surplus materials shall be completely disposed of in a satisfactory manner.

E. Restoration of disturbed areas:

1. Restore all areas disturbed by, during or as a result of construction activities to their existing or better condition.

PART 2 - PRODUCTS

2.1 EXCAVATED MATERIALS

A. Perform all excavation of every description and of whatever substances encountered to depths indicated or specified.

B. Pile material suitable for backfilling in an orderly manner at safe distance from banks of trenches to avoid overloading and to prevent slides or caveins.

C. Remove and deposit unsuitable or excess materials as directed by the Engineer.

2.2 BACKFILL MATERIALS

A. Provide from materials excavated for installation of utility.

1. Select soil material free from organic matter and deleterious substances, containing no rocks or lumps over 2 inches in greatest dimension for backfill up to 12 inches above top of utility being covered.

2. Do not permit rocks larger than 2 inches in greatest dimension in top 6 inches of backfill.

2.3 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

PART 3 - EXECUTION

3.1 PROCEDURES

A. Existing Utilities:

1. Unless shown to be removed, protect active utility lines shown on the drawings or otherwise made known to the Contractor prior to trenching. If damaged, repair or replace at no additional cost to the Owner.

2. If active utility lines are encountered and are not shown on the Drawings or otherwise made know to the Contractor, promptly take necessary steps to assure that service is not interrupted.

3. If service is interrupted as a result of work under this Section, immediately restore service by repairing the damage utility at no additional cost to the Owner.

4. If existing utilities are found to interfere with the permanent facilities being constructed under this Section, immediately notify the Engineer and secure his instructions.

5. Do not proceed with permanent relocation of utilities until written instructions are received from the Engineer.

B. Protection of persons and property:

1. Barricade open holes and depressions occurring as part of the Work, and post warning lights on property adjacent to or with public access.

2. Operate warning lights during hours from dusk to dawn each day and as otherwise required.

3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, laterial movement, washout and other hazards created by operations under this Section.

4. Install silt fences, hay bale barriers or sediment traps as required to limit erosion of excavated materials and excavated areas. Restore any eroded areas to preconstruction conditions.

5. Conform to Phasing and Safety Plan of the drawings.

D. Dewatering:

1. Remove all water, including rain water, encountered during trench and sub-structure work to an approved location by pumps, drains, and other approved methods.

2. Keep trenches and site construction area free from water.

E. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.

F. Maintain access to adjacent areas at all times.

3.2 TRENCH EXCAVATION (Unclassified)

A. Remove all materials of whatever substance encountered.

B. Where trenching occurs in existing lawns, remove turf in sections and keep damp. Replace turf upon completion of the backfilling.

C. Open cut:

1. Excavate for utilities by open cut.

2. If conditions at the site prevent such open cut, and if approved by the Engineer, tunneling may be used.

3. Short sections of a trench may be tunneled if, in the opinion of the Engineer, the conduit can be installed safely and backfill can be compacted properly into such tunnel.

4. Remove boulders and other interfering objects, and backfill voids left by such removals, at no additional cost to the Owner.

5. Remove wet or otherwise unstable soil incapable of properly supporting the utility, as determined by the Engineer, to depth required and backfill to proper grade with stone bedding material, at no additional cost to the Owner.

6. Excavating for appurtenances:

a. Excavate for manholes and similar structures to a distance sufficient to leave at least 12" clear between outer surfaces and the embankment or shoring that may be used to hold and protect the banks.

b. Overdepth excavation beyond such appurtenances that has not been directed will be considered unauthorized. Fill with sand, gravel, or lean concrete as directed by the Engineer, and at no additional cost to the Owner.

D. Trench to the minimum width necessary for proper installation of the utility, with sides as nearly vertical as possible. Accurately grade the bottom to provide uniform bearing for the utility.

E. Provide sheeting and shoring necessary for protection of the Work and for the safety of personnel.

1. Remove in units when level of backfilling has reached the elevation necessary to protect the utility work and adjacent property.

F. Depressions:

1. Dig bell holes and depressions for joints after the trench has been graded. Provide uniform bearing for the pipe on prepared bottom of the trench.

