



Savannah Airport Commission

Bidding & Contract Documents,
General Conditions, & Technical
Specifications for

Special Inspections and Quality Assurance
Testing
for

Fuel Storage Facility Expansion

SAC JOB ID: 30619

October 2023



SAVANNAH AIRPORT COMMISSION

SPECIAL INSPECTIONS & QUALITY ASSURANCE TESTING for SAC 30619 FUEL STORAGE FACILITY EXPANSION

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SAVANNAH AIRPORT COMMISSION

NOTICE TO BIDDERS

Sealed proposals will be received by the Mayor and Aldermen of the City of Savannah and the Savannah Airport Commission in the office of the SAC Engineering Department, 400 Airways Ave., Third Floor, Savannah, GA 31408 until **Tuesday, October 10, 2023, at 1:30 pm EST**, at which time and place all proposals received will be opened and read aloud.

Bidders are invited to submit proposals for:

Special Inspections and Quality Assurance Testing for Fuel Storage Facility Expansion SAC Job ID 30619

Bidders are invited to submit proposals for this work on the proposal forms provided. Other proposal forms will not be accepted.

The complete examination and understanding of the construction plans, specifications, contract documents and site of the proposed work is necessary to properly submit a proposal. Construction plans, specifications and contract documents are available for examination and may be obtained from the offices of the Savannah Airport Commission, (912)964-0514.

No Bid Bond will be required.

The Savannah Airport Commission, in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that, in any contract entered into pursuant to this advertisement, Disadvantaged Business Enterprises will be afforded equal opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

The Contractor agrees to ensure that Disadvantaged Business Enterprises as defined in 49 CFR Part 26 have an equal opportunity to participate in the performance of this contract. In this regard all Testing Laboratory's shall take all necessary and reasonable steps to ensure that Disadvantaged Business Enterprises have an equal opportunity to compete for and perform contracts. Testing Laboratory's shall not discriminate on the basis of race, color, or national origin or sex in the award or performance of this contract.

No bid may be withdrawn after closing time for the receipt of proposals for a period of ninety (90) days.

This is a bid for construction and therefore the City's local vendor preference ordinance will not apply.

The Mayor and Aldermen of the City of Savannah and the Savannah Airport Commission reserve the right to waive any informalities or irregularities in or reject any or all bids and to award or refrain from awarding the Contract for the Work.

SAVANNAH AIRPORT COMMISSION

INSTRUCTIONS TO BIDDERS

I. GENERAL

- A. Licenses. The successful Bidder must be a licensed Contractor as required by the Georgia State Licensing Board and will be required to obtain any and all necessary licenses or permits to conduct the work as may be prescribed by the State of Georgia and by the City of Savannah.
- B. Testing Lab Accreditation. All federally funded construction projects costing \$250,000 and more require that the testing laboratory be accredited in accordance with AC 150/5370-10H, dated December 21st, 2018.
- C. Examination of Conditions Affecting Work. Prior to submitting a Proposal, each Bidder shall examine and thoroughly familiarize himself with all existing conditions including all applicable laws, codes, ordinances, rules and regulations that will affect his work. Bidders shall visit the site, examine the grounds and all existing buildings, utilities, and roads, and shall ascertain by any reasonable means all conditions that will in any manner affect the work. The drawings have been prepared on the basis of surveys and inspections of the site and represent an essentially accurate indication of the physical conditions at the site. This, however, shall not relieve the Bidders of ascertaining for themselves the conditions or expected site conditions for construction of the project. The Owner will not be responsible for any unforeseen conditions of the site encountered during construction.
- D. Nondiscrimination and Segregated Facilities
 - 1. Bidders must comply with the President's Executive Order No. 11246, amended by 13672 on July 21, 2014, which prohibits discrimination in employment regarding race, creed, color, sex or national origin.
 - 2. Each Bidder shall complete, sign and include in his Bid Proposal the Equal Opportunity Report Statement. When a determination has been made to award a Contract to a specific Contractor, such Contractor shall, prior to award, after award or both, furnish such other pertinent information regarding his own employment policies and practices as well as those of his proposed subcontractors as the FAA, or the Secretary of Labor, the City of Savannah or the Savannah Airport Commission may require. All such information required of a subcontractor shall be furnished by the Contractor.
 - 3. The Equal Opportunity Report Statement, Certification of Non-segregated Facilities, Equal Opportunity Clause, and all other EEO requirements shall be included in all non-exempt subcontracts entered into by the Contractor. Subcontracts entered into by the Contractor shall also include all other applicable labor provisions. No subcontract shall be awarded to a non-complying subcontractor.

4. In addition, the Contractor will also insert in each of his subcontracts a clause requiring the subcontractor to include these provisions in any lower tier subcontracts that may in turn be made.

E. Compliance with Law

1. Bidders must comply with Title IV of the Civil Rights Act of 1964, the Davis-Bacon Act, the Anti-Kickback Act and the Contract Work Hours Standard Act.
2. Bidders shall comply with all state laws and local ordinances, except that any preferential consideration of local in-state bidders is not allowed.
3. Employment Eligibility Verification

Pursuant to the “Georgia Security and Immigration Compliance Act of 2006,” O.C.G.A. Section 13-10-91, public employers and their contractors and subcontractors are required to verify the work eligibility of all newly hired employees through an electronic federal work authorization program. The Georgia Department of Labor has added a new Chapter 300-10-1, entitled “Public Employers, Their Contractors and Subcontractors Required to Verify New Employee Work Eligibility Through a Federal Work Authorization Program,” to the Rules and Regulations of the State of Georgia.

(See website: http://www.dol.state.ga.us/pdf/rules/300_10_1.pdf.)

The new rules designate the “Employment Eligibility Verification (EEV) Basic Pilot Program” operated by the U. S. Citizenship and Immigration Services Bureau of the U. S. Department of Homeland Security as the electronic federal work authorization program to be utilized for these purposes.

The EEV/Basic Pilot Program can be accessed at: <https://www.vis-dhs.com/EmployerRegistration>. Bidders shall comply with this new rule, and submit with their bid the form titled, “Contractor Affidavit and Agreement”, page I-3. After the contract has been awarded, the Contractor shall secure from all subcontractors the form titled “Subcontractor Affidavit and Agreement”, page I-4, which must be submitted to the Savannah Airport Commission prior to the subcontractor beginning work at the site.

CONTRACTOR AFFIDAVIT AND AGREEMENT

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm, or corporation which is contracting with the Savannah Airport Commission has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603], in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services pursuant to this contract with the Savannah Airport Commission, contractor will secure from such subcontractor(s) similar verification of compliance with O.C.G.A. 13-10-91 on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or a substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the Savannah Airport Commission the time the subcontractor(s) is retained to perform such service.

Company Name

EEV/Basic Pilot Program* User Identification No.

Signature: Authorized Officer or Agent

Date

Printed Name of Authorized Officer or Agent

Title of Authorized Officer or Agent of Contractor

SUBSCRIBED AND SWORN BEFORE ME

ON THIS THE _____ DAY OF _____, _____.

Notary Public: _____

(Notary Seal)

My Commission Expires: _____

* As of the effective date of O.C.G.A. 13-10-91, the applicable federal work authorization program is the "EEV/Basic Pilot Program" operated by the U. S. Citizenship and Immigration Services Bureau of the U. S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA).

SUBCONTRACTOR AFFIDAVIT

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with _____ on behalf of the Savannah Airport Commission has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603], in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

Company Name

EEV/Basic Pilot Program* User Identification No.

Signature: Authorized Officer or Agent

Date

Printed Name of Authorized Officer or Agent

Title of Authorized Officer or Agent of Contractor

SUBSCRIBED AND SWORN BEFORE ME

ON THIS THE _____ DAY OF _____, _____.

Notary Public: _____

(Notary Seal)

My Commission Expires: _____

* As of the effective date of O.C.G.A. 13-10-91, the applicable federal work authorization program is the "EEV/Basic Pilot Program" operated by the U. S. Citizenship and Immigration Services Bureau of the U. S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA).

G. General Bond Requirements

1. No Bid Bonds required.

II. PREPARATION AND SUBMISSION OF PROPOSALS

- A. Proposals for the material testing and quality control of the project will be received until **1:30 PM**, local time, on **Tuesday, October 10, 2023**. Proposals shall be delivered to the **Savannah Airport Commission Engineering Department, 400 Airways Ave., Third Floor, Savannah, GA 31408**.
- B. The Proposal shall be on the "Proposal Form" provided; no other forms are acceptable.
- C. Each Bidder shall present his Proposal in a sealed opaque envelope and marked at the lower left hand corner: ***"SAC 30619 – SPECIAL INSPECTIONS & QUALITY ASSURANCE TESTING FOR THE FUEL STORAGE FACILITY EXPANSION"***
- D. The Bidder's envelope shall contain the signed original and one complete copy of the following documents:
 1. Bidder's Checklist
 2. Proposal Form
 2. Bid Schedule
 3. Equal Employment Opportunity Report Statement
 4. Certificate of Non-Segregated Facilities
 5. Bidder Qualification Questionnaire
- E. Proposals shall be submitted as indicated by the "Proposal Form" and shall be signed in ink by an official of the firm submitting the proposal.
- F. Erasures or other changes in a Proposal shall be explained or noted over the signature of the Bidder.
- G. Proposals containing reservations, conditions, omissions, unexplained erasures or alterations, items not required in the Bid, or irregularities of any kind, may be rejected by the Owner as being incomplete and not qualified for consideration.
- H. Each proposal shall indicate the full business name and address of the Bidder and shall be signed by him with the usual signature.
- I. A Proposal submitted by a partnership shall list the names of all partners and shall be signed in the partnership name by one of the members of the partnership.

- J. A Proposal submitted by a Corporation shall be signed by the legal name of the Corporation, followed by the state of incorporation and the title designation of the Corporation in legal matters. The name of each person signing the proposal shall be typed or printed below the signature.
- K. A Power of Attorney or other satisfactory evidence of the authority of the officer signing on behalf of the Corporation shall be furnished for the Owner's records.
- L. The Bidder is required to fill in all the blank spaces on the Proposal and Bid Schedule.

III. MODIFICATIONS AND/OR WITHDRAWALS OF PROPOSALS

- A. A bid may not be modified, withdrawn, or canceled by the Bidder during a ninety (90) calendar day period following the time and date designated for the receipt of Bids, and each Bidder so agrees in submitting his bid.
- B. Negligence on the part of the Bidder in the preparation of his Proposal shall not be grounds for the modification or withdrawal of a Proposal after the time set for Bid opening.

