SPECIFICATIONS
and
CONTRACT DOCUMENTS

FOR

APRON EXPANSION (PHASE IV)

GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA

AIP NO: 3-45-0025-019
BID NO: 18-040

PREPARED FOR:
GEORGETOWN COUNTY, SOUTH CAROLINA
AND
GEORGETOWN COUNTY AIRPORT COMMISSION

IN COOPERATION WITH:
SOUTH CAROLINA AERONAUTICS COMMISSION
and
FEDERAL AVIATION ADMINISTRATION

Engineer:
TALBERT & BRIGHT, INC.
Engineering and Planning Consultants
4810 Shelley Drive
Wilmington NC 28405
(910) 763-5350

TBI No. 2601-1702
January 2018

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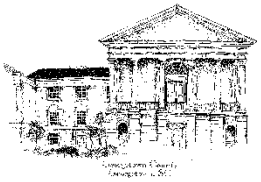
Appendices:



County of Georgetown, South Carolina

129 Screven Street, Suite 239 · Georgetown, SC 29440-3641
Post Office Box 421270, Georgetown, SC 29442-4200
(843)545-3083 · Fax (843)545-3500 · purch@gtcounty.org

REQUEST FOR PROPOSALS

BID NUMBER: 18-040 ISSUE DATE: Friday, April 27, 2018

OPENING DATE: Wednesday, May 23, 2018 OPENING TIME: 3:00 PM (Eastern NIST)
Bid Opening Location: Georgetown County Courthouse, Suite #239, (Purchasing Conference Room)

Pre-Bid Conference/Site Inspection: VOLUNTARY - Wednesday, May 09, 2018 at 11:00AM ET
Georgetown County Airport Terminal, 129 Airport Road, Georgetown, SC 29440

PROCUREMENT FOR: **Apron Expansion, Phase IV at Georgetown County Airport (GGE)**
Commodity Code(s): 98868, 96808

Subject to the conditions, provisions and the enclosed specifications, sealed bids will be received at the location and time stated herein and will be publicly opened and read.

MAILING ADDRESS:
County of Georgetown
Post Office Drawer 421270
Georgetown SC 29442-4200
Attn: Purchasing

STREET ADDRESS:
Georgetown County Courthouse
129 Screven Street, Suite 239
Georgetown SC 29440-3641
Attn: Purchasing

IMPORTANT OFFEROR NOTES:
1) Bid Number & Title must be shown on the **OUTSIDE** of the delivery package.
2) Federal Express does **not** guarantee delivery to Georgetown, SC before 4:30 PM Eastern Time on **Primary Overnight** Service.
3) U**nited Parcel Service (UPS) does** guarantee delivery to Georgetown, SC before 10:30 AM Eastern Time on Next Day "Early AM" Service.
4) You must register a contact name, company name, fax and/or e-mail with the Purchasing Office as below to ensure your name will be added to the contact list for future amendments and addenda.

Purchasing Contacts:	**Ann Puckett**	**Bonnie Infinger**
Phone	(843)545-3083	(843)545-3082
Fax:	(843)545-3500	(843)545-3500
E-mail:	apuckett@gtcounty.org	purch@gtcounty.org

This solicitation does not commit Georgetown County to award a contract, to pay any cost incurred in the preparation of the bid, or to procure or contract for goods or services. It is the responsibility of each bidder to see that the Georgetown County Purchasing Office receives bids on, or before, the date and time specified for the bid opening. No bid will be accepted thereafter. The County assumes no responsibility for delivery of bids that are mailed. Georgetown County reserves the right to reject any or all bids and to waive any informalities and technicalities in the bid process.

Intent to Respond

REF: Bid #18-040, Apron Expansion, Phase IV at Georgetown County Airport (GGE)

If your company intends to respond to this solicitation, please complete and promptly return this form to assure that you can be included on the mailing list to receive all addenda regarding this project.

It is not necessary to return any other portion of the bid documents if you are not bidding.

Failure to return the Intent to Respond shall not be sufficient cause to rule a submittal as non-responsive; nor does the return of the form obligate an interested party to submit a response. Georgetown County's efforts to directly provide interested parties with addenda or additional information are provided as a courtesy only, and do not alleviate the respondent from their obligation to verify they have received and considered all addenda. All addenda are published and available on the county website at www.gtcounty.org select "Bid Opportunities" from the *Quick Links* box on the homepage.

☐ Our firm **does** intend on responding to this solicitation.

☐ Our firm **does not** intend on responding to this solicitation.

Company Name: _____

Address: _____

_____

Contact Person: _____

Telephone: _____

FAX: _____

E-Mail: _____

Please return this completed form to Georgetown County Purchasing Office

- **by e-mail to purch@gtcounty.org**
- **or by FAX to (843)545-3500.**

[End of Intent to Respond]