2. Except where rock is encountered, do not excavate below the depth indicated or specified.

3.3 BACKFILLING

A. General:

1. Backfill trenches and excavations immediately after the pipes are laid, unless other protection is directed or indicated.

2. Select and deposit backfill materials with special reference to the future safety of the pipes.

3. Reopen trenches which have been improperly backfilled, to a depth as required for proper compaction. Refill and compact as specified, or otherwise correct to the approval of the Engineer.

4. Surplus material shall be disposed of as directed by the Engineer.

5. Original surface shall be restored to the approval of the Engineer.

B. Lower portion of trench:

1. Deposit approved backfill and bedding material in layers of 6" maximum thickness, and compact with suitable tampers to the density of the adjacent soil.

2. Take special care in backfilling and bedding operations not to damage pipe and pipe coatings.

3.5 MEASUREMENTS AND PAYMENTS

A. No measurement or direct payment will be made for the Work under this Section and all costs for same shall be included in the price bid for the utility line to which it pertains.

END OF SECTION 02222-5

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included: Provide cast-in-place concrete, including formwork and reinforcement, where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Comply with "Specifications for Structural Concrete for Buildings", ACI 301, except as may be modified herein.

C. Do not commence placement of concrete until mix designs have been reviewed and approved by the Engineer and all governmental agencies having jurisdiction.

PART 2 - PRODUCTS

2.1 FORMS

A. General

1. Design, erect, support, brace and maintain formwork so it will safely support vertical and lateral loads which might be applied until such loads can be supported safely by the concrete structure.
2. Construct forms to the exact sizes, shapes, lines and dimensions shown, and as required to obtain accurate alignment, location, grades, level and plumb work in the finished structure.
3. Provide formwork sufficiently tight to prevent leakage of cement paste during concrete placement. Solidly butt joints and provide backup material at joints as required to prevent leakage and prevent fins.

B. Form Construction

1. Construct forms in conformance with ACI 347.
2. Provide for openings, offsets, keyways, recesses, moldings, reglets, chamfers, blocking, screeds, bulkheads, anchorages, inserts and other features as required.
3. Hold inner and outer forms for veritcal concrete together with combination steel ties and spreaders approved by the Engineer. Walls which are intended to be watertight shall have a waterstop as part of the tie.
4. Unless shown otherwise, provide 3/4" chamfer at all exposed edges of concrete.
5. Provide temporary openings in the formwork where necessary to facilitate cleaning and inspection of the formwork.
6. Coat form contact surfaces with approved form coating compound.
7. Do not allow excess form coating material to accumulate in the forms or to come in contact with surfaces which will bond to fresh concrete.
8. Side forms for footing may be omitted, and concrete may be placed directly against excavation only when requested by the Contractor and approved by the Engineer.
9. Provide 1/2" expansion material where concrete is placed against existing structure or as shown on drawings.

2.2 REINFORCEMENT

A. Comply with the following as minimums:

1. Bars: ASTM A615, Grade 60, unless otherwise shown on the Drawings, using deformed bars for Number 3 and larger;
2. Welded wire fabric: ASTM A185;
3. Bending: ACI 318.

B. Fabricate reinforcement to the required shapes and dimensions, within fabrication tolerances stated in the CRSI "Manual of Standard Practices".

C. Do not use reinforcement having any of the following defects:

1. Bar lengths, depths, or bends exceeding the specified fabricating tolerances;
2. Bends or kinks not indicated on the Drawings or required for this Work;
3. Bars with excessive rust, scale, dirt, oil or other defects which will reduce the bond or the effective cross section of the bar.

D. Furnish all support bars, tie bars, chairs, bolsters, etc. required for properly supporting and spacing bars in the forms.