IV. ACCEPTANCE/REJECTION OF BIDS

- A. This is a bid for material testing and quality control and therefore the City's local vendor preference ordinance will not apply.
- B. The Owner proposes to award the Contract to the lowest qualified Bidder, submitting a reasonable bid.
- C. The Mayor and Aldermen of the City of Savannah and the Savannah Airport Commission reserve the right to waive any informalities, irregularities, or technicalities in or reject any and all bids and/or to award or refrain from awarding the Contract for the Work.

SAVANNAH AIRPORT COMMISSION

BIDDER'S CHECKLIST

THIS CHECKLIST **MUST** BE ATTACHED AS THE COVER SHEET TO YOUR BID PRIOR TO SEALING YOUR BID AND SUBMITTING IT TO THE OFFICE OF THE PURCHASING DIRECTOR. IF THIS CHECKLIST IS NOT ATTACHED, YOUR BID WILL BE DISQUALIFIED. IF THIS CHECKLIST IS INCOMPLETE OR IF ANY ITEM CANNOT BE VERIFIED AS BEING INCLUDED WITH YOUR BID, YOUR BID WILL BE DISQUALIFIED.

NAME OF BIDDER:	
ADDRESS (STREET, UNIT):	
ADDRESS (CITY, STATE, ZIP):	
PHONE NUMBER:	
EMAIL ADDRESS:	

INSTRUCTIONS TO BIDDERS

The contents of your bid package must be clearly marked and submitted **IN THE FOLLOWING ORDER**: Please place a check mark in the appropriate space and indicate the number of addendums received:

- 1) Addendum received? Yes ☐ No ☐
Indicate number of addendums received: _____
- 2) Are all signature pages of the bid proposal signed? Yes ☐ No ☐
- 3) Total Amount of Bid: \$ _____

IF THE FOLLOWING DOCUMENTS ARE NOT COMPLETED AND ENCLOSED WITH THE BID PACKAGE, THE BID MAY BE DISQUALIFIED. CHECK APPROPRIATE SPACE:

- | | | |
|---------------------------------------------|------------------------------|-----------------------------|
| 1. Bidder's Checklist | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 2. Proposal Form | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 3. Bid Schedule | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 4. Equal Employment Opportunity Statement | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 5. Certificate of Non-Segregated Facilities | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

Certified By: _____
(Name) (Title)

(Signature)

FOR COMMISSION USE ONLY

Verification of Bid Package Content:

1) Addendum Received: Yes ☐ No ☐

Indicate number of addendums received: _____

2) Bid Proposal Pages Signed: Yes ☐ No ☐

I certify that the above items were/were not included with the attached bid at the time and place of the bid opening.

(Signature)

(Date)

(Printed Name)

(Title)

SAVANNAH AIRPORT COMMISSION

PROPOSAL FORM

TO: Mayor and Aldermen of the
City of Savannah and the
Savannah Airport Commission

FROM: _____
Bidder's Name

Address

City, State and Zip Code

Phone Number

E-mail Address

- A. The undersigned, as Bidder, does hereby declare that he has familiarized himself with the local conditions affecting the cost of the work, the Contract Documents including the "Notice to Bidders", "Instructions to Bidders", "Proposal", "Bid Schedule", "General Conditions," and the specifications and drawings and other related construction documents, together with any addenda to such construction documents as listed herein and hereby proposes to furnish all material and perform all work required in strict accordance with the provisions of documents noted above for the consideration of prices quoted in the "Bid Schedule."
- B. The undersigned understands that the quantities shown in the Bid Schedule are approximate only, are intended principally to serve as a guide in evaluating Proposals and are subject to either increase or decrease.
- C. The undersigned affirms that in making such Bid, neither he nor any company that he may represent, nor anyone on behalf of him or his company, directly or indirectly, has entered into any combination, collusion, undertaking or agreement with any other Bidder or Bidders to maintain the prices of said work, or any compact to prevent any other Bidder or Bidders from bidding on said contract or work and further affirms that such bid is made without regard or reference to any other Bidder or Proposal and without any agreement or understanding or combination, either directly or indirectly, with any other person or persons with reference to such bidding in any way or manner whatsoever.
- D. The undersigned, when notified of the acceptance of this Proposal, does hereby agree to enter into a construction contract with the Owner, within ten (10) calendar days from the date on the Notice of Acceptance, for the execution of the work described in the period of time.

E. In submitting this Bid, it is understood that the right is reserved by the Owner to waive formalities, technicalities, and irregularities, and to reject all Bids and to negotiate with apparent qualified low Bidder if necessary. It is agreed that THIS BID MAY NOT BE WITHDRAWN FOR A PERIOD OF NINETY (90) DAYS AFTER the opening thereof.

F. The undersigned affirms that he has completed all the blank spaces in the Bid Schedules with an amount in words and/or numbers and agrees that where a discrepancy occurs between the prices quoted in words and/or in numbers, the unit price written in words, unless obviously incorrect, shall take precedence and govern the final costs or Award of Contract. In the case of a tie Bid Price, the Owner may negotiate a price with each low tie Bidder.

G. The legal status of the undersigned is: (The Bidder shall complete appropriate portion of form (1., 2., or 3.) and strike out the other two.)

1. A corporation duly organized and doing business under the laws of the State of _____, for whom bearing official title of

_____, whose signature is affixed to this Bid, is duly authorized to execute contracts.

If a Foreign Corporation or non-State of Georgia Corporation: date of qualification in _____ (State).

Name and address of Agent for Process: _____
(Process in the State of Georgia): _____

(Out of State Testing Laboratory shall also provide name and address of process agent in the State of Georgia.)

2. A partnership, all of the members of which, with addresses are: (Designate general partners as such.)

If all partners are non-residents of Georgia: Designate name and address of agent required for service of process located in the state Georgia.

3. An individual, whose signature is affixed to this bid. (If non-residents of Georgia. (Designate name and address of agent required for service of process located in the state of Georgia.)

Dated and signed this _____ day of _____, 2023.

NAME OF BIDDER: _____

BY: _____

TITLE: _____

BUSINESS ADDRESS: _____

PHONE NO. () _____

GEORGIA TAX
REGISTRATION NO. _____

WITNESS: _____

FUEL STORAGE FACILITY EXPANSION - SAC JOB ID 30619				
QUALITY ASSURANCE TESTING				
BID SCHEDULE NO. 1				
TEST DESCRIPTION	QUANTITY	UNIT	UNIT RATE	TOTAL
1. P-501 CONCRETE MATERIALS:				
A. ASTM C 78 Flexural Strength*	10	Each		
B. Technician Standby Time	6	Hour(s)		
2. AGGREGATE TESTING: P-501 CONCRETE				
A. ASTM C 88 Sodium Soundness (Coarse Aggregate)	1	Test		
B. ASTM C 131 L.A. Abrasion (Coarse Aggregate)	1	Test		
C. ASTM C 88 Sodium Soundness (Fine Aggregate)	1	Test		
D. Grain Size Determination (Fine Aggregate)				
D-1. Full Grain Size (8 Sieves)	1	Test		
D-2. Wash Through (#200)	1	Test		
E. ASTM C 136 Sieve Analysis (Coarse Aggregate)	1	Test		
F. Specific Gravity & Absorption of Fine or Coarse Aggregate	1	Test		
3. P-306 LEAN CONCRETE BASE COURSE:				
A. ASTM C 39 Compressive Strength**	3	Each		
B. ASTM C 136 Sieve Analysis (Coarse Aggregate)	1	Test		
4. SOIL TESTING: P-152 EXISTING SUBGRADE & SELECT SAND				
A. ASTM D 1557 Proctor	3	Each		
B. ASTM D 6938 Nuclear Density (IN-SITU) ***	10	Each		
C. ASTM D 6938 Natural Sample Moisture Content (IN-SITU)	3	Each		
D. ASTM D 6938 Nuclear Density (Select Sand) ***	10	Each		
E. ASTM D 6938 Natural Sample Moisture Content (Select Sand)	3	Each		
F. ASTM C 136 Sieve Analysis (IN-SITU)				
F-1. Full Grain Size (8 Sieves)	1	Test		
F-2. Wash Through (#200)	1	Test		
G. Technician Standby Time	6	Hour(s)		
5. SOIL TESTING: BORROW MATERIAL				
A. ASTM D 1557 Proctor	2	Each		
B. ASTM C 136 Sieve Analysis				
B-1. Full Grain Size (8 Sieves)	1	Test		
B-2. Wash Through (#200)	2	Test		

6. D-705 POROUS BACKFILL (UNDERDRAIN)				
A. ASTM C 136 Sieve Analysis (Fine Aggregate)				
A-1. Full Grain Size (8 Sieves)	1	Test		
A-2. Wash Through (#200)	2	Test		
BID SCHEDULE NO. 1 - TOTAL:				
*Minimum of two (2) beams per sub-lot. The bid item should also include on-site air entrainment and slump tests.				
**Minimum of three (3) cylinders per 1200 sy placed. The bid item should also include on-site air entrainment and slump tests.				
*** Minimum of three (3) tests per visit.				
Standby time will be used at the discretion of the Savannah Airport and only if there is a delay caused by unforeseen circumstances. This time is not to be used for a basis of time compilation for scheduled trips to the site for testing. Technician time shall be included in the costs for each respective test.				
Each test shall also include all time for mileage, travel, administrative duties, reviews, material reports, and all other items associated with testing.				
Tests shall be taken as directed by SAC Engineering. This work is meant to provide Special Inspections & Quality Assurance Testing for the Fuel Storage Facility Expansion. Testing frequency shall be based on SAC Engineering guidelines.				