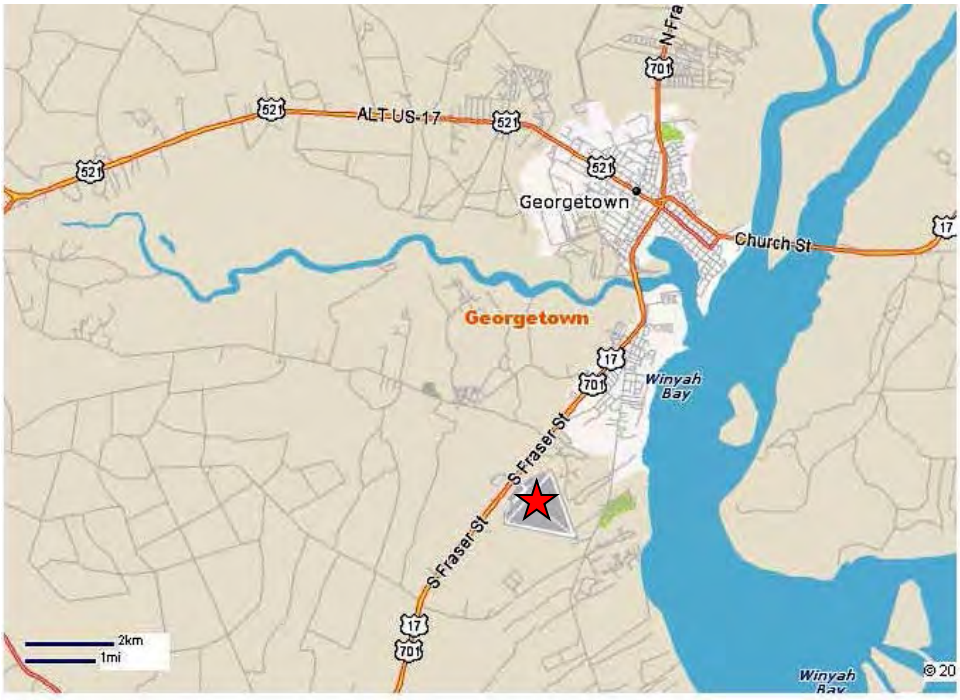
Time Line: Request for Proposal #18-040

Item	Date	Time	Location*
Advertised Date of Issue:	Fri., April 27, 2018	n/a	n/a
VOLUNTARY Pre-Bid Conference/Inspection:	Wed., May 09, 2018	11:00AM ET	GC Airport†
Deadline for Questions:	Wed., May 16, 2018	3:00PM ET	Suite 239
Bids Must be Received on/or Before:	Wed., May 23, 2018	3:00PM ET	Suite 239
Public Bid Opening & Tabulation:	Wed., May 23, 2018	3:00PM ET	Suite 239
Consideration by Georgetown County Council	Tues., June 26, 2018	5:30PM ET	Chambers
Earliest Possible Notice to Proceed	Fri., July 06, 2018	n/a	n/a

* All locations in the Old County Courthouse, 129 Screven Street, Georgetown, SC unless otherwise stated.
† Georgetown County Airport Terminal, 129 Airport Road (off US-17S), Georgetown, SC 29440.

Request for Proposal #18-040
Apron Expansion, Phase IV at Georgetown County Airport (GGE)

Availability of Project Manual and Drawings:
The full Project Manual and drawings are available for download without charge at the Georgetown County, SC website www.gtcounty.org, select "Bid Opportunities" from the ***Quick Links*** box on the home page. All future addenda will be posted at this location as well. It is the responsibility of each offeror to verify they have received all addenda.



VOLUNTARY Pre-Bid Conference and Site Inspection:
The project engineer and County staff will meet with all interested parties for the purposes of reviewing the project specifications, FAA requirements, Federal Government purchasing requirements and providing access for site inspection. This **VOLUNTARY Pre-Bid Conference and Site Inspection** will begin promptly at **11:00AM Eastern NIST on Wednesday, May 09, 2018** and will take place in the first floor conference room at the Georgetown County Airport (identifier "GGE") located at 129 Airport Road (off US-17 South a/k/a Fraser Street), Georgetown, SC 29440.

Follow-Up Site Inspections:
Subsequent site inspections will be made available by PRIOR APPOINTMENT ONLY. Please contact Mr. Russell Goodale, Airport Operations Manager at (843)359-1452 (mobile) or by email at jgoodale@gtcounty.org to verify his availability for inspection of the site. A prior request is necessary because Mr. Goodale oversees more than one field and may not always be on the GGE Airport site.

Contractor's Site Inspection Responsibilities:

1) The bidder is expected to have become familiar with and take into consideration, site conditions which may affect the work and to check all dimensions at the site.

2) Each bidder shall acquaint themselves thoroughly as to the character and nature of the work to be done. Each bidder furthermore shall make a careful examination of the site of the work and inform themselves fully as to the difficulties to be encountered in performance of the work, the facilities for delivering, storing and placing materials and equipment and other conditions relating to construction and labor.

3) The bidder shall examine the premises and the site and compare them with any applicable drawings and specifications. He/she shall familiarize themselves with the existing conditions such as obstructive area levels and any problems related to erecting the required systems.

4) No plea of ignorance of conditions that exist or may hereafter exist on the site of the work, or difficulties that may be encountered in the execution of the work, as a result of failure to make necessary investigations and examinations, will be accepted as an excuse for any failure or omission on the part of the Contractor to fulfill in every detail all the requirements of the contract documents and to complete the work for the consideration set forth therein, or as a basis for any claim whatsoever.

5) Insofar as possible, the Contractor, in carrying out his/her work, must employ such methods or means as will not cause interruption of or interference with the work of any other Contractor, or County personnel at the site.

6) When boring data is provided by the Owner, the Bidder shall assume responsibility for any conclusions he/she may draw from such data. (S)he may employ his/her own consultants to analyze available information and shall be responsible for any conclusions drawn from that information. The cost of such employment shall be borne solely by the Bidder.