1. For slabs on grade, provide slab bolsters with plate.

2.3 CONCRETE

A. Comply with the following as minimums:

1. Portland cement: ASTM C150, Type I or II, low alkali,
2. Aggregate, general:

a. ASTM C30, uniformly graded and clean;
b. Do not use aggregate known to cause excessive shrinkage.
3. Aggregate, course: Crushed rock or washed gravel with minimum size between 3/4" and 1-1/2", with a maximum size number 4.
4. Aggregate, fine: Natural washed sand of hard and durable particles varying from fine to particles passing a 3/8" screen, of which at least 12% shall pass a 50-mesh screen.
5. Water: Clean and potable.

B. Provide the following 28 days strengths as minimum:

1. All structural concrete except as indicated in 2 and 3 below:	4000 psi
2. All sidewalks, curbs and gutters, and unreinforceed foundations:	3000 psi
3. Thrust blocking, backfill or encasement for piping, and concrete fill:	2500 psi

C. Concrete for all structures containing water or other liquid, or resisting hydrostatic pressure, shall conform to the following:

1. 28 day compressive strength shall be 4000 psi.
2. The maximum water/cement ratio shall be no greater than 0.50 by weight.
3. Entrained air shall be 5% plus or minus 1% for concrete with a maximum course aggregate size of 1-1/2" and shall be 6% plus or minus 1% for concrete with a maximum course aggregate size of 1" or less.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

B. Water, ,mud, organic and other detrimental material shall be removed from excavations before concrete is deposited.

3.2 REINFORCING

A. Comply with the following, as well as the specified standards, for details and methods of reinforcing placement and supports.

1. Clean reinforcement and remove loose dust and mill scale, earth, and other materials which reduce or destroy bond with concrete.
2. Postion, support, and secure reinforcement against displacement by forms, construction, and the concrete placement operations.
3. Place reinforcement to obtain the required coverages for concrete protection.
4. Install welded wire fabric in as long lengths as practicable, lapping adjoining pieces one full mesh minimum.
5. Splices in reinforcement steel shall be in accordance with the latest revision of the American Concrete Institute "Building Code Requirements for Reinforced Concrete" (ACI 318), unless shown otherwise on the drawings.

a. All splices at wall corners or intersections and at wall and foundation intersections shall be Class C tension splices.
b. All other splices of vertical or horizontal steel in walls shall be Class B or C tension splices as per ACI-318.
c. Horizontal ring steel in circular, non prestressed concrete tanks shall lap 40 bar diameters and the splices shall be staggered so that no more than 50% of the bars are spliced at any one location.
d. All welded or mechanical splicing devices shall develop 125% of the yield strength of the bar.

3.3 EMBEDDED ITEMS

A. Set all required embedded items in the concrete, accurately secured so they will not be displaced, and in the precise locations needed.

3.4 PLACING CONCRETE

A. Mixing:

1. Transit mix the concrete in accordance with provisions of ASTM C94.
2. Do not use concrete that is not placed within 1-1/2 hours after water is first introduced into the mix.

B. Conveying:

1. Perform concrete placing at such a rate that concrete which is being integrated with fresh concrete is still plastic.
2. Deposit concrete as nearly as practicable in its final location so as to avoid separation due to rehandling and flowing.
3. Do not use concrete which becomes non-plastic and unworkable, or does not meet required quality control limits, or has been contaminated by foreign materials.

D. Placing concrete in forms:

1. Deposit concrete in horizontal layers not deeper than 24", and avoid inclined construction joints.

E. Placing concrete slabs:

1. Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.
2. Bring slab surfaces to the correct level with a straight edge, and then strike ooff.
3. Use bullfloats or darbies to smooth the surface, leaving the surface free from bumps and hollows.
4. Do not sprinkle water on the plastic surface. Do not disturb the slab surface prior to start of finishing operations.

F. Consolidation:

1. Consolidate each layer of concrete immediately after placing, by use of internal concrete vibrators, hand spading, rodding, or tamping.
2. Do not vibrate forms of reinforcement.
3. Do not use vibrators to transport concrete inside the forms.

G. Do not disturb or remove forms until the concrete has hardened sufficiently to permit form removal with complete safety. Do not remove shoring until the member has acquired sufficient strength to support its own weight, the load upon it, and the added load of construction.

H. Beginning immediately after placement, protect concrete from premature drying, excessively hot and cold temperatures, and mechanical injury.