FUEL STORAGE FACILITY EXPANSION - SAC JOB ID 30619				
SPECIAL INSPECTIONS				
BID SCHEDULE 2				
MATERIAL/ACTIVITY	SERVICES	HOURS	UNIT RATE	TOTAL
1704.2 INSPECTION OF FABRICATORS				
1. Verify fabrication / quality control procedures. (In-Plant Review)	Periodic	16		
1705.3 CONCRETE CONSTRUCTION				
1. Inspect reinforcement, and verify placement.	Periodic	8		
2. Reinforcing Bar Welding:				
b. Inspect single-pass fillet welds, maximum 5/16", and	Periodic	8		
c. Inspect all other welds.	Continuous	8		
3. Inspection of Anchors & Cast-In-Place Concrete	Periodic	4		
4. Inspect anchors post-installed in hardened concrete members		4		
b. Mechanical anchors and adhesive anchors not defined in 4.a.	Periodic	4		
5. Verify Use of Approved Design Mix	Periodic	4		
6. Prior to placement, fresh concrete sampling, perform slump and air content tests and determine temperature of concrete and perform other tests as specified in construction documents	Continuous	8		
7. Inspect concrete placement for proper application techniques.	Continuous	4		
8. Verify Maintenance of Specified Curing Temperature & Techniques.	Periodic	8		
9. Inspection of Formwork [for shape, lines, location and dimensions]	Periodic	12		
1705.6 SOILS				
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity	Field Inspection	16		
2. Verify excavations are extended to proper depth and have reached proper material	Field Inspection	16		
3. Perform Classification and testing of compacted materials	Field Inspection	16		
4. Verify use of proper materials, densities, and lift thickness during placement of controlled fill	Field Inspection	16		
5. Prior to placement of controlled fill, inspect subgrade and verify that the site has been prepared properly	Field Inspection	16		
BID SCHEDULE 2 - TOTAL:				

SAVANNAH AIRPORT COMMISSION

BID SCHEDULE

In accordance with all bid documents, addenda, plans, and specifications, the undersigned proposes to furnish all services, material labor, tools, equipment, and other means of construction required for the **SPECIAL INSPECTIONS & QUALITY ASSURANCE TESTING FOR THE FUEL STORAGE FACILITY EXPANSION, SAC JOB ID 30619**

TOTAL AMOUNT BID: \$ _____

TOTAL AMOUNT BID WRITTEN IN WORDS: _____

NAME OF BIDDER: _____

BY: _____

TITLE: _____

BUSINESS: _____

ADDRESS: _____

WITNESS: _____

WITNESS: _____

SAVANNAH AIRPORT COMMISSION
EQUAL OPPORTUNITY REPORT STATEMENT
As Required By 41 CFR 60-1.7(b)

The Bidder (Proposer) shall complete the following statement by checking the appropriate boxes. Failure to complete these blanks may be grounds for rejection of bid:

1. The Bidder (Proposer) has _____ has not _____ developed and has on file at each establishment Affirmative Action Programs pursuant to 41 CFR 60-1.40 and 41 CFR 60-2.
2. The Bidder (Proposer) has _____ has not _____ participated in any previous contract or subcontract subject to the Equal Opportunity Clause prescribed by Executive Order 11246, as amended.
3. The Bidder (Proposer) has _____ has not _____ filed with the Joint Reporting Committee the annual compliance report on Standard Form 100 (EEO-1 Report).
4. The Bidder (Proposer) does _____ does not _____ employ fifty (50) or more employees.

NAME OF BIDDER: _____

BY: _____
(SIGNATURE)*

TITLE: _____

DATE: _____

** Must be same signature on Bid Proposal*

SAVANNAH AIRPORT COMMISSION

CERTIFICATE OF NON-SEGREGATED FACILITIES

CERTIFICATION TO BE SUBMITTED BY TESTING LABORATORY'S OF APPLICANTS AND THEIR SUBCONTRACTORS (APPLICABLE TO CONSTRUCTION CONTRACTS AND RELATED SUBCONTRACTS EXCEEDING TEN THOUSAND (\$10,000.00) DOLLARS (US) WHICH ARE NOT EXEMPT FROM THE EQUAL OPPORTUNITY CLAUSE.)

The federally assisted Testing Laboratory certifies that he does not maintain or provide, for his employees, any segregated facilities at any of his establishments and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted Testing Laboratory certifies that he will not maintain or provide, for his employees, segregated facilities at any of his establishments and that he will not permit his employees to perform their services at any location under his control, where segregated facilities are maintained. The federally assisted Testing Laboratory agrees that a breach of this certification is a violation of the equal opportunity clause in this contract. As used in this certification, the term "segregated facilities" means any waiting room, work areas, restrooms and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directives or are in fact segregated on the basis of race, color, religion, or national origin because of habit, local custom, or any other reason. The federally assisted Testing Laboratory agrees that (except where he has obtained identical certifications from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding ten thousand (\$10,000.00) dollars (US) which are not exempt from the provisions of the equal opportunity clause and that he will retain such certifications in his files.

Signature of Testing Laboratory Rep.

Title

Printed Name of Testing Laboratory Rep.

SAVANNAH AIRPORT COMMISSION

DISADVANTAGED BUSINESS ENTERPRISE REQUIREMENTS

THE FOLLOWING BID CONDITIONS APPLY TO THIS CONTRACT. SUBMISSION OF A PROPOSAL BY A PROSPECTIVE TESTING LABORATORY SHALL CONSTITUTE FULL ACCEPTANCE OF THESE BID CONDITIONS.

A. DEFINITION (49 CFR Part 26.5)

1. Disadvantaged Business Enterprise (DBE) as used in this Contract shall have the same meaning as those firms that are presumed to be socially and economically disadvantaged as defined in Paragraph 26.5, 49 CFR Part 26.
2. To review 49 CFR Part 26 in its entirety, go to www.osdbu.dot.gov. Select DBE Program, click on 49 CFR 26, and review the Federal Regulation.

B. POLICY

It is the policy of the Savannah Airport Commission that Disadvantaged Business Enterprises shall have an equal opportunity to participate in the performance of all contracts and subcontracts.

C. DBE OBLIGATION

All Bidders, Prospective Testing Laboratories, or Testing Laboratories shall take all necessary and reasonable steps to ensure that Disadvantaged Business Enterprises have an equal opportunity to compete for and perform contracts. Bidders, Prospective Testing Laboratories, or Testing Laboratories shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of Contracts.

D. COMPLIANCE

All Testing Laboratories or subcontractors for U.S. DOT-assisted contracts are hereby notified that failure to carry out the U.S. DOT policy and the DBE obligation, as set forth herein for this project, shall constitute a breach of contract which may result in termination of the contract or such other remedy as deemed appropriate by the Savannah Airport Commission. The Savannah Airport Commission has the right to revise these program specifications at any time before or during the project by addendum or amendment in order to comply with FAA Regulations and/or directives.

1. The Savannah Airport Commission has the right, at its sole discretion, to accept or reject any DBE participation (and/or percentage of) and accept or reject any good-faith efforts.

E. CONTRACT ASSURANCE (49 CFR Part 26.13[b])

The Testing Laboratory or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Testing Laboratory shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of U.S. DOT-assisted contracts. As outlined above, failure by the Testing Laboratory to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the Commission may deem appropriate.

F. SUBCONTRACT CLAUSES

These DBE Requirements shall be made a part of each agreement with all Testing Laboratories and subcontractors on U.S. DOT-assisted contracts.

G. CONTRACT AWARD ELIGIBILITY

1. Bidders, Prospective Testing Laboratories, or Testing Laboratories are hereby advised that meeting DBE subcontract goal or making a documented good-faith effort to meet such goal to the satisfaction of the Savannah Airport Commission in their sole discretion is a condition of being awarded this DOT-assisted contract.
2. The Savannah Airport Commission proposes to award the contract to the lowest responsive Bidder, Prospective Testing Laboratory, or Testing Laboratory submitting a reasonable bid provided the Bidder, Prospective Testing Laboratory, or Testing Laboratory has met the goal for DBE participation or, if failing to meet the goal, the Bidder, Prospective Testing Laboratory, or Testing Laboratory has documented an acceptable good-faith effort to meet the established goal for DBE participation. The Bidder, Prospective Testing Laboratory, or Testing Laboratory is advised that the Savannah Airport Commission at its sole discretion will determine whether or not the Bidder, Prospective Testing Laboratory, or Testing Laboratory has made an acceptable good-faith effort towards meeting the DBE goal to qualify for contract award. The Savannah Airport Commission has the right to reject any and all bids submitted and accept or reject any good-faith efforts.

H. SUBCONTRACT GOAL

1. The attainment of the goal established for this Contract is to be measured as a percentage of the total dollar value of the Contract.
2. The goal established for this Contract is as follows:

RACE-NEUTRAL – 0% TO BE PERFORMED BY DBEs

I. AVAILABLE CERTIFIED DBEs

1. This contract is subject to the certification procedures outlined in 49 CFR Part 26.81 – Unified Certification Program (UCP). The UCP is administered by the Georgia Department of Transportation (GDOT).
2. The Georgia Department of Transportation (GDOT) has developed a Disadvantaged Business Enterprise (DBE) Directory for the Unified Certification Program. The Directory is available by contacting the Georgia Department Transportation Civil Rights Office on line at www.dot.state.ga.us. The GDOT may be reached by telephone at (404) 631-1972.
3. According to 49 CFR Part 26.81, subparagraph (c) “all certifications by UCPs shall be pre-certifications; i.e., certifications that have been made final before the due date for bids or offers on a contract on which a firm seeks to participate as a DBE.”
4. For this contract, only those DBE firms that are certified under the UCP as administered by the GDOT shall be acceptable. Firms who desire certification, must complete the GDOT Uniform Certification Application in its entirety (as applicable), which can be obtained from the GDOT’s website: www.dot.state.ga.us. You may also contact the Georgia Department of Transportation Office at (404) 631-1972.

J. DBE PARTICIPATION COUNTED TOWARD GOAL (49 CFR Part 26.55)

Bidders, Prospective Testing Laboratories, or Testing Laboratories shall apply the standards outlined by 49 CFR Part 26.55 when determining how DBE participation is to be counted towards the goal on this contract. Please refer to www.osdbu.dot.gov. Select DBE Program, click on 49 CFR 26, and scroll to Part 26.55 – “How is DBE participation counted towards goal?”

K. BIDDER’S REQUIRED SUBMISSION

1. The following documents must include the information requested and be submitted with the Bid Proposal:
 - a. **DBE ASSURANCE FORM**
2. The following documents must include the information requested and be submitted with the Bid Proposal or within five (5) business days after bid opening.
 - a. **DBE SUBCONTRACTOR LIST**
 - b. **DBE NOTIFICATION OF INTENT TO SUBCONTRACT** for each DBE subcontractor.