Bid Security

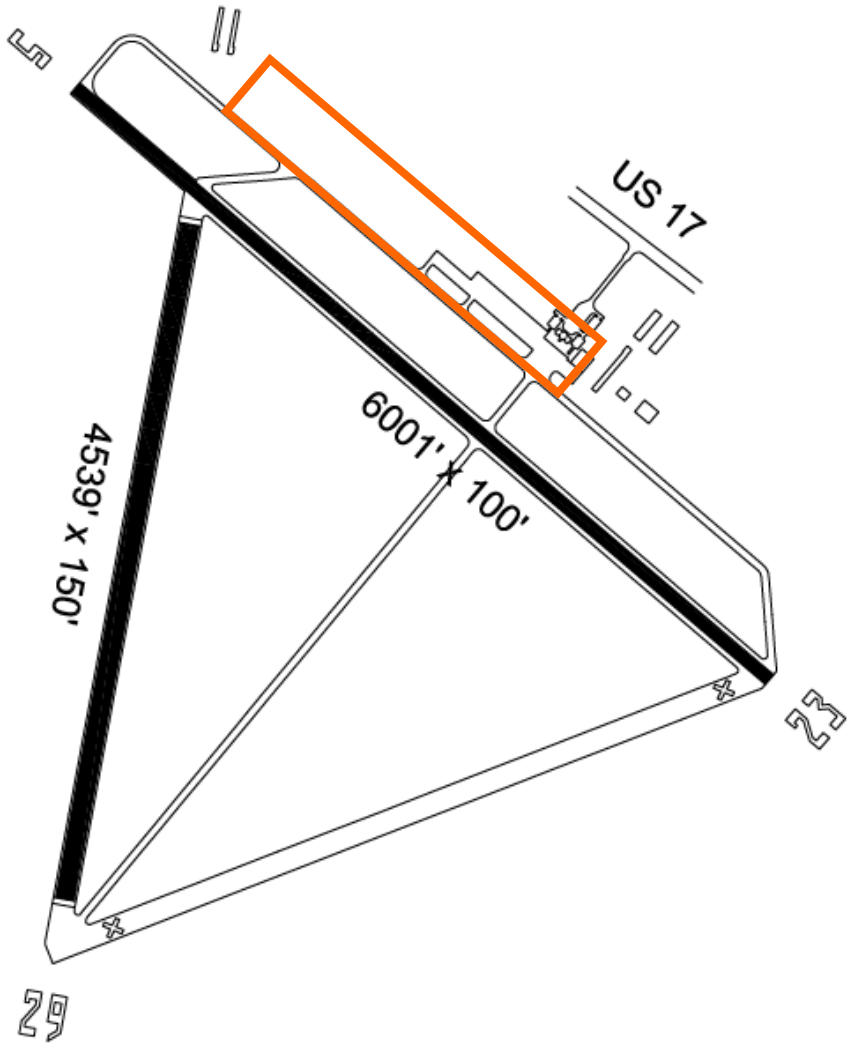
1) Each bid must be accompanied by a Bid Bond, or by a certified check payable to Georgetown County, SC, for an amount equal to five per-cent (5%) of the total base bid as a guarantee that if the bid is accepted, the required Contract will be executed within fifteen (15) days after receipt of written notice of formal award of Contract. Bids not including such a bid bond will not be considered. Bid Bonds will be returned to unsuccessful vendors after award of Bid.

2) The successful offeror must provide a Performance Bond from a surety company qualified to do business under the laws of the State of South Carolina in the amount of 100 percent (100%) of the contract amount, within fifteen (15) days the after receipt of written notice of formal award of the Contract. Pricing for such Performance Bond should be indicated separately on the Vendor Bid Submission Form.

3) The successful offeror must provide a Payment and Material Bond from a surety company qualified to do business under the laws of the State of South Carolina in the amount of 100 percent (100%) of the contract amount, within fifteen (15) days after receipt of written notice of formal award of Contract.

Project Location:

The aircraft parking apron is located adjacent to the main terminal building at the Georgetown County Airport (GGE).



Additional Contractor Responsibilities:

1) The contractor is responsible for contacting the **Palmetto Utility Protection Service (P.U.P.S.)** at its **811** or toll-free number **(1-888-721-7877)** between the hours of 7:30 am (ET) and 5:30 pm (ET), Monday through Friday, 72 hours before starting the proposed work.

2) The contractor will be responsible for disposal of any and all removed, unused and surplus materials and any fees and transportation costs associated with the disposal.

3) The contract time is sixty (60) calendar days for **Base Bid – Apron Expansion (Phase IV)** from NTP, and three (3) calendar days for **Removal of Sedimentation and Erosion Control Items.** A liquidated damages fee of $1500 per calendar day applies for each day beyond the contract completion date.

Project Funding and Grant Requirements:

It is anticipated that this project will be funded, at least in part, through a grant from the Federal Aviation Administration (FAA). Full compliance with Federal bid procedures utilizing flow down funds will be required.

When Federal Funds are, or may be, involved in the funding of a project the following clauses shall be included as part of the conditions and specifications, by reference, as though each item is included in its entirety. The following clauses contained in the Federal Procurement Regulations (FPR) or the Defense Acquisition Regulations (DAR) apply to all federal fund expenditures and are a part of the County's field order terms and conditions.

Special Terms and Conditions -- Federal Grants **Special Terms and Conditions -- Federal Contracts**	
The following provisions of the Federal Acquisition Regulations (FAR) apply regardless of the amount of the order.	
Anti-Kickback Procedures	52.203-7
Buy American Act-- Free Trade Agreements--Israeli Trade Act	52.225-3
Contract Work Hours and Safety Standards Act--Overtime Compensation	52.222-4
Integrity of Unit Prices	52.215-14(a)(b)
Equal Opportunity	52.222-26
Notice to the Government of Labor Disputes	52.222-1
Preference for U.S. - Flag Air Carriers (for international air travel only)	52.247-63
Restrictions on Subcontractor Sales to the Government	52.203-6
Service Contract Act of 1965, as Amended	52.222-41
Termination for Convenience of Government (Education and Other Nonprofit Institutions)	52.249-5 (a)-(f)
The following provisions of the Federal Acquisition Regulations (FAR) also apply if the amount of the order exceeds $2,500.	
Affirmative Action for Workers with Disabilities	52.222-36
Instructions to Offerors--Competitive Acquisition	52.215-1
The following provisions of the Federal Acquisition Regulations (FAR) also apply if the amount of the order exceeds $10,000.	
Affirmative Action for Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans	52.222-35
Audits and Records--Negotiation	52.215-2
Employment Reports on Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans	52.222.37
Instructions to Offerors--Competitive Acquisition	52.215-1
Utilization of Small Business Concerns	52.219-8
Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns	52.219.23
Walsh-Healey Public Contracts Act	52.222-20
The following provisions of the Federal Acquisition Regulations (FAR) also apply if the amount of the order exceeds $25,000.	