I. Provide control joints as shown on the drawings.

3.5 REMEDIAL WORK

A. Repair or replace deficient work as directed by the Engineer and at no additional cost to the Owner.

3.6 MEASUREMENT AND PAYMENT

A. No measurement of direct payment will be made for the work under this Section and all costs for same shall be included in the price bid for the item in which the concrete work is an integral part.

END OF SECTION

SECTION 11050
AIRPORT FUEL SYSTEMS

1.0 GENERAL

1.1 The work under this section consists of furnishing all labor, materials, equipment, and all other items necessary for the complete and approved installation of a complete airport self-serve fuel system including one 6,000 gallon aviation gas tank, one 6,000 gallon Jet A fuel tank and appurtenant equipment as indicated on the Drawings and as specified herein.

1.2 Quality Assurance.

1. All work shall be performed by experienced personnel properly trained and licensed for the various trades.

1.3 References. The publications listed below form part of this Specification to the extent referenced or as applicable for the various components of the materials and work . All publications shall be the latest applicable edition.

1. American Institute of Steel Construction (AISC):
   Manual of Steel Construction

2. American National Standards Institute (ANSI):
   Standards as appropriate for materials or processes used.

3. American Society of Testing and Materials (ASTM):
   Standards as appropriate for materials or processes used.

4. American Welding Society (AWS):
   Standards as appropriate for materials or process used.

5. Steel Structures Painting Council (SSPC):
   Standards as appropriate for materials or process used.

6. National Fire Protection Association (NFPA):
   Standards as appropriate for materials or process used including the following: NFPA 70, NFPA 30A, NFPA IFC, NFPA 407

7. American Petroleum Institute (API):
   Standards as appropriate for materials or process used.

1.4 Tank System Design:

1. Tank systems to be complete turn-key systems including storage tanks, pumps, piping, controls, filters, dispenser, self-serve terminal, miscellaneous equipment, labeling, system drawings and schematics, etc. in compliance with listed standards and typical of first class aviation self-serve fueling systems. Provide all required equipment and fabrication whether specifically listed or not.

1.5 Submittals.

1. Shop Drawings: Submit shop drawings to the Engineer for approval. Submittals shall include complete plans, specifications, equipment details., manuals, schematics, etc. to demonstrate compliance with the plans and specifications.

1.6 Operation and Maintenance Manuals.

1. Provide three bound and one electronic pdf copy of complete operation and maintenance manuals for the systems supplied. Include as-built drawings, complete list of materials, component manufacturer's data sheets and maintenance manuals and overall system operation and safety data.

1.7 Commissioning and Training.

1. Provide system manufacturer's personnel as required for initial commissioning and setup for the fueling systems. Once operational, provide one day of on-site training of Airport personnel. Provide 72 hour notice for scheduling of training.

1.8 Delivery, Storage and Handling.

1. Deliver, store and handle all tank and equipment items in a safe and appropriate manner as recommended by the system manufacturer. All damaged items shall be replaced by the Contractor at no additional cost to Owner.

2.0 PRODUCTS

2.1 100/30 GPM – JET A SELF-SERVE SYSTEM

Furnish and install one 6,000 gallon UL-2085 rated double wall canopy design tank with the following equipment:

Equipment list is to be construed as minimum requirements. Provide all items necessary to comply with the intent of these specifications and in conformance with applicable regulations.

2.1.1 Tank details:

1. UL-2085 double walled 6,000 gallon tank.
2. Shop air tested at 3-5 psi using double wall testing procedures
3. All equipment including fill and suction from tank are located inside equipment area with spill containment of 250 gallons
4. Tank interior to be sandblasted to SSPC-SP10 epoxy lined using International Interline 850
5. Tank exterior including steel fuel pipe/fittings, fabrication steel are sandblasted to SSPC-SP6. Paint with International Devguard 4360 primer, International Devthane 379K1000 white urethane gloss enamel
6. Ladder on tank rear head “OSHA compliant” for access to interstitial space visible monitor
7. Tank to be equipped with box skid supports, 24″ manway, top lifting lugs, 4-anchor points
8. Tank size: 96″ Dia, 22′-3" long including 72″ canopy/equipment area