L. GOOD-FAITH EFFORTS (49 CFR Part 26.53)

Good-faith efforts are required by the Bidder, Prospective Testing Laboratory, or Testing Laboratory when the DBE goal established for a contract is not met, or at any time during the contract when the achievement of the DBE goal is in jeopardy. The Bidder, Prospective Testing Laboratory, or Testing Laboratory is responsible for providing and/or indicating in writing to the satisfaction of the Commission all efforts that would demonstrate good faith in the solicitation of DBE participation for this contract. In the process of awarding the bid or at any time during the contract as outlined above, the Commission will evaluate the efforts of the Bidder, Prospective Testing Laboratory, or Testing Laboratory in accordance with 49 CFR Part 26, Appendix A and Part 26.53. The Commission's evaluation will focus on those efforts made prior to bid opening. The Commission reserves the right in its sole discretion to accept or reject any or all efforts by the Bidder, Prospective Testing Laboratory, or Testing Laboratory.

In order to review the efforts that will be considered acceptable by the Commission in accordance with Part 26, in its entirety, the Bidder, Prospective Testing Laboratory, or Testing Laboratory must refer to www.osdbu.dot.gov, 49 CFR Part 26, Section 26.109, "What are the rules governing information, confidentiality, cooperation, and intimidation or retaliation", then scroll down to Appendix A to Part 26 – "Guidance Concerning Good-Faith Efforts". Also, refer to Section 26.53 – "What are the good faith procedures recipients follow in situations where there are contract goals".

Examples of acceptable good-faith efforts in accordance with Part 26, in part, are as follows:

- a. Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform the work of the contract.
- b. Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved.
- c. Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- d. Negotiating in good faith with interested DBEs.
- e. Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities.
- f. Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Testing Laboratory.
- g. Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

- h. Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

M. ADMINISTRATIVE RECONSIDERATION (49 CFR PART 26.53)

Within two business days if being informed by the Savannah Airport Commission that it is not responsive because it has not documented sufficient good-faith efforts, a bidder/contractor may request administrative reconsideration. Bidder/contractor should make this request in writing to the following reconsideration official: Executive Director, 400 Airways Avenue, Savannah, GA 31408, Facsimile, 912-964-0877. The reconsideration official will not have played any role in the original determination that the bidder/contractor did not document sufficient good-faith efforts.

As part of this reconsideration, the bidder/contractor will have the opportunity to provide written documentation or argument concerning the issue of whether it met the goal or made adequate good-faith efforts to do so. The bidder/contractor will have the opportunity to meet in person with the reconsideration official to discuss the issue of whether it met the goal or made adequate good-faith efforts to do so. The Commission will send the bidder/contractor a written decision on reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good-faith efforts to do so. The result of the reconsideration process is not administratively appealable to the Department of Transportation.

N. PROMPT PAYMENT (49 CFR Part 26.29)

The Testing Laboratory shall certify in writing that all subcontractors and suppliers have been paid for work and materials from previous progress payments received, less any retainage, by the Testing Laboratory prior to receipt of any further progress payments (Periodic Pay Request Affidavit, and Final Pay Request Affidavit).

The Testing Laboratory is required to pay each subcontractor/supplier for satisfactory performance of its contract no later than ten (10) days from the receipt of each payment the Testing Laboratory receives from the Savannah Airport Commission.

The Commission will hold retainage from the Testing Laboratory and provide for prompt and regular incremental acceptances of portions of the contract and then pay retainage to the Testing Laboratory based on these acceptances. The Testing Laboratory must pay all retainage owed to their subcontractors for satisfactory completion of the accepted work within thirty (30) days after the Commission's payment to the Testing Laboratory.

A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required by the Commission. When the Commission has made an incremental acceptance of a portion of a contract, the

work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.

Any delay or postponement of payment from the above referenced timeframes may occur only for good cause following written approval of the Commission. The Testing Laboratory will not be reimbursed for work performed by subcontractors unless and until the Testing Laboratory ensures that the subcontractors are promptly paid for the work they have performed. The Savannah Airport Commission will require the Testing Laboratory to include a similar clause in their subcontracts requiring subcontractors to promptly pay their sub-subcontractors.

Unless delay or postponement of payment is approved in writing by the Commission, in accordance with this provision, failure by the Testing Laboratory to comply with these prompt payment requirements may result in the Testing Laboratory being placed in default of its contract. In addition, violation of this provision by Testing Laboratory entitles the Commission to exercise any other rights it has by law or under the Contract. (See General Conditions, Section 80, paragraph 80-08).

In order to properly monitor payments to DBEs, and as required by the Commission the Testing Laboratory will be required to send along with each payment to their DBE subcontractor or supplier a "Verification of Payments Received Letter", which the DBE(s) must sign and return to the Commission's DBELO for monitoring and DBE Program record keeping purposes.

The Commission will also require each Testing Laboratory to submit to the Commission a monthly pay request which shall be accompanied by a "DBE Utilization Form" which is a report of DBE expenditures. The report will show DBE subcontractors, and non-DBE subcontractors if and as required by the Commission, the amount of their subcontract, the amount earned to date, the amount earned for that respective pay request and the amount remaining to be earned. At the sole discretion of the Commission, the Testing Laboratory's future pay requests will be withheld or disapproved until the DBE Utilization Form is submitted as required, and until DBEs are promptly and properly paid as verified by receipt of the Verification of Payments Received Letter.

Prior to close out of the project, the Commission may also require that the Testing Laboratory furnish and/or require the Testing Laboratory to have its subcontractor(s) furnish to the Commission with copies of canceled checks, invoices, and/or any other information from DBE subcontractors/sub-subcontractors utilized on the project.

To the extent that there is any inconsistency between the original and these amendments, the amendments shall take precedence.

SAVANNAH AIRPORT COMMISSION

DISADVANTAGED BUSINESS ENTERPRISE ASSURANCE FORM

The Bidder, Prospective Testing Laboratory, or Testing Laboratory shall complete the following statement by checking the appropriate box (check one only). Failure to complete this statement shall be grounds for rejection of Bid.

☐ The Bidder, Prospective Testing Laboratory, or Testing Laboratory is able to assure meeting the requirements of the DBE Provisions, included under the DISADVANTAGED BUSINESS ENTERPRISE REQUIREMENTS, and shall utilize 0% (percent) RACE-NEUTRAL DBE Participation.

Company Name, Printed or Typed

IRS Number

Printed Name of Person Signing

Title

BY: _____
Signature*

Date

** Must be same signature as Bid Proposal*

SAVANNAH AIRPORT COMMISSION

DBE NOTIFICATION OF INTENT TO SUBCONTRACT

Project Name: Special Inspections & Quality Assurance Testing for Fuel Storage Facility Expansion

SAC JOB ID: 30619

Bid Date: _____

Testing Laboratory: _____

Hereby intends to subcontract or purchase materials for the following work items to:

DBE: Name _____

Address _____

City/State/Zip _____ Phone _____

Item No.	Description of Work/Materials	Unit	Quantity	Unit Cost	Amount

\$ Value = \$ _____

and/or if regular dealer X 60% (Refer to Paragraph "J") \$ _____

Total \$ Value \$ _____

DBE Sub or Supplier Signature _____

Title _____

Date _____

Testing Laboratory Signature _____

Title _____

Date _____

This form must be signed by the Testing Laboratory and the DBE Subcontractor. A separate form is required for each DBE Subcontractor. The form(s) shall be submitted whether or not DBE participation is being proposed. If DBE participation is not being proposed, Bidder, Prospective Testing Laboratory, or Testing Laboratory must indicate "NONE" beside DBE name and mark "0" in \$ value space. The proposed contract amounts specified on this form for a DBE firm must be the same (verify) as the amounts shown on the DBE Subcontractor's List for the same DBE firm unless the amounts are more favorable for the DBE or unless otherwise approved by the Commission. This form must be submitted with the Bid Proposal or within five (5) business days after bid opening.

SAVANNAH AIRPORT COMMISSION

DISADVANTAGED BUSINESS ENTERPRISE (DBE) SUBCONTRACTORS LIST

(Reproduce if additional copies are needed)

Disadvantaged Business Enterprise Subcontractor (Company Name)	Description of Work/Materials	Dollar Value of Subcontract Work *

Total Dollar Value of Subcontract Work \$ _____

Total Dollar Value of Basic Bid \$ _____

Percent of Total (*See note below) _____ %

* NOTE: **IMPORTANT** – Not all DBE participation can be counted at 100%. For example, when using a regular dealer for supplies and materials, participation must be counted at 60% of the value. Also, all DBE firms must perform a commercially useful function. Before calculating the percentage, refer to Paragraph “J” - DBE PARTICIPATION COUNTED TOWARD GOAL for these and other requirements.

SAVANNAH AIRPORT COMMISSION

VERIFICATION OF PAYMENTS RECEIVED

_____ (Date)

Mr. Dawoud Stevenson
Disadvantaged Business Enterprise Liaison Officer
Savannah Airport Commission
400 Airways Avenue
Savannah, GA 31408

RE: Verification of Payments Received
SAC JOB ID: 30619
Special Inspections & Quality Assurance Testing for Fuel Storage Facility
Expansion

Dear Sir:

This letter is to certify that _____ (name of DBE firm)
has received \$_____ (dollar amount) from
_____ (Testing Laboratory). This amount
represents payment for work performed from _____ (M/D/Y) to _____
(M/D/Y) which is _____% of the total contract amount of \$_____.

Sincerely,

(Type or Print name of person signing letter)

Title

Personally appeared before me, the Undersigned Authority, _____
_____ who is known to me to be an official of the firm of
_____ who after being duly sworn stated his oath that he had read the
above statement and that the same is true and correct.

This _____ day of _____, _____.

Notary Public: _____

State of: _____

My Commission Expires: _____

SAVANNAH AIRPORT COMMISSION

DBE UTILIZATION FORM

Project Name: Special Inspections & Quality Assurance Testing for Fuel Storage Facility Expansion Pay Request No. _____

Testing Laboratory: _____ From: _____

Address: _____ To: _____

Subcontractor	Work Item (From Bid Schedule)	Item Detail (Qty, Type, Etc.)	Subcontract Amount	Amount Earned to Date	Amount This Pay Request	Amount Remaining

Signed: _____ Date: _____

Type or Print Name: _____

Title: _____

Personally appeared before me, the Undersigned Authority, _____ who is known to me to be an official of the firm of _____ who after being duly sworn, stated of his oath that he had read the above statement and that the same is true and correct.