Special Terms and Conditions -- Federal Grants **Special Terms and Conditions -- Federal Contracts**		
Authorization and Consent		52.227-1
Notice and Assistance Regarding Patent and Copyright Infringement		52.227-2
Preference for Privately Owned U.S.- Flag Commercial Vessels		52.247-64
Utilization of Labor Surplus Area Concerns (Reserved)		52.220-3
Utilization of Women-Owned Small Business (Reserved)		52.219-13
The following provisions of the Federal Acquisition Regulations (FAR) also apply if the amount of the order exceeds $100,000.		
Clean Air and Water (Reserved)		52.223-1,2
Price Reduction for Defective Cost or Pricing Data--Modifications--Sealed Bidding		52.214-27 **or**
Subcontractor Cost or Pricing Data--Modifications--Sealed Bidding		52.214-28
NOTE: 52.214-27 applies if cost or pricing data is initially required; if not, 52.214-28 applies to transactions over $100,000.		
The following provisions of the Federal Acquisition Regulations (FAR) also apply if the amount of the order exceeds $500,000.		
Labor Surplus Area Subcontracting Program (Reserved)		52.220-4
Small Business Subcontracting Plan		52.219-9
Small Disadvantaged Business Participation Program--Incentive Subcontracting		52.219.26
The following provisions of the Federal Acquisition Regulations (FAR) apply when noted:		
Filing of Patent Applications--Classified Subject Matter	When subcontract involves classified matters	52.227-10
Hazardous Material Identification and Material Safety Data	When subcontract involves hazardous material	52.223-3
Patent Rights--Retention by the Contractor	When the subcontract or purchase order involves experimental research and development work.	52.227-11,12
NOTE: 52.227-11 applies to small business and nonprofit organizations; 52.227-12 applies to others.		
Representation of Limited Rights Data and Restricted Computer Software	When subcontract includes technical data or software acquisition requirements (DOD only)**	52.227-15
Rights in Data--General	Same as ** above.	52.227-14
Technical Data Declaration, Revision, and Withholding of Payment--Major Systems	Same as ** above.	52.227-21
Required Sources for Jewel Bearings (Reserved)	When subcontract or purchase order requires use of jewel bearings.	52.208-1
Security Requirements	When subcontract involves access to classified information.	52.204-2
The County reserves all administrative, contractual, and legal remedies against the contractor or vendor who breaches any of the contract terms.		

Instructions for Providers
RFP #18-040
Apron Expansion, Phase IV at Georgetown County Airport (GGE)

1. **Submission of Questions**
   Questions must be submitted in writing via electronic mail, facsimile or postal mail to the Issuing Officer no later than the "Deadline for Questions" cutoff identified in the Bid Timeline on page two (2) in order to generate an official answer. All written questions will receive an official written response from the Georgetown County Purchasing Office (GCPO) and will become addenda to the solicitation.

   GCPO reserves the right to reject or deny any requests made by the provider.

   Impromptu, unwritten questions are permitted and verbal answers may be provided, but are only intended as general direction and will not represent the official GCPO position. The only official position of GCPO is that which is stated in writing and issued in the solicitation as addenda thereto.

   No other means of communication, whether oral or written, shall be construed as a formal or official response/statement and may not be relied upon. SEND QUESTIONS TO:

   Purchasing Office
   Post Office Box 421270, Georgetown, SC 29442-1270
   Fax: (843) 545-3500
   Email: purch@gtcounty.org

2. Written sealed public bids for a construction contract to provide **Phase IV Apron Expansion at Georgetown County Airport** shall be received in the Purchasing Office, Second Floor, Suite 239, 129 Screven Street, Georgetown, SC until the cut-off time shown in the bid timeline on page (2) of this document. Bids will then be publicly and promptly opened at the designated time by the Purchasing Officer. Bids that are not in the Purchasing Officer's possession prior to the stated opening date and time will be considered **NON RESPONSIVE** and returned unopened. An official authorized to bind the offer must sign all proposals submitted.

3. IMPORTANT OFFEROR NOTES:
   a) Bid Number & Title must be shown on the OUTSIDE of the delivery package.
   b) Federal Express does NOT guarantee delivery to Georgetown, SC before 4:30 PM Eastern Time on Next Day Service.
   c) UPS WILL guarantee delivery to Georgetown, SC before 10:30 AM Eastern Time on Next Day "Early AM" Service.

4. Inclement Weather/Closure of County Courthouse
   If the County Courthouse is closed for business at the time scheduled for bid opening, for whatever reason, sealed bids will be accepted and opened on the next scheduled business day, at the originally scheduled time.

5. This solicitation does not commit Georgetown County to award a contract, to pay any cost incurred in the preparation of the bid, or to procure or contract for goods or services. It is the responsibility of each bidder to see that the Georgetown County Purchasing Office receives bids on, or before, the

date and time specified for the bid opening. No bid will be accepted thereafter. The County assumes no responsibility for delivery of bids that are mailed. Georgetown County reserves the right to reject any or all bids and to waive any informalities and technicalities in the bid process.

6. One (1) unbound, reproducible ORIGINAL of your proposal must be submitted in a sealed envelope and clearly marked on the outermost container as follows:

OFFEROR'S NAME
BID ITEM NAME
BID NUMBER

7. No Bidder may submit more than one bid. Multiple bids for different manufacturers but represented by the same firm will not be accepted. Bids offered directly from manufacturers shall indicate if a local dealer/representative will be involved.

8. Definitions:
   a) The terms "Proposer", "Offeror", "Vendor" or "Bidder" refer to those parties who are submitting sealed responses for the work set forth in this document to the OWNER, as distinct from a sub-bidder who provides a bid to the Bidder. The term "Contractor" refers to the successful Bidder.

   b) The term "Phase IV Apron Expansion at Georgetown County Airport" or "Service" refers to the **complete set of services** as specified in this document, in every aspect.

   c) The terms "Owner" and "County" refer to the County of Georgetown, South Carolina.

   d) "NIST" is used to denote *National Institute of Standards Time*.

   e) Where the words "shall" or "must" are used, it signifies an absolute minimum function or capacity that, if not satisfied, may result in disqualification.

   f) Where the words "should", "may", or "is desirable" are used, it signifies desirable, but not mandatory functions or capacities. Bidders who are able to provide these functions or capacities may be evaluated more favorably that those who cannot.