2.1.2 Equipment details:

1. Automatic high-level shut-off system at 95% tank capacity with pre-check
2. Aluminum floating suction with stainless steel test cable
3. Floating suction swivel
4. Floating suction check valve

5. 8″emergency fire vents (primary & secondary)
6. Updraft vent with stainless steel vent riser 12′ above grade
7. 2″ manual tank gauge hatch
8. Interstitial space visible monitor
9. Buna lug type butterfly shut-off valves API-609
10. N/O, 120VAC solenoid anti-siphon valve with Viton seals
11. Ground level reading tank gauge with high level alarm at 90% tank capacity
12. Gorman Rupp fuel pump with explosion proof motor 230 volts 1 phase or equal.
13. Filter Separator with air eliminator, pressure relief, differential pressure gauge 0-100 psi pressure gauge, water defense system, sample ports and stainless steel spring closed manual drain valve
14. 4″ camlock tank inlet adaptor with locking dust cover
15. Tank fill inlet check valve
16. Tank fill inlet strainer with stainless steel basket
17. Total Controls or equal register with 100:1 pulser, air eliminator/strainer (overwing fueling) (outbound refueler loading) (certified public sale) (self-serve)
18. Reelcraft (Nordic) or equal 115V electric rewind hose reel
19. 1"x 75' Aviation fueling hose API – 1529
20. OPW 295SACJ-0200 overwing nozzle
21. Two stage N/C 115VAC solenoid valve with Viton seals (self-serve fueling)
22. American spring rewind static grounding reel with 75′ stainless steel coated cable, military ground clip, stop assembly
23. Hand operated sump pump with stainless spring closed anti-siphon valve, all pipe and fittings 304 stainless steel”
24. Explosion proof NEMA 7-9 enclosure with size one motor starter and start-stop switch
25. Product piping before filter SCH40 A53 carbon steel, after filter SCH10 304/304L stainless steel
26. Unit set up to off-load transport at nominal 100 GPM and to fuel into-plane overwing at nominal 30 GPM. Fuel to be filtered in and out and recirculate
27. Provide side mounted ladder with deck platform for access to manual stick gage hatch and floating suction test cable.

2.2 100/30 GPM – AVGAS SELF-SERVE SYSTEM

Furnish and install one 6,000 gallon UL-2085 rated double wall canopy design tank with the following equipment:

Equipment list is to be construed as minimum requirements. Provide all items necessary to comply with the intent of these specifications and in conformance with applicable regulations.

2.2.1 Tank details:

1. UL-2085 6,000 gallon double walled tank
2. Shop air tested at 3-5 psi using double wall testing procedures
3. All equipment including fill and suction from tank are located inside equipment area with spill containment of 250 gallons
4. Tank interior sandblasted to SSPC-SP10 epoxy lined using International Interline 850
5. Tank exterior including steel fuel pipe/fittings, fabrication steel are sandblasted to SSPC-SP6. Paint with International Devguard 4360 primer, International Devthane 379K1000 white urethane gloss enamel
6. Ladder on tank rear head “OSHA compliant” for access to interstitial space visible monitor
7. Tank equipped with box skid supports, 24″ manway, top lifting lugs, 4-anchor points
8. Tank size: 96″ Dia, 22′-3" long including 72″ canopy/equipment area