This _____ day of _____, _____. Notary Public: _____

State of _____ My Commission Expires: _____ (Notary Seal)

SAVANNAH AIRPORT COMMISSION

SUBCONTRACTORS LIST

THIS SUBCONTRACTOR LIST IS NOT REQUIRED FOR SUBMISSION WITH PROPOSAL DOCUMENTS BUT SHALL BE SUBMITTED BY APPARENT LOW BIDDER WITHIN 48 HOURS AFTER OPENING OF PROPOSALS.

This list is attached to and is made an integral part of the Bid Proposal submitted by: (Bidder to insert full name and address)

For the construction of:

**Special Inspections & Quality Assurance Testing for
Fuel Storage Facility Expansion
SAC Job ID 30619**

The undersigned, hereinafter called "Bidder", lists below the names of the subcontractors who will perform the phases of the work indicated.

SUBCONTRACT
ITEM OF WORK

NAME AND ADDRESS
OF SUBCONTRACTOR

<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

(Attach additional sheet(s) if necessary)

The Bidder declares that he has fully investigated each subcontractor listed and has received and has in his files evidence that each subcontractor maintains a fully equipped organization capable, technically and financially, of performing the pertinent work, and that he has performed similar installations in a satisfactory manner. The Bidder further declares that he shall not change any of these designated subcontractors for work on this Project without Owner's written permission.

In witness thereof, the Bidder has hereunto set his signature and affixed his seal this _____ day
of _____, _____.

Firm Name: _____

By: _____

Title: _____

SAVANNAH AIRPORT COMMISSION

CONTRACT

This AGREEMENT, made and entered into this _____ day of _____, _____, by and between the Mayor and Aldermen of the City of Savannah and the Savannah Airport Commission, hereinafter designated the Owner, party of the first part, and _____ of the City of _____, and State of _____, hereinafter designated the Contractor, party of the second part,

W I T N E S S E T H:

THAT THE PARTIES to these presents, each in consideration of the undertakings, promises and agreements on the part of the other, herein contained, have undertaken, promised and agreed, and do hereby undertake, promise, and agree; the party(ies) of the first part for itself, its successors, and assigns, and the party(ies) of the second part for its, itself, and its, their heirs, executors, administrators, successors, and assigns; as follows:

That the party(ies) of the second part in consideration of the sums of money herein specified to be paid by said party of the first part to said party(ies) of the second part, shall and will at its, their own cost and expense furnish all labor, materials, tools, and equipment for **Special Inspections & Quality Assurance Testing for Fuel Storage Facility Expansion, SAC Job ID 30619** at the Savannah / Hilton Head International Airport, in accordance with:

The Notice to Bidders, Instructions to Bidders, Proposal, Bid Schedule and in accordance with Plan, Specification, General Conditions all therein referred to as the Contract Documents, are hereby made a part of this Contract, all of said work to be fully completed to the acceptance of and by the Mayor and Aldermen of the City of Savannah, and the Savannah Airport Commission in the amount of _____ Dollars/Cents (\$ _____ USD).

If the Contractor fails to comply with any of the terms, conditions, provisions, or stipulations of this Contract, according to the true intent and meaning thereof, then the party of the first part may avail itself of any or all remedies provided in that behalf in the Contract and shall have the right and power to proceed in accordance with the provisions thereof.

IN WITNESS WHEREOF, the parties to the agreement have hereunto set their hands and seals and have executed this agreement the day and year first above written.

OWNER

(Party of the First Part)

SAVANNAH AIRPORT COMMISSION

BY:

Stephen S. Green, Chairman

(Seal)

ATTEST:

Gregory B. Kelly, Secretary

CONTRACTOR

(Party of the Second Part)

Company Name

BY:

Name (Signature)

TITLE:

Title

Name (Print/Type)

(Seal)

ATTEST:

Name (Signature)

TITLE:

Title

Name (Print/Type)

Testing Laboratory must indicate whether
Corporation, Partnership, Company
or Individual

Corporation: ☐ Partnership: ☐

Company: ☐ Individual: ☐

The person signing shall in his own
handwriting sign the principal's
name, his own name, and his title.

Where the person signing for a corporation
is other than the President or Vice President,
he must, by affidavit, as contained herein,
show his authority to bind the corporation.

Out-of-state contractors must affix Georgia
tax registration number.

Corporate seal is required for all
companies that are incorporated.

SAVANNAH AIRPORT COMMISSION

GENERAL CONDITIONS

1. SUMMARY OF WORK

- a. The work consists of furnishing all necessary labor, material, and testing equipment to perform testing and quality assurance as required in the scope of work for **Special Inspections & Quality Assurance Testing for Fuel Storage Facility Expansion, SAC Job ID 30619.**
- b. The location of the project is at the Savannah/Hilton Head International Airport, Savannah, Georgia.
- c. The Owner for whom this work shall be executed is the Savannah Airport Commission, 400 Airways Avenue, Savannah, Georgia 31408.

2. WORKING CONDITIONS

The Testing Laboratory will furnish on 12-hour notice person or persons to perform required testing. Testing will be performed throughout the time that Testing Laboratory is performing work that requires testing as shown on Bid Schedule.

The Testing Laboratory will not be expected to retain personnel on the work site after placement of material requiring testing has been completed during a workday.

3. TESTING PROCEDURES

If a test can be satisfactorily performed in the Testing Laboratory's home office, it will be permitted.

The results of all tests shall be furnished to the Savannah Airport Commission and the General Contractor on the same day that tests are made, with the exception of such tests on strength of concrete beams or cylinders.

Sand cone or comparable method shall be used to correlate the density and moisture with a nuclear device. When a satisfactory correlation has been established, a nuclear device may be used to test density and moisture.

Testing shall be performed in accordance with the project specifications and testing standards for each item tested.

The testing lab shall furnish technical advice and certified reports on the test results.

4. BILLING PROCEDURE FOR SERVICE PERFORMED UNDER BID SCHEDULE

Billing will be for the actual number of tests performed and at the unit price quoted in the bid proposal. Unit price per bid item will include all trips to project site to make tests, pick up of concrete beams, laboratory technician's time, administration, bookkeeping, record keeping, travel time, and report submittal. Hours of charges for engineering and technician time will not be paid unless contracted for under separate agreement.

5. INSURANCE REQUIREMENTS

The Testing Laboratory shall maintain such insurance with insurance companies satisfactory to the Savannah Airport Commission as will protect the Savannah Airport Commission and the Mayor and Aldermen of the City of Savannah from claims under Workmen's Compensation acts and other employee benefit acts and from claims for damages because of bodily injury, including death, and from claims for property damage which may arise either out of or during operations whether such operations be by the bidder or by any subcontractor or by anyone directly or indirectly employed by any of them. Such insurance shall not be less than the following amounts and shall include the described coverages.

a. Workmen's Compensation

Applicable Federal and State Statutory

Employer's Liability, \$100,000.00

b. Contractor's Liability (Comprehensive General)

Including Explosion, Collapse, and Underground
Coverages and Care, Custody, and Control.

1. Bodily Injury-Each Occurrence \$1,000,000.00

2. Property Damage Including Completed Operations
Broad Form-Each Occurrence \$1,000,000.00

3. Person Injury Including Hazards, A, B, and C,
Not to Exclude Employees \$Included

4. Automobile Liability, Owned, Non-Owned and Hired

Bodily Injury-Each Occurrence \$1,000,000.00
Property Damage-Per Occurrence \$1,000,000.00

c. These policies shall insure bidder and Savannah Airport Commission against all claims for injury or death to persons or damage to property and shall contain an appropriate cross liability clause insuring Savannah Airport Commission against any loss or damage to Savannah Airport Commission property resulting from any acts of bidder, its officers, employees, servants or subcontractors, and waiving any right of subrogation against the Savannah Airport Commission.

d. The Savannah Airport Commission requires that ALL LIABILITY POLICIES must be **ENDORSED** to include **the Mayor and Aldermen of the City of Savannah and the Savannah Airport Commission, its officers, directors, agents and employees as ADDITIONAL INSURED**. This must be reflected on the Certificate of Insurance which shall be furnished to the Commission. The Certificate of Insurance shall evidence proper limits of coverage as set forth herein and that the policy or policies will not be cancelled or modified without thirty (30) days prior written notice thereof is given to the Savannah Airport Commission. The Certificate shall also reflect that all policies have been endorsed to include waivers of any and all subrogation. The Testing Laboratory shall also require its subcontractors and subcontractors/subcontractors to endorse their policies to include **the Mayor and Aldermen of the City of Savannah and the Savannah Airport Commission, its officers, directors, agents and employees as ADDITIONAL INSURED**.

6. AIRPORT RULES AND REGULATIONS

Testing Laboratory(s) shall be responsible for informing all employees concerning pertinent airport and Federal Aviation Administration rules and regulations. Testing Laboratory(s) shall conform with all rules and regulations and directives issued either orally or in writing by the Owner or his representative. All pertinent local, state and federal safety requirements shall be observed by the Testing Laboratory(s) and Testing Laboratory(s)' personnel. Testing Laboratory(s) shall execute a Hold Harmless Agreement with the Savannah Airport Commission, which form shall be furnished by the Airport Commission.

7. ACCIDENTS

All accidents causing personal injury or property damage shall be reported to the Executive Director or his representative immediately. The Testing Laboratory(s) shall provide, at the site, such equipment and medical facilities as are necessary to supply first aid service to anyone who may be injured in connection with the performance of the work, whether on or adjacent to the site, which causes death, personal injury, or property damage, giving full details and statements of witnesses. In addition, if death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone to the Executive Director or his representative and the Project Engineer.

8. NOTICE TO PROCEED

The Notice to Proceed shall state the date on which it is expected the Testing Laboratory will begin the work and from which date the contract time will be charged. The Testing Laboratory shall begin the work to be performed under the contract within ten (10) calendar days of the date written by the Owner in the Notice to Proceed, but in any event, he shall notify the Owner at least 24-hours in advance of the time actual construction operations will begin.

9. SAFETY & SECURITY

The Testing Laboratory shall be responsible for the security of his equipment and materials. He shall be responsible for the security of all perimeter security gates, terminal doors and hatches leading to secure areas utilized by him. As directed by the Executive Director, locks shall be placed on each gate used by the Testing Laboratory. The locks must be marked in a manner showing company ownership and a key or combination provided to the Airport Police Department. The gates shall be locked at all times or guards posted at the gates to control access through them. Gate guards shall have a radio or cellular phone which will enable them to call the Police to report security problems or Testing Laboratory to verify identities, etc. For joint use gates, if a lock is found unsecured, the company owning the lock is in violation of Airport Rules and Regulations. In addition, unauthorized entry to the Air Operations Area through the gates may result in the responsible party being cited for violating Airport Regulations.