9. Correction or Withdrawal of Bids; Cancellation of Awards
   An offeror must submit in writing a request to either correct or withdraw a bid to the Procurement Officer. Each written request must document the fact that the offeror's mistake is clearly an error that will cause him substantial loss.

   a) Correction of awards : An offeror shall not be permitted to correct a bid mistake after bid opening that would cause such offeror to have the low bid unless the mistake in the judgment of the Procurement Officer is clearly evident from examining the bid document; for example, extension of unit prices or errors in addition.

   b) Cancellation of awards prior to performance: When it is determined after an award has been issued but before performance has begun that Georgetown County's requirements for the goods or services have changed or have not been met, the award or contract may be canceled and either reawarded or a new solicitation issued.

10. Faxed or E-mailed bids will not be accepted by Georgetown County.

11. If you need any reasonable accommodation for any type of disability in order to participate in this procurement, please contact the purchasing office as soon as possible.

12. Any deviations from the specifications or modification of this bid and any extra or incidental work or reductions in work shall be set forth in writing and signed by both parties prior to making such change. Any increase or decrease in the bid price resulting from such change shall be included in writing.

13. Exceptions: The bidder shall list on a separate sheet of paper any variations from, or exceptions to, the conditions and specifications of this bid. This sheet shall be labeled "Exception(s) to Bid Conditions and Specifications," and shall be attached to the bid. When Proposers find instances where they must take exception with certain requirements or specifications of the bid, all exceptions shall be clearly identified. Written explanations shall include the scope of the exceptions, the ramifications of the exceptions for the County of Georgetown, and a description of the advantage to be gained or disadvantages to be incurred by the County as a result of these exceptions. If none, write "NONE".

14. Georgetown County reserves the right to reject any or all bids, and to waive as an informality any irregularities contained in any bid as may be deemed in the best interest of the County. Georgetown County further reserves the right to reject any bid submitted, at its sole option, that the vendor may not be able to meet the service requirements of the bid.

15. Publicity releases: contractor agrees not to refer to award of any resulting contract in commercial advertising in such a manner as to state or imply that the products or services provided are endorsed or preferred by the user.

16. Material Safety Data Sheets: The County of Georgetown will not receive any materials, products, or chemicals which may be hazardous to an employee's health unless accompanied by a Material Data Sheet when received.

17. Ownership of Copyright: All right, title and interest in all copyrightable materials which vendor shall create in the performance of its obligations hereunder shall be the property of the procurer. Vendor agrees to assign and hereby does assign any and all interest it has in and to such material to procurer. Vendor agrees, upon the request of procurer to execute all papers and perform all other such acts necessary to assist procurer to obtain and register copyrights on such materials. Where applicable, works of authorship created by the vendor in the performance of its obligations hereunder, shall be considered "works for hire" as defined in the U.S. Copyright Act.

18. Ownership of Documents: Any reports, studies, photographs, negatives or other documents prepared by vendor in the performance of its obligations shall be the exclusive property of the procurer and all such material shall be remitted to the procurer by the vendor upon completion, termination or cancellation of this order. Vendor shall not use, willingly allow or cause to have such material used for any purpose other than performance of its obligations under this order without the prior written consent of the procurer.

19. Affirmative Action: The contractor will take affirmative action in complying with all Federal and State requirements concerning fair employment and employment of the handicapped, and concerning the treatment of all employees, without regard or discrimination by reason of age, race, color, religion, sex, national origin or physical handicap. The following are incorporated herein by reference: 41 C.F.R. 60-1.4, 60-250.4 and 60-741.4.

20. Inclusion and participation of disadvantaged, small, and local business entities is strongly encouraged, but minimum participation standards are not in effect for this project.

21. All Construction Contracts Over $2,000:

a) Davis-Bacon Requirements. These contracts need to include a provision for compliance with the Davis-Bacon Act (40 USC 276a to a—7) and the Department of Labor implementing regulations (29 CFR Part 5). Under this Act, Contractors are required to include the contract provisions in Section 5.5 (a) of 29 CFR Part 5, and to pay wages to laborers and mechanics at a rate not less than the minimum wages specified in the wage determination made by the Secretary of Labor. In addition, Contractors shall be required to pay wages not less than the minimum wages specified in the wage determination made by the Secretary of Labor. In addition, Contractors shall be required to pay wages not less often than once a week. Current Wage Determination for Georgetown County in South Carolina is available on-line at: http://www.wdol.gov/dba.aspx#14

b) Contract Work Hours and Safety Standard Act Requirements. The contracts must include a provision for compliance with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 USC 327-330) as supplemented by the Department of Labor regulations (29 CFR Part 5). Under Section 103 of the Act, each Contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard workweek of 40 hours. Work in excess of the standard workweek is permissible provided that the worker is compensated at a rate not less than one times the basic rate of pay for all hours worked in excess of 40 hours in the workweek. Section 107 of the Act is applicable to construction work and provides that no laborer of mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to health and safety as determined under construction, safety and health standards promulgated by the Secretary of Labor. These requirements do not apply to the purchases of supplies, materials, or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

c) Copeland "Anti-Kickback" Act Requirements. All construction contracts over $2,000.00 must include a provision for compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR Part 3). This act provides that each Contractor shall be prohibited from inducing, by any means, persons employed in the construction, completion, or repaid of public work to give up any part of their compensation.

22. Bidders must clearly mark as "confidential" each part of their bid which they consider to be proprietary information that could be exempt from disclosure under section 30-4-40, Code of Laws of South Carolina 1976, as amended (Freedom of Information Act). If any part is designated as confidential, there must be attached to that part an explanation of how this information fits within one or more categories listed in section 30-4-40. The County reserves the right to determine whether this information should be exempt from disclosure and no legal action may be brought against the County or its agents for its determination in this regard.

23. CERTIFICATION REGARDING DRUG-FREE WORKPLACE:
The contractor certifies that the vendor(s) will provide a "drug-free workplace" as that term is defined in Section 44-107-30 of the Code of Laws of South Carolina, 1976, as amended, by the complying with the requirements set forth in title 44, Chapter 107.

24. Certification of Non-Segregated Facilities
The federally-assisted construction contractor 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 construction contractor 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 construction contractor 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 rooms, 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 on the basis of race, color, religion, or national origin because of habit, local custom, or any other reason. The federally assisted construction contractor agrees that (except where he has obtained identical certifications from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractor s prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity Clause and that he will retain such certifications in his files.