2.2.2 Equipment details:

1. Automatic high-level shut-off system at 95% tank capacity with pre-check
2. Tank suction check valve
3. 8″emergency fire vents (primary & secondary)
4. 2" pressure/vacuum tank vent with stainless steel vent riser 12′ above grade
5. Stage I vapor recovery system
6. 2″ manual tank gauge hatch
7. Interstitial space visible monitor
8. Viton lug type butterfly shut-off valves API-609
9. N/O, 120VAC solenoid anti-siphon valve with Viton seals
10. Ground level reading tank gauge with high level alarm at 90% tank capacity
11. Gorman Rupp fuel pump with explosion proof motor 230 volts 1 phase
12. Filter Monitor with air eliminator, pressure relief, differential pressure gauge 0-100 psi pressure gauge, and stainless steel spring closed manual drain valve
13. 3″ camlock tank inlet adaptor with locking dust cover
14. Tank fill inlet check valve
15. Tank fill inlet strainer with stainless steel basket
16. Total Controls or equal 1/10 USG register with 100:1 pulser, air eliminator/strainer (overwing fueling) (outbound refueler loading) (certified public sale) (self-serve)
17. Reelcraft (Nordic) or equal 115V electric rewind hose reel
18. 1"x 75' Aviation fueling hose API – 1529
19. OPW 295SAC-0156 overwing nozzle
20. Two stage N/C 115VAC solenoid valve with Viton seals (self-serve fueling)
21. American spring rewind static grounding reel with 75′ stainless steel coated cable, military ground clip, stop assembly
22. Hand operated sump pump with stainless spring closed anti-siphon valve, all pipe and fittings 304 stainless steel”
23. Explosion proof NEMA 7-9 enclosure with size one motor starter and start-stop switch
24. Product piping before filter SCH40 A53 carbon steel, after filter SCH10 304/304L stainless steel
25. Unit set up to off-load transport at nominal 100 GPM and to fuel into-plane overwing at nominal 30 GPM. Fuel to be filtered in and out and recirculate
26. Provide side mounted ladder with deck platform for access to manual stick gage hatch and floating suction test cable.

2.3 Self Serve Credit Card Terminal:

1. Provide exterior rated, all weather, 24 hour operation self-serve credit card terminal capable of accepting Visa, MasterCard and Major Oil company credit cards. System to include QT Technologies Model M3000 Pro Terminal or equal with power and phone line surge suppresion, host printer and Pentium Class computer, Computer to have minimum 1 GB ram, 500 MB hard-drive, Windows 7 or equal operating system. Provide any supplemental supports, hoods, enclosures, wiring for exterior mounting and operation required.

3.0 EXECUTION

3.1 Factory Assembly: Units are to be factory assembled, prewired for field power and phone connections, pressure tested, primed and painted one color with all required labels, decals and signage.

3.2 MEASUREMENT AND PAYMENT

1. No separate measurement or direct payment will be made for this work and all costs for same shall be included in the price bid for the work to which is pertains.

END OF SECTION

Training:

SECTION 16300

ELECTRICAL

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Work included: Provide a complete electrical system as indicated on the Drawings, as specified herein, and as needed for a complete and proper installation including, but not necessarily limited to:

1. Feeder and branch circuit system in conduit.
2. Hangers, anchors, sleeves, chases, supports for fixtures, and other electrical materials and equipment in association therewith.
3. Wiring system, in conduit, for equipment, controls and communications provided under other sections of these Specifications or as shown on drawings furnished by others for connection under this contract.
5. Other items and work required to complete the electrical system whether specifically mentioned or not.

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workman who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.3 REFERENCES:

A. NFPA 70 National Electrical Code (NEC)
B. NFPA 101 Life Safety Code (LSC)

1.4 SUBMITTALS

A. Comply with pertinent provisions of Section 01340.

B. Manual: Upon completion of this portion of the Work and as a condition of its acceptance, deliver to the Engineer two copies of an operation and maintenance manual compiled in accordance with the provisions of Section 01730 of these Specifications. Include within each manual:

l. Copy of the approved Record Documents for this portion of the Work.

2. Copies of all circuit directories.

3. Copies of all warranties and guaranties.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01640.

1.5 RULES AND PERMITS

A. The entire installation shall be in accordance with the latest edition of the National Electrical Code, Occupational Safety and Health Act, and all local codes.

B. Apply and pay for all permits and inspections required by local and state laws.

C. Furnish the Owner with certificate of inspection and final approval from all authorities having jurisdiction.

1.7 DRAWINGS

A. The drawings and specifications are complementary to each other and what is called for by one shall be as binding as if called for by both. The drawings and diagrammatic and are to be followed as closely as the construction will permit.