- a. The Federal Aviation Act of 1958, Section 901, 49 USC 1471, gives the Federal Aviation Administration authority to place a fine on any airport found to be in breach of a security requirement.
- b. The Testing Laboratory shall reimburse the Airport Commission for the full amount of any fines placed on the Airport Commission due to negligence on the part of the Testing Laboratory. Fines may be placed on the Airport Commission for such things as security gates being unlocked, terminal doors not secure, fences torn down, and Air Operations Area not being properly secured. These are only examples of items causing fines and not limitations. There could be other related items.

- c. It is the Testing Laboratory's responsibility to prevent any breach of security within his area of construction or any route of entry to area of construction.
- d. Security Clearances - All personnel having unescorted access to any security restricted area shall wear valid Savannah/Hilton Head International Airport identification badges so they are visible on their outer garments in such areas at all times to permit ready recognition by Airport Public Safety Officers. The Testing Laboratory's employees may be issued any one of the below listed Security Identification, etc. badges.
 - 1. The Airport Identification Badges are issued to approved personnel in several colors:
 - a. BLUE – Issued to personnel requiring unlimited access inside the SIDA.
 - 1. Effective December 6, 2002, the TSA requires anyone requesting unescorted access to the secured SIDA shall be fingerprinted, a background check performed, and results returned prior to ID Badge being issued. **No exceptions.** This process takes 3-14 days. Anyone applying for badges shall submit application as soon as possible to ensure fingerprints / criminal history records are returned prior to start date of project.
 - 2. The cost for processing is \$30.00 for fingerprinting and \$30.00 per badge, per person. Everyone receiving a SIDA ID Badge must be fingerprinted.
 - b. YELLOW – Issued to contractors working in the vicinity of the aircraft movement area in order to perform their required duties. Persons with yellow badges may NOT enter the SIDA.
 - c. GREY – Issued to general aviation and tenants who require incidental access to the 1542.203 areas. Persons with Blue/Gray badges may NOT enter the SIDA.
 - 2. The color of the badge signifies the area on the airport where the badge holder may operate.
 - a. Identification badges must be always controlled. When personnel are terminated, upon completion of the construction project, and when badges expire, the Contractor is responsible for returning identification badges to the Credentialing Office. Before a new badge is issued to any person, their expired or invalid badge must be returned to the Credentialing Office.

Upon completion of a project, it will be the responsibility of the General Contractor to collect all badges issued under his contract. Subcontractors are responsible for collecting their badges. Before final payment is made on the project, a written notification from the Credentialing Office will be given to the Director of Engineering. The written notice will state the number of badges issued and the number of badges returned.
 - b. A fee of \$30.00, payable in advance, is charged for each badge issued. Each Contractor and subcontractor shall make a cash deposit of \$250 prior to receiving any badges. This deposit is refundable providing all badges have been returned. For each badge not returned by the Authorized Signatory/Contracting or subcontracting company within 14 business days, a non-refundable penalty of \$200.00 will be charged. All costs, i.e., ID Badge, fingerprint requirements, and deposit(s) shall be paid in advance before receiving badges.

- c. The Testing Laboratory shall be required to comply with the Transportation Security Administration Amendment to Part 1542.209 prior to commencing work. All personnel hired after December 6, 2002, who have unescorted access to any area on the airport controlled for security reasons shall have background checks to the extent allowable by law, including at a minimum, references and prior employment histories to the extent necessary to verify representations made by the employee/applicant relative to employment in the preceding ten (10) years. The Testing Laboratory shall certify to the Commission by using SAC Form 513 that such checks were conducted and are on file in the Testing Laboratory's office for inspection by the Transportation Security Administration (TSA) or Savannah Airport Commission representatives.
- d. The Testing Laboratory shall provide the Savannah Airport Commission a list of all employees having access to the Air Operations Area on SAC Form 513.
- e. SAC Form 513 shall be used by the Testing Laboratory whenever applying for the identification badges. Only the Testing Laboratory or representative, who shall be designated in writing, shall sign SAC Form 513.
- f. All badge requests and background forms shall be turned in forty-eight (48) hours in advance. Once approved, all badge holders shall attend SIDA Contractor's badge and/or airfield drivers training classes.
- g. Any person found within any security restricted area without proper identification shall be in violation of Federal law and the Airport Rules and Regulations. All such persons shall be escorted off the Air Operations Area and may be cited by the Airport Public Safety Department. In addition, the person may have their identification badge revoked.
- h. Any delay in construction of project due to violations of Federal or Airport Regulations shall be absorbed by the Testing Laboratory and not the Airport Commission.
- i. Motorized Vehicles
No personal vehicles (POV's) are allowed in the AOA. Only company vehicles with the company name displayed will be permitted access to the AOA.

Vehicular traffic crossing active aircraft movement areas (runways, taxiways or aircraft parking aprons) shall be controlled either by two-way radio contact with the control tower, by escort, flagman, signal lights, or other appropriate means as approved by the FAA Control Tower Chief. After receiving clearance from the Control Tower, the driver's personal observation that no aircraft is approaching his position will be made before he makes any crossing of active taxiway or runway. **THE TESTING LABORATORY SHALL BE RESPONSIBLE FOR SUPPLYING THEIR OWN RADIOS.**

If it is desirable to clearly identify the vehicles for control purposes by either assigned initials or numbers, then the identifying symbol shall be of eight (8) inch minimum, block-style character of a color easily read. Symbols may be applied by use of tape or water-soluble paint.

Motorized vehicles and equipment operating in the AOA shall not exceed fifteen (15) miles per hour.

Aircraft shall have priority over all motorized vehicles and equipment.

10. INDEMNIFICATION

a. Governing Law

This Agreement shall be deemed to be made in and construed in accordance with the laws of the State of Georgia.

- b. The Testing Laboratory shall protect, defend, and indemnify Commission and its officers, agents and employees from an against any and all liabilities, losses, suits, claims, judgments, fines or demands arising by reason of injury or death of any person, or damage to any property, including all reasonable costs for investigation and defense thereof (including but not limited to attorney fees, court costs, and expert fees), of any nature whatsoever arising out of or incident to this Agreement and/or the use or occupancy of the Premises or the acts or omissions of Testing Laboratory's officers, agents, employees, contractors, subcontractors, licensees, or invitees, regardless of where the injury, death or damage may occur, unless such injury, death, or damage is caused by the sole negligence of the Commission. The Commission shall give to Testing Laboratory reasonable notice of any such claims or actions. The Testing Laboratory shall also use counsel reasonably acceptable to Commission in carrying out its obligations hereunder. The provisions of this section shall survive the expiration or early termination of this Agreement.

11. TERMINATION OF CONTRACT

The provisions of this contract may be terminated by either party without cause, in which event at least thirty (30) days prior written notice of such termination shall be given to the other. In the event the Savannah Airport Commission causes abandonment, termination, or suspension of this Contract, or parts thereof, the Testing Laboratory shall be compensated for services rendered up to the time of such abandonment, termination, or suspension. Compensation to the Testing Laboratory shall be for any reasonable costs incurred by the Testing Laboratory up to the time of abandonment, termination, or suspension. The Testing Laboratory shall submit full documentation of costs incurred.

12. NONDISCRIMINATION

(As required by Title VI of the Civil Rights Act of 1964; Department of Transportation 49 CFR Part 21; and Section 520 of the Airport and Airway Improvement Act of 1982).

The Testing Laboratory shall comply with and shall ensure that the following Non-Discrimination clause is inserted in all subcontracts, subleases, and other agreements at all tiers:

“The Testing Laboratory assures that it will comply with pertinent statutes, Executive Orders and such rules as are promulgated to assure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or handicap be excluded from participating in any activity conducted with or benefiting from Federal assistance.”

13. TECHNICAL REQUIREMENTS

- a. Engineering Date shall include, but not be limited to, the following:
 1. Keeping records of test results with sample lot / location recorded.
 2. Sorting and compiling data to meet requirements set forth in computing the pay factor for concrete.
 3. Keeping account of lots and locations of lots to meet acceptance criteria for compressive strength, slump, and air content of concrete structures; GABC nuclear density testing and proctor(s) for GABC, and nuclear density testing and proctor(s) for compacted soils.
- b. Guideline set out in Section 110 Method of Estimating Percentage of Material within Specification Limits. (PWL).
- c. Reports shall be sealed by a Professional Engineer registered in Georgia. Test results shall be communicated to the Owner by the most expeditious means practicable as soon as same become available, with hard copy to follow as specified herein.

14. ENGINEERING SERVICES

This item is to be utilized for professional service needs when material and/or job conditions warrant the use of such personnel in advising the Owner and Contractor as to cause and/or solution of geotechnical problem(s) on the project. This service must be requested by the Owner. This service does not include general advice or conversation pertaining to routine testing results, scheduling, or procedures related to testing as such services are covered by this Agreement and are not considered an extra charge thereunder.

15. TESTING LAB ACCREDITATION

- a. Mandatory standards contained in Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5370-10A, Standards for Specifying Construction of Airports, paragraphs 401-3.5 and 401-5.1 for plant mix bituminous pavements and paragraphs 501-2.1, 501-3.4, and 501-5.1 for Portland cement concrete pavement, require that testing firms be accredited by national authorities as evidence of the firm's competence to perform certain tests.

The FAA Southern Region will require compliance with ASTM D 3666, Standard Specifications for Minimum Requirements for Agencies Testing and Inspecting Bituminous Paving Materials and ASTM C 1077, Standard Practice for Laboratories Testing Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation, for all paving projects (includes subbase, base and surface courses, as appropriate) over \$250,000.

For asphalt projects in the state of Florida, the FAA has approved substitution of Florida Department of Transportation (FLDOT) accreditations for national accreditations. It is anticipated that FLDOT accreditations for Portland cement concrete will also be substituted for national accreditations in the near future. However, only national accreditations will be acceptable on Airport Improvement Program (AIP) projects outside the state of Florida.