25. Nothing herein is intended to exclude any responsible vendor, his product or service or in any way restrain or restrict competition. On the contrary, all responsible vendors are encouraged to bid and their bids are solicited.

26. Acknowledgement of Addenda
Each contractor is responsible to verify the number of total addenda issued prior to bid. **Failure to acknowledge all addenda may disqualify the bidder.** All addenda are posted by the County at the website located at www.georgetowncountysc.org, select “Purchasing” and “Current Bids”. It is each proposer’s responsibility to verify that all addenda have been received and acknowledged.

27. Bids must be made on Proposal or Bid Form furnished or will be rejected. Proposals shall be typewritten or written in ink on the form prepared by the County. The person signing the bid shall initial all corrections or erasures.

28. Insurance
The successful bidder shall procure, maintain, and provide proof of, insurance coverage for injuries to persons and/or property damage as may arise from or in conjunction with, the work performed on behalf of the County by the bidder, his agents, representatives, employees or subcontractors. Proof of coverage as contained herein shall be submitted fifteen (15) days prior to the commencement of work and such coverage shall be maintained by the bidder for the duration of the contract period; for occurrence policies.

a. General Liability

Coverage shall be as broad as: Comprehensive General Liability endorsed to include Broad Form, Commercial General Liability form including Products/Completed Operations.

1. Minimum Limits

General Liability:
$1,000,000 General Aggregate Limit
$1,000,000 Products & Completed Operations
$1,000,000 Personal and Advertising Injury
$1,000,000 Each Occurrence Limit
$50,000 Fire Damage Limit
$5,000 Medical Expense Limit

b. Automobile Liability

Coverage sufficient to cover all vehicles owned, used, or hired by the bidder, his agents, representatives, employees or subcontractors.

1. Minimum Limits
Automobile Liability:

$1,000,000 Combined Single Limit
$1,000,000 Each Occurrence Limit
$5,000 Medical Expense Limit

c. Workers' Compensation

Limits as required by the Workers' Compensation Act of SC. Employers Liability, $1,000,000.

d. Owners' & Contractors' Protective Liability

Policy will be in name of County. Minimum limits required are $1,000,000.

e. Professional Liability

Minimum limits are $1,000,000 per occurrence.

f. Coverage Provisions

1. All deductibles or self-insured retention shall appear on the certificate(s).
2. The County of Georgetown, its officers/ officials, employees, agents and volunteers shall be added as "additional insured" as their interests may appear. This provision does not apply to Professional Liability or Workers' Compensation/Employers' Liability.
3. The offeror's insurance shall be primary over any applicable insurance or self-insurance maintained by the County.
4. Shall provide 30 days written notice to the County before any cancellation, suspension, or void of coverage in whole or part, where such provision is reasonable.
5. All coverage for subcontractors of the bidder shall be subject to all of the requirements stated herein.
6. All deductibles or self-insured retention shall appear on the certificate(s) and shall be subject to approval by the County. At the option of the County, either; the insurer shall reduce or eliminate such deductible or self-insured retention; or the bidder shall be required to procure a bond guaranteeing payment of losses and related claims expenses.
7. Failure to comply with any reporting provisions of the policy(s) shall not affect coverage provided the County, its officers/officials, agents, employees and volunteers.
8. The insurer shall agree to waive all rights of subrogation against the County, its' officers/officials, agents, employees or volunteers for any act, omission or condition of premises which the parties may be held liable by reason of negligence.
9. The bidder shall furnish the County certificates of insurance including endorsements affecting coverage. The certificates are to be signed by a person authorized by the insurance company(s) to bind coverage on its' behalf, if executed by a broker, notarized copy of authorization to bind, or certify coverage must be attached.

10. All insurance shall be placed with insurers maintaining an A.M. Best rating of no less than an A:VII. If A.M. Best rating is less than A:VII, approval must be received from County's Risk Officer.

29. Workman's Compensation Coverage

Georgetown County, SC will require each contractor and service provider to maintain on file with the purchasing officer, a current Certificate of Insurance showing limits as required by the Workers' Compensation Act of SC: Employers Liability, $1,000,000.

The law also recognizes "statutory employees." These are employees who work for a subcontractor who may be working for a business or another contractor. Employers should inquire whether or not a subcontractor working for them has workers' compensation insurance, regardless of the number of employees employed by the subcontractor. If the subcontractor does not, the subcontractor's injured employees would be covered under the employer's workers' compensation insurance. If the subcontractor does not carry workers' compensation insurance, then the owner or the principal contractor would be liable just as if the subcontractor's employee was one of their employees.

For answers to additional questions, visit the SC Worker's Compensation Commission website, at:
http://www.wcc.sc.gov/Pages/FrequentlyAskedQuestions.aspx#emp1

30. Hold Harmless Clause

The Contractor shall, during the term of the contract including any warranty period, indemnify, defend, and hold harmless the County, its officials, employees, agents, and representatives thereof from all suits, actions, or claims of any kind, including attorney's fees, brought on account of any personal injuries, damages, or violations of rights, sustained by any person or property in consequence of any neglect in safeguarding contract work or on account of any act or omission by the contractor or his employees, or from any claims or amounts arising from violation of any law, bylaw, ordinance, regulation or decree. The vendor agrees that this clause shall include claims involving infringement of patent or copyright.

31. Condition of Items

All items shall be new, in first class condition, including containers suitable for shipment and storage, unless otherwise indicated herein. Verbal agreements to the contrary will not be recognized.

32. Workmanship and Inspection

All work under this contract shall be performed in a skillful and workmanlike manner. The County may, in writing, require the Contractor to remove any employee from work that the County deems incompetent or careless.

Further, the County may, from time to time, make inspections of the work performed under this contract. Any inspection by the County does not relieve the Contractor from any responsibility regarding defects or other failures to meet the contract requirements.