B. The drawings show the general location of outlets, conduits and circuit arrangement. Because of the small scale of the drawings, it is not possible to indicate all of the detail involved. The Contractor shall carefully investigate the structural and finish conditions affecting all his Work and shall arrange such work accordingly. furnishing such fitting, junction boxes and accessories as may be required to meet such conditions.

PART 2 - PRODUCTS

2.1 GENERAL

A. Provide only materials that are new, of the type and quality specified. Where Underwriters' Laboratories, Inc. have established standards for such materials, provide only materials bearing the UL label. Materials called for are to be considered as standard which , however, implies no right on the part of the Contractor to substitute other materials and methods without written authority from the Engineer.

2.2 RACEWAYS

A. Raceways shall be only rigid metal conduit, intermediate metal conduit, schedule 40 or schedule 80 PVC for applications as allowed in the NEC.

B. Motor lead connections and connections to other electrical equipment subject to vibration, or where indicated, shall be flexible weatherproof type conduit with wrapping and cover factory assembled.

C. Provide conduit seals, rated and listed fittings, connections etc. as required by the NEC for hazardous environments.

D. Conduit straps, hangers and accessories shall be heavy-weight hot dipped galvanized.

2.3 CONDUCTORS

A. Conductors for power shall be 600 volt, 75 degrees C, Type THW, THWN, or XHHW. Sizes #12 and #10 shall be solid except that stranded shall be used where installed in flexible conduit. Sizes #8 and larger shall be stranded. Equipment grounding conductors shall be same type as specified above for circuit conductors.

B. Telephone and communications wiring to be as recommended by equipment supplier.

2.4 GROUNDING

A. Bushings for conduits 1" or larger shall be grounding type. Bond to ground bar or lug of enclosure.

B. Ground rods shall be 5/8" x 8' copperclad.

2.5 OUTLET BOXES

A. Interior boxes, extensions and rings shall be galvanized.

B. Interior boxes shall have covers or plaster rings as required.

C. All boxes that are installed exposed or exterior shall be cast or welded seam gasketed NEMA 4 type.

2.6 DEVICE PLATES

A. Plates shall be designed to fit the device or devices on which they are used and shall conform to the following finish requirements:

1. Flush devices in finished walls: Oversized (jumbo), 302 stainless steel.

2. Exposed outlets: Galvanized steel, raised cover with rounded edges.

2.7 SAFETY SWITCHES

A. Switches shall be heavy duty, quick make, quick break, with cover interlock.

B. Fuses shall be current limiting type, "Fusetron" or approved equal of Chase-Shawmut.

2.8 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

2.11 CONCRETE SUPPORT FOUNDATIONS

A. Install each free standing unit of electrical equipment on a 4" thick, 3000 psi wire mesh reinforced concrete pad or curb, unless otherwise noted on drawings.

2.12 MISCELLANEOUS MATERIALS

A. Support framing and channel shall be aluminum or stainless steel as manufactured by Unistrut, Kindorf, or equal.

B. All attachment hardware shall be stainless steel (bolts, nut washers, U-bolts, etc).

PART 3 - EXECUTION

3.I SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 PREPARATION

A. Coordination:

1. Coordinate as necessary with other trade to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

B. Data indicated on the Drawings and in these Specifications are as exact as could secured, but their absolute accuracy is not warranted. The exact locations, distances, levels, and other conditions will be governed by actual construction and the Drawings and Specifications should be used only for guidance in such regard.

C. Where outlets are not specifically located on the Drawings, locate as determined in the field by the Engineer. Where outlets are installed without such specific direction, relocate as directed by the Engineer and at no additional cost to the Owner.

3.3 TRENCHING AND BACKFILLING

A. Perform trenching and backfilling associated with the work of this Section in strict accordance with the provisions of Section 02221 of these Specifications.

3.4 CONDUCTORS

A. Install no conductor smaller than #12 AWG unless otherwise indicated. All conductors shall be copper. Conductors shall be as shown on the plans or as specified herein. All wiring shall be continuous from outlet to outlet, identified by color and marked with size, grade and manufacturer. Pull boxes shall not be considered outlets, and the wiring shall be continuos, without joints, through the pull boxes.