- b. FAA, Airports Division, Southern Region is issuing the following timetable for implementing lab accreditation requirements:

Effective January 1, 1996:

Any testing firm employed to develop mix formulas and/or to perform acceptance and sampling testing on airport paving projects exceeding \$250,000 within the FAA Southern Region must provide evidence that it has begun the accreditation process and has requested an inspection of its laboratory facilities by a "qualified national authority" such as the AASHTO Accreditation Program (AMRL), the American Association for Laboratory Accreditation (AALA), the National Voluntary Laboratory Accreditation Program (NVLAP), etc. Firms working in Florida must possess FLDOT accreditation on plant mix bituminous paving.

Effective January 1, 1997:

Any testing firm employed to develop mix formulas and/or to perform acceptance and sampling testing on airport paving projects exceeding \$250,000 within the Southern Region must fully comply with ASTM D 3666 and/or ASTM C 1077 requirements. Firms working in Florida must possess FLDOT accreditation on plant mix bituminous paving and Portland cement concrete paving.

- c. National Accreditation Authorities

Cement and Concrete Reference Laboratory (CCRL)
National Institute of Standards and Technology, Bldg. 226, Room A365
Gaithersburg, MD 20899
301/975-6704 Dave Savage

National Voluntary Laboratory Accreditation Program (NVLAP)
National Institute of Standards and Technology, Bldg. 411, Room A124
Gaithersburg, MD 20899
301/975-4016 Paul Martin

American Association for Laboratory Accreditation (AALA)
656 Quince Orchard Road, Suite 203
Gaithersburg, MD 20878-1409
301/670-1377

AASHTO Accreditation Program (AMRL)
444 N. Capitol St. NW, Suite 225
Washington, DC 20001
202/624-5800



U.S. Department
of Transportation
**Federal Aviation
Administration**

Memorandum

Subject: **ACTION:** Testing Laboratory Evaluation,
AC 150/5370-10A

Date: January 23, 2004

From: Manager, Airport Engineering Division, AAS-100

Reply to
Attn. of:

To: All Regions
ATTN: Manager, Airports Division

In certain specifications and program guidance, we require testing laboratories to meet standards published in the American Society for Testing and Materials (ASTM) C 1077 and ASTM D 3666. These standards set forth the criteria for evaluating the capability of a laboratory to perform designated tests on concrete and bituminous materials. Both standards require inspection and/or accreditation by a national authority. Effective with this memorandum, we recognize the U.S. Army Corps of Engineers, Engineer Research and Development Center, Materials Testing Center (MTC), Waterways Experiment Station, Vicksburg, MS as a national authority capable of determining that laboratories meet the requirements of ASTM C 1077 and ASTM D 3666. We recognize a current validation report from the MTC that includes these tests as evidence that a laboratory meets the requirements of these standards. Laboratories that have been validated under this program are listed on the MTC homepage at <http://www.wes.army.mil/SL/MTC/mtc.htm>.

Attached is an example of a validation report issued by the MTC (used by permission). If you have any questions, please contact Jeff Rapol on 202-267-7474.

ORIGINAL SIGNED BY

Rick Marinelli, P.E.

Attachment



DEPARTMENT OF THE ARMY
ENGINEER RESEARCH AND DEVELOPMENT CENTER, CORPS OF ENGINEERS,
WATERWAYS EXPERIMENT STATION, 3809 HALLS FERRY ROAD
VICKSBURG, MISSISSIPPI 39180-0150

COPY FOR YOUR
INFORMATION

REPLY TO
ATTENTION OF:

08 Oct 03

CEERD-GS-E (1110-1-8100c)

Memorandum For Commander, USAE District, Vicksburg, ATTN: CEMVK-CD-VR/Mr. Wilhelm Lufteham,
Alexandria Project Office, P. O. Box 6561, Alexandria, LA 71305

SUBJECT: Validation of Geotechnical Testing Laboratory, Inc., Alexandria, LA

1. Reference Military Interdepartmental Purchase Request No. W6078PM23625608, dated 18 Dec 02, requesting the inspection of the materials testing laboratory of Geotechnical Testing Laboratory, Inc., Alexandria, LA. This laboratory was inspected on 16-17 Jan 03. The results of that inspection were reported to the Commander, USAE District, Vicksburg on 23 Jan 03 and the laboratory reported their deficiency corrections to the Materials Testing Center on 23 Sep 03.

2. The Quality System of the laboratory is satisfactory and we are granting a validation of the lab to perform material tests for the U.S. Army Corps of Engineers. The material test methods that the laboratory is validated to perform are:

- a. Aggregate Tests: ASTM C40, C117, C127, C128, C136, C29, C566, C702, and D75.
- b. Bituminous Tests: ASTM D2726 and D3656.
- c. Concrete Tests: ASTM C31, C39, C138, C143, C172, C173, C231, C1064, C42, C78, C174, C192, C470, C511, C817, and C1077.
- d. Soil Tests: ASTM D421, D422, D427, D698, D854, D1140, D1556, D1557, D2166, D2216, D2487, D2488, D2922, D3017, D3740, and D4318.

3. We will add Geotechnical Testing Laboratory, Inc., Alexandria, LA to the list of commercial laboratories qualified to conduct material tests for the U.S. Army Corps of Engineers, see the Materials Testing Center homepage at <http://www.wes.army.mil/SLMTC/mtc.htm>. All Corps offices will be notified of this decision and will have the opportunity to use their services. The laboratory will remain on our list of laboratories qualified to conduct material tests until 16 Jan 06, three (3) years from the date of the inspection.

DANIEL A. LEAVELL
Director, Materials Testing Center

CF:
Mr. Mark Wooley/Geotechnical Testing Laboratory, Inc., Alexandria, LA
Ms. Rae Anderson/CEMVN-CD-GS

EXAMPLE OF A VALIDATION REPORT ISSUED BY THE MTC (USED BY
PERMISSION)

16. SECTION 110: METHOD OF ESTIMATING PERCENTAGE OF MATERIAL
WITHIN SPECIFICATION LIMITS (PWL)

a. GENERAL.

When the specifications provide for material to be sampled and tested on a statistical basis, the material will be evaluated for acceptance in accordance with this section. All test results for a lot will be analyzed statistically, using procedures to determine the total estimated percent of the lot that is within specification limits. This concept, termed percent within limits (PWL), is a statistically based evaluation method, whereby the PWL is computed on a lot basis, using the average (X) and standard deviation (Sn) of the specified number (n) of subplot tests for the lot and the specification tolerance limits (L for lower and U for upper) for the particular acceptance parameter. From these values, the respective Quality index(s) (QL for Lower Quality Index and/or QU for Upper Quality Index) is computed and the PWL for the specified n is determined from Table 1.

b. METHOD FOR COMPUTING PWL.

The computational sequence for computing the PWL is as follows:

- Divide the lot into n sublots in accordance with the acceptance requirements of the specification.
- Locate the sampling position within the subplot in accordance with the random sampling requirements of the specification.
- Make a measurement at each location, or take a test portion and make the measurement on the test portion in accordance with the testing requirements of the specification.
- Average all subplot values within the lot to find X by using the following formula:

$$X = (x1 + x2 + x3 + \dots + xn) / n$$

Where:

X = Average of all subplot values within a lot

x1, x2 = Individual subplot values

n = Number of sublots

- Find the standard deviation Sn by use of the following formula:

$$Sn = \text{SQRT}[(d1*d1 + d2*d2 + d3*d3 + \dots + dn*dn) / (n-1)]$$

Where:

Sn = standard deviation of the number of subplot values in the set

d1, d2 = deviations of the individual subplot values X1, X2 . . . from the average value X

that is: d1 = (x1 - X), d2 = (x2 - X) . . dn = (xn - X)

n = number of sublots

- For single sided specification limits (i.e., L only), compute the Lower Quality Index QL by use of the following formula:

$$QL = (X - L) / S_n$$

Where:

L = specification lower tolerance limit

Estimate the percentage of material within limits (PWL) by entering Table 1 with QL, using the column appropriate to the total number (n) of measurements. If the value of QL falls between values shown on the table, use the next higher value of PWL.

- For double sided specification limits (i.e. L and U), compute the Quality Indexes QL and QU by use of the following formulas:

$$QL = (X - L) / S_n \text{ and } QU = (U - X) / S_n$$

Where:

L and U = specification lower and upper tolerance limits

Estimate the percentage of material between the lower (L) and upper (U) tolerance limits (PWL) by entering Table 1 separately with QL and QU, using the column appropriate to the total number (n) of measurements, and determining the percent of material above PL and percent of material below PU for each tolerance limit. If the values of QL fall between values shown on the table, use the next higher value of PL or PU. Determine the PWL by use of the following formula:

$$PWL = (PU + PL) - 100$$

Where:

PL = percent within lower specification limit

PU = percent within upper specification limit

EXAMPLE OF PWL CALCULATION

Project: Example Project

Test Item: Item P-401, Lot A.

A. PWL Determination for Mat Density.

1. Density of four random cores taken from Lot A.

A-1 96.60

A-2 97.55

A-3 99.30

A-4 98.35

n = 4

2. Calculate average density for the lot.

$$X = (x_1 + x_2 + x_3 + \dots + x_n) / n$$

$$X = (96.60 + 97.55 + 99.30 + 98.35) / 4$$

$$X = 97.95 \text{ percent density}$$

3. Calculate the standard deviation for the lot.

$$S_n = \text{SQRT}[(96.60 - 97.95)^2 + (97.55 - 97.95)^2 + (99.30 - 97.95)^2 + (98.35 - 97.95)^2] / (4 - 1)$$

$$S_n = \text{SQRT}[(1.82 + 0.16 + 1.82 + 0.16) / 3]$$

$$S_n = 1.15$$

4. Calculate the Lower Quality Index QL for the lot. (L=96.3)

$$QL = (X - L) / S_n$$

$$QL = (97.95 - 96.30) / 1.15$$

$$QL = 1.4348$$

5. Determine PWL by entering Table 1 with QL= 1.44 and n= 4.

$$PWL = 98$$

B. PWL Determination for Air Voids.

1. Air Voids of four random samples taken from Lot A.

$$A-1 \quad 5.00$$

$$A-2 \quad 3.74$$

$$A-3 \quad 2.30$$

$$A-4 \quad 3.25$$

2. Calculate the average air voids for the lot.

$$X = (x_1 + x_2 + x_3 + \dots + x_n) / n$$

$$X = (5.00 + 3.74 + 2.30 + 3.25) / 4$$

$$X = 3.57 \text{ percent}$$

3. Calculate the standard deviation S_n for the lot.

$$S_n = \text{SQRT}[(3.57 - 5.00)(3.57 - 5.00) + (3.57 - 3.74)(3.57 - 3.74) + (3.57 - 2.30)(3.57 - 2.30) + (3.57 - 3.25)(3.57 - 3.25)] / (4 - 1)$$

$$S_n = \text{SQRT}[(2.04 + 0.03 + 1.62 + 0.10) / 3]$$

$$S_n = 1.12$$

4. Calculate the Lower Quality Index Q_L for the lot. ($L = 2.0$)

$$Q_L = (X - L) / S_n$$

$$Q_L = (3.57 - 2.00) / 1.12$$

$$Q_L = 1.3992$$

5. Determine P_L by entering Table 1 with $Q_L = 1.40$ and $n = 4$.

$$P_L = 97$$

6. Calculate the Upper Quality Index Q_U for the lot. ($U = 5.0$)

$$Q_U = (U - X) / S_n$$

$$Q_U = (5.00 - 3.57) / 1.12$$

$$Q_U = 1.2702$$

7. Determine P_U by entering Table 1 with $Q_U = 1.27$ and $n = 4$.

$$P_U = 93$$

8. Calculate Air Voids PWL

$$PWL = (P_L + P_U) - 100$$

$$PWL = (97 + 93) - 100 = 90$$

TABLE 1. TABLE FOR ESTIMATING PERCENT OF LOT WITHIN LIMITS (PWL)