33. Invoicing and Payment

The firm shall submit invoices on a frequency to be determined, as agreed upon by the County, for each payment requested. Such invoice shall also include a detailed breakdown of all charges. All such invoices will be paid within thirty (30) days unless any items thereon are questioned, in which event payment will be withheld pending verification of the amount claimed and the validity of the claim. The firm shall provide complete cooperation during any such investigation. All invoices shall be forwarded to the following address:

County of Georgetown
Accounts Payable
P.O. Box 421270
Georgetown, SC 29442-1270

Individual contractors shall provide their social security numbers, and proprietorships, partnerships, and corporations shall provide their federal employer identification number on the pricing form.

34. Progress Payments

Contractor's Application for Payment shall be submitted to the Owner on such other form as may be mutually agreed upon. The period covered by each Application for Payment shall be not less than one calendar month. The Owner shall make progress payments to the Contractor on undisputed amounts certified by the Architect or the Owner's Representative within twenty-one (21) days from receipt of the Application for Payment by the Owner in accordance with Title 29, Chapter 6 of the Code of Laws of South Carolina, 1976, as amended.

35. South Carolina Sales Tax

The County of Georgetown, SC is not exempt and pays the appropriate SC sales tax on all applicable purchases. Effective May 01, 2015, the sales tax rate will be 7% which includes a VAT for Georgetown County.

36. Assignment of Contract

This contract may not be assigned in whole or part without the written consent of the Purchasing Officer.

37. Termination

Subject to the provisions below, the contract may be terminated by the County upon thirty (30) days advance written notice to the other party; but if any work or service hereunder is in progress, but not completed as of the date of termination, then this contract may be extended upon written approval of the County until said work or services are completed and accepted.

a. Termination for Convenience

In the event that this contract is terminated or canceled upon request and for the convenience of the County, without the required thirty (30) days advance written notice, then the County shall negotiate reasonable termination costs, if applicable.

b. Termination for Cause

Termination by the County for cause, default or negligence on the part of the contractor shall be excluded from the foregoing provision; termination costs, if any, shall not apply. The thirty (30) days advance notice requirement is waived in the event of Termination for Cause.

c. Non-Appropriation:
It is understood and agreed by the parties that in the event funds are not appropriated in the current fiscal year or any subsequent fiscal years, this contract will become null and void and the County will only be required to pay for services completed to the satisfaction of the County.

38. Default

In case of default by the contractor, for any reason whatsoever, the County may procure the goods or services from another source and hold the contractor responsible for any resulting excess cost and may seek other remedies under law

39. Severability

In the event that any provision shall be adjudged or decreed to be invalid, such ruling shall not invalidate the entire Agreement but shall pertain only to the provision in question and the remaining provisions shall continue to be valid, binding and in full force and effect.

40. Applicable Laws

This Agreement sha1l be governed by and construed in accordance with the laws of the State of South Carolina, U.S.A.

41. Claims and Disputes:

All claims, disputes and other matters in question between parties arising out of, or relating to, this Agreement, or the breach thereof, shall be decided in the Circuit Court of the Fifteenth Judicial circuit in Georgetown County, South Carolina. By executing this Agreement, all parties specifically consent to venue and jurisdiction in Georgetown County, South Carolina and waive any right to contest jurisdiction and venue in said Court.

42. Rights of County

The County reserves the right to reject all or any part of any bid, waive informalities and award the contract to the lowest responsive and responsible bidder to best serve the interest of the County.

43. Award of Bid

In determining the lowest responsive and responsible bidder, in addition to price, there shall be considered the following:

(a) The ability, capacity and skill of the bidder to perform the contract.
(b) Whether the bidder can perform the contract within the time specified, without delay of interference.
(c) The character, integrity, reputation, judgment, experience and efficiency of the bidder.
(d) The quality of performance on previous contracts.
(e) The previous and existing compliance by the bidder with laws and ordinances relating to the contract.
(f) The sufficiency of the financial resources to perform the contract to provide the service.
(g) The quality, availability and adaptability of the supplies or contractual services to the particular use required.
(h) The ability of the bidder to provide future maintenance and service.
(i) The discount terms and conditions of the bid.
(j) Delivery time.

44. Notice of Award

A ***Notice of Intent to Award*** will be mailed to all respondents.

45. Protest

Bidders may refer to Sections 2-67, 2-73, and 2-74 of Ordinance #2008-09, also known as the Georgetown County, South Carolina Purchasing Policy to determine their remedies concerning this competitive process. The failure to be awarded a bid shall not be valid grounds for protest.

46. Debarment

By submitting a bid, the offeror certifies to the best of its knowledge and belief, that it and its principals, sub-contractors and assigns are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency A copy of the County's debarment procedure in accordance with

Section 2-68 of Ordinance #2008-09, also known as the Georgetown County, South Carolina Purchasing Policy is available upon request.

47. Firm Pricing for County Acceptance

Bid price must be firm for County acceptance for 90 days from bid opening date. "Discount from list," bids are not acceptable unless specifically requested.

48. Quotations to be F.O.B.: Destination

Quote F.O.B.: Destination for this competitive sealed bid. As an alternate, show exact cost for delivery.

49. Unit Prices and Extension

Bid unit price on quantity specified -- extend and show total. In case of errors in extension, unit prices shall govern. Bids subject to unlimited price increases will not be considered.

50. Use of Brand Names (If Appropriate)

Unless otherwise stated in an Invitation for Bid, the name of a certain brand, make or manufacturer does not restrict bidders to the specific brand, make or manufacturer named; it conveys the general style, type, character, and quality of the article desired, and any article which the County in its sole discretion determines to be the equal of that specified, considering quality, workmanship, economy of operation, and suitability for the purpose intended, shall be accepted. Any catalog, brand name or manufacturer's reference used in bid invitation is descriptive - NOT restrictive - it is to indicate type and quality desired. Bids on brands of like nature and quality will be considered. If bidding on other than reference or specifications, bid must show manufacturer, brand or trade name, catalog number, etc. of article offered. If other than brand(s) specified is offered, illustrations and complete description must be submitted with bid. Samples may be required. If bidder makes no other bid and takes no exception to specifications or reference data, he will be required to furnish brand names, numbers, etc., as specified. Bidders must certify that item(s) bid upon meet and/or exceed specifications.