B. All branch circuits which exceed 100' at 120 volts and 200' at 277 volts from panel to load center shall be No. 10 minimum.

3.5 COLOR CODE AND MARKERS

A. All wiring shall be color coded in accordance with the National Electric Code.

B. Mark wires within panelboards with self-sticking label bearing the number corresponding to the circuit number on the drawings. Connect these wires to corresponding breaker in panel. Mark circuit numbers in outlet boxes only where color coding is repeated by having two or more wires of the same color.

C. Mark equipment, panelboards, cabinets, control devices, starters, switches, etc. by means of black, white core laminated nameplates having 1/4' engraved lettering. Description shall conform to designations on the drawings. Attach plates to equipment with stainless steel screws.

3.6 SPLICES AND CONNECTIONS IN WIRES AND CABLES

A. Low voltage (600 volts and below) conductors shall be joined securely both mechanically and electrically. Wire No. 8 and smaller shall be soldered and insulated with heat shrink and plastic electrical tape to provide insulation equal to the original conductor (approved pressure type mechanical connectors may be used). Wire No. 6 and larger shall be connected with compression type solderless connectors and insulated with heat shrink and plastic electrical tape to provide insulation equal to the original conductor.

3.7 RACEWAYS AND FITTINGS

A. All wiring shall be in raceways run concealed unless otherwise noted on drawings. Securely and rigidly support raceways at all boxes, outlets and turns, and not over 8 feet on centers.

B. Exposed raceways shall be installed either parallel or perpendicular to building walls. Raceways exposed on walls shall be perpendicular to the floor.

C. Raceways for future wiring shall have a nylon pull cord.

D. Ream raceways, butt ends into couplings; 3 quarter bends per run maximum; install no pull box in an inaccessible location; fasten raceway to boxes with locknuts and bushing.

E. Secure raceways in place and protect where necessary to prevent damage during construction. Plug ends of raceways to avoid filling with plaster, mortar or concrete.

F. In general, the raceway installation shall follow layout shown on the plans. However, this layout is diagrammatic only, and where changes are necessary due to structural conditions, other apparatus or other causes, such changes shall be made without any additional cost to the Owner. Offsets in conduits are not indicated and must be furnished as required.

G. All raceways underground and exterior to the building shall be installed a minimum of 24" below grade unless otherwise noted.

J. Provide necessary sleeves and chases where conduits pass through floors and walls, and provide other necessary openings and spaces, arranging for in proper time to prevent unnecessary cutting in connection with the Work. Perform cutting and patching in accordance with the provisions for the original Work.

K. Seal all underground conduits at electrical equipment with duct seal.

3.8 GROUNDING

A. Particular attention is directed to Article No. 250 of the National Electrical Code. The electrical system and motors shall be grounded and bonded in accordance with this article.

3.9 OUTLET BOXES

A. All boxes shall be sized in strict accordance with Article No. 370 of the National Electrical Code, except that no box will be less than the minimum specified.

3.10 TESTING AND INSPECTION

A. Provide personnel and equipment, make required tests, and secure required approvals from the Engineer and governmental agencies having jurisdiction.

3.11 HAZARDOUS LOCATIONS

A. Wiring and equipment in hazardous locations, as defined by the National Electrical Code, shall conform to the special requirements of the National Electrical Code, unless otherwise indicated or specified.

3.15 CLEANING AND PAINTING

A. On completion of the electrical work, all debris, scraps and other waste material left by this Contractor shall be collected and removed from the premises. All trench work shall be well tamped, leveled and excess dirt and debris removed to site dump, when and as directed by the Engineer. All electrical equipment, lighting fixtures, exposed conduit, enclosures and boxes shall be thoroughly cleaned of all foreign materials.

3.18 MEASUREMENT AND PAYMENT

A. No separate measurement or direct payment will be made for this work and all costs for same shall be included in the price bid for the work to which is pertains.

END OF SECTION