Percent Within (PL and PU)	Positive Values of Q (QL and QU) Limits					
	n=3	n=4	n=5	n=6	n=7	n=8
99	1.1541	1.4700	1.6714	1.8008	1.8888	1.9520
98	1.1524	1.4400	1.6016	1.6982	1.7612	1.8053
97	1.1496	1.4100	1.5427	1.6181	1.6661	1.6993
96	1.1456	1.3800	1.4897	1.5497	1.5871	1.6127
95	1.1405	1.3500	1.4407	1.4887	1.5181	1.5381
94	1.1342	1.3200	1.3946	1.4329	1.4561	1.4716
93	1.1269	1.2900	1.3508	1.3810	1.3991	1.4112
92	1.1184	1.2600	1.3088	1.3323	1.3461	1.3554
91	1.1089	1.2300	1.2683	1.2860	1.2964	1.3032
90	1.0982	1.2000	1.2290	1.2419	1.2492	1.2541
89	1.0864	1.1700	1.1909	1.1995	1.2043	1.2075
88	1.0736	1.1400	1.1537	1.1587	1.1613	1.1630
87	1.0597	1.1100	1.1173	1.1191	1.1199	1.1204
86	1.0448	1.0800	1.0817	1.0808	1.0800	1.0794
85	1.0288	1.0500	1.0467	1.0435	1.0413	1.0399
84	1.0119	1.0200	1.0124	1.0071	1.0037	1.0015
83	0.9939	0.9900	0.9785	0.9715	0.9672	0.9643
82	0.9749	0.9600	0.9452	0.9367	0.9325	0.9281
81	0.9550	0.9300	0.9123	0.9025	0.8966	0.8928
80	0.9342	0.9000	0.8799	0.8690	0.8625	0.8583
79	0.9124	0.8700	0.8478	0.8360	0.8291	0.8245
78	0.8897	0.8400	0.8160	0.8036	0.7962	0.7915
77	0.8662	0.8100	0.7846	0.7716	0.7640	0.7590
76	0.8417	0.7800	0.7535	0.7401	0.7322	0.7271
75	0.8165	0.7500	0.7226	0.7089	0.7009	0.6958
74	0.7904	0.7200	0.6921	0.6781	0.6701	0.6649
73	0.7636	0.6900	0.6617	0.6477	0.6396	0.6344
72	0.7360	0.6600	0.6316	0.6176	0.6095	0.6044
71	0.7077	0.6300	0.6016	0.5878	0.5798	0.5747
70	0.6787	0.6000	0.5719	0.5583	0.5504	0.5454
69	0.6490	0.5700	0.5423	0.5290	0.5213	0.5164
68	0.6187	0.5400	0.5129	0.4999	0.4924	0.4877
67	0.5878	0.5100	0.4836	0.4710	0.4638	0.4592
66	0.5563	0.4800	0.4545	0.4424	0.4354	0.4310
65	0.5242	0.4500	0.4255	0.4139	0.4073	0.4031
64	0.4916	0.4200	0.3967	0.3856	0.3793	0.3753
63	0.4586	0.3900	0.3679	0.3575	0.3515	0.3477
62	0.4251	0.3600	0.3392	0.3295	0.3239	0.3203
61	0.3911	0.3300	0.3107	0.3016	0.2964	0.2931
60	0.3568	0.3000	0.2822	0.2738	0.2691	0.2660
59	0.3222	0.2700	0.2537	0.2461	0.2418	0.2391
58	0.2872	0.2400	0.2254	0.2186	0.2147	0.2122
57	0.2519	0.2100	0.1971	0.1911	0.1877	0.1855
56	0.2164	0.1800	0.1688	0.1636	0.1607	0.1592
55	0.1806	0.1500	0.1408	0.1363	0.1338	0.1322
54	0.1447	0.1200	0.1125	0.1090	0.1070	0.1057
53	0.1087	0.0900	0.0843	0.0817	0.0802	0.0792
52	0.0725	0.0600	0.0562	0.0544	0.0534	0.0528

51	0.0363	0.0300	0.0281	0.0272	0.0267	0.0264
50	0.0	0.0	0.0	0.0	0.0	0.0

TABLE 2. TABLE FOR ESTIMATING PERCENT OF LOT WITHIN LIMITS (PWL)

Percent Within Negative Values of Q (QL and QU) Limits
(PL and PU) n=3 n=4 n=5 n=6 n=7 n=8

49	-0.0363	-0.0300	-0.0281	-0.0272	-0.0267	-0.0264
48	-0.0725	-0.0600	-0.0562	-0.0544	-0.0534	-0.0528
47	-0.1087	-0.0900	-0.0843	-0.0817	-0.0802	-0.0792
46	-0.1447	-0.1200	-0.1125	-0.1090	-0.1070	-0.1057
45	-0.1806	-0.1500	-0.1408	-0.1363	-0.1338	-0.1322
44	-0.2164	-0.1800	-0.1688	-0.1636	-0.1607	-0.1592
43	-0.2519	-0.2100	-0.1971	-0.1911	-0.1877	-0.1855
42	-0.2872	-0.2400	-0.2254	-0.2186	-0.2147	-0.2122
41	-0.3222	-0.2700	-0.2537	-0.2461	-0.2418	-0.2391
40	-0.3568	-0.3000	-0.2822	-0.2738	-0.2691	-0.2660
39	-0.3911	-0.3300	-0.3107	-0.3016	-0.2964	-0.2931
38	-0.4251	-0.3600	-0.3392	-0.3295	-0.3239	-0.3203
37	-0.4586	-0.3900	-0.3679	-0.3575	-0.3515	-0.3477
36	-0.4916	-0.4200	-0.3967	-0.3856	-0.3793	-0.3753
35	-0.5242	-0.4500	-0.4255	-0.4139	-0.4073	-0.4031
34	-0.5563	-0.4800	-0.4545	-0.4424	-0.4354	-0.4310
33	-0.5878	-0.5100	-0.4836	-0.4710	-0.4638	-0.4592
32	-0.6187	-0.5400	-0.5129	-0.4999	-0.4924	-0.4877
31	-0.6490	-0.5700	-0.5423	-0.5290	-0.5213	-0.5164
30	-0.6787	-0.6000	-0.5719	-0.5583	-0.5504	-0.5454
29	-0.7077	-0.6300	-0.6016	-0.5878	-0.5798	-0.5747
28	-0.7360	-0.6600	-0.6316	-0.6176	-0.6095	-0.6044
27	-0.7636	-0.6900	-0.6617	-0.6477	-0.6396	-0.6344
26	-0.7904	-0.7200	-0.6921	-0.6781	-0.6701	-0.6649
25	-0.8165	-0.7500	-0.7226	-0.7089	-0.7009	-0.6958
24	-0.8417	-0.7800	-0.7535	-0.7401	-0.7322	-0.7271
23	-0.8662	-0.8100	-0.7846	-0.7716	-0.7640	-0.7590
22	-0.8897	-0.8400	-0.8160	-0.8036	-0.7962	-0.7915
21	-0.9124	-0.8700	-0.8478	-0.8360	-0.8291	-0.8245
20	-0.9342	-0.9000	-0.8799	-0.8690	-0.8625	-0.8583
19	-0.9550	-0.9300	-0.9123	-0.9025	-0.8966	-0.8928
18	-0.9749	-0.9600	-0.9452	-0.9367	-0.9325	-0.9281
17	-0.9939	-0.9900	-0.9785	-0.9715	-0.9672	-0.9643
16	-1.0119	-1.0200	-1.0124	-1.0071	-1.0037	-1.0015
15	-1.0288	-1.0500	-1.0467	-1.0435	-1.0413	-1.0399
14	-1.0448	-1.0800	-1.0817	-1.0808	-1.0800	-1.0794
13	-1.0597	-1.1100	-1.1173	-1.1191	-1.1199	-1.1204
12	-1.0736	-1.1400	-1.1537	-1.1587	-1.1613	-1.1630
11	-1.0864	-1.1700	-1.1909	-1.1995	-1.2043	-1.2075
10	-1.0982	-1.2000	-1.2290	-1.2419	-1.2492	-1.2541
9	-1.1089	-1.2300	-1.2683	-1.2860	-1.2964	-1.3032
8	-1.1184	-1.2600	-1.3088	-1.3323	-1.3461	-1.3554
7	-1.1269	-1.2900	-1.3508	-1.3810	-1.3991	-1.4112
6	-1.1342	-1.3200	-1.3946	-1.4329	-1.4561	-1.4716
5	-1.1405	-1.3500	-1.4407	-1.4887	-1.5181	-1.5381

4	-1.1456	-1.3800	-1.4897	-1.5497	-1.5871	-1.6127
3	-1.1496	-1.4100	-1.5427	-1.6181	-1.6661	-1.6993
2	-1.1524	-1.4400	-1.6016	-1.6982	-1.7612	-1.8053
1	-1.1541	-1.4700	-1.6714	-1.8008	-1.8888	-1.9520