51. Permits

The successful Offeror must be responsible for obtaining all necessary city, county, and state permits/licenses and must comply with all local codes and ordinances. Copies of such permits/licenses shall be made available to the County upon request. Building contractors working within Georgetown County must also secure a Contractor's License from the Building Department. Work within the Georgetown City Limits may require a City Business License. For additional information, please review the "Forms and Fees" section of the Building and Planning web page at the link below:

http://www.georgetowncountysc.org/building/default.html

52. Environmental Management:

Vendor/Supplier/Contractor will be responsible for complying with all federal, state and local environmental regulations relating to transportation, handling, storage, spillage and any other aspect of providing the services specified herein, as applicable.

53. Bid Tabulation Results

Vendors wishing to view the bid tabulation results may visit the Georgetown County, SC web-site at: http://www.gtcounty.org. Select "Purchasing", then "Bids Under Review" and double click the link under the individual bid listing.

54. The Bidder hereby certifies that he or she has carefully examined all of the Documents for the project, has carefully and thoroughly reviewed this Request for Bid/Quotation, has inspected the location of the project (if applicable), and understands the nature and scope of the work to be done;

and that this Bid is based upon the terms, specifications, requirements, and conditions of the Request for Bid/ Documents. The Bidder further agrees that the performance time specified is a reasonable time, having carefully considered the nature and scope of the project as aforesaid.

55. Any attempt by the vendor to influence the opinion of County Staff or County Council by discussion, promotion, advertising, misrepresentation of the submittal or purchasing process or any procedure to promote their offer will constitute a violation of the vendor submittal conditions and will cause the vendor's submittal to be declared null and void.

56. Apparent omission of a detailed description concerning any point, shall be regarded as meaning the best commercial practice is to prevail and that only material and workmanship of the finest quality are to be used.

57. Response Clarification
Georgetown County reserves the right to request additional written or oral information from Bidders in order to obtain clarification of their Responses.

58. Due to FAA grant requirements there will be NO Local Preference considered in the award of this bid.

59. Vendor Checklist
The items indicated below must be returned as a part of the Bid Submission package:

- Bid Bond
- Proposal Requirements & Conditions Agreement (A-1 to A-3)
- Certification of Non-Segregated Facilities (A-4)
- Certification of Offeror/Bidder Regarding Tax Delinquency and Felony Convictions (A-5)
- Trade Restriction Clause (A-6 to A-7)
- Certification Regarding Debarment and Suspension (A-8)
- Lobbying and Influencing Federal Officials (A-9)
- Certificate of Buy American Compliance for Manufactured Products (A-10 and A-11)
- Form of Non-Collusion Affidavit (A-12)
- Evidence of Competency and Financial Responsibility (A-13)
- Base Bid Prices (BF-1, BF-2, BF-3)
- Disadvantaged Business Enterprises (DBE) Committal Sheet (B-16)
- DBE Subcontractor Data (B-17)
- DBE Contract Schedule (B-18)
- Identified Unavailable DBEs (B-19)
- Substitute for Form W-9
- Mandatory Bid Submittal Form
- Mandatory Exceptions Page

The successful proposer will be required to provide a Certificate of Insurance naming Georgetown County, SC as an additional insured. This must be on file prior to any final award.

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SUBSTITUTE FOR FORM W-9
MANDATORY BID SUBMISSION FORM

Pursuant to Internal Revenue Service Regulations, you must furnish your Taxpayer Identification Number (TIN) to Georgetown County. If this number is not provided, you may be subject to a withholding on each payment.

INDIVIDUAL OR OWNER'S NAME _____
(Sole Proprietor Must Provide Individual Name along with Business Name)

LEGAL BUSINESS NAME (d/b/a): _____

ADDRESS: (_____

(_____

(_____

9 DIGIT TAXPAYER IDENTIFICATION NUMBER (TIN)

(Individual Must Provide SS#; Sole Proprietorship may provide SS# or EIN#)

Social Security Number ___ ___ ___ - ___ ___ - ___ ___ ___ ___

Employer Identification Number ___ ___ - ___ ___ ___ ___ ___ ___ ___

BUSINESS DESIGNATION

☐ Individual, Sole Proprietor, or Single-Member LLC ☐ C-Corporation

☐ S-Corporation ☐ Partnership

☐ Trust/Estate ☐ Governmental Entity

☐ Non-Profit Organization/501(a) ☐ Other:_____

☐ Limited Liability Company (Must Circle the appropriate Tax Classification):
C = Corporation S = S Corporation P = Partnership

PRINCIPAL BUSINESS ACTIVITY (List Type of Service or Product Provided):

_____

☐ MEDICAL SERVICES PROVIDER ☐ ATTORNEY/LEGAL SERVICES PROVIDER

CERTIFICATION Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person; and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. *The Internal Revenue Service does not require your consent to any provision of this document other than the certifications required to avoid back-up withholding.*

Signature: _____ Date_____

MANDATORY BID SUBMITTAL FORM
RFP #18-040
Apron Expansion, Phase IV at Georgetown County Airport (GGE)

The undersigned, on behalf of the vendor, certifies that: (1) this bid is made without previous understanding, agreement or connection with any person, firm or corporation making a bid on the same project; (2) is in all respects fair and without collusion or fraud;(3) the person whose signature appears below is legally empowered to bind the firm in whose name the bid is entered (4) they have read the complete Request for Bid and understand and accept all provisions: (5) if accepted by the County, this bid is guaranteed as written and amended and will be implemented as stated; and (6) mistakes in writing of the submitted bid will be their responsibility.

1. Name of Company submitting bid _____
2. **Total BASE Bid, from Project Manual form BF-3**: **$** _____
3. Bid cost must remain valid ninety (90) days from bid opening date.
4. Mobilization (number of days for mobilization after NTP): _____
5. Contact Address:_____

   _____
6. Contact Person _____
7. Telephone Number _____Fax Number_____
8. E-Mail address _____
9. Remittance Address: _____

   _____
10. Accounting Contact _____
11. Telephone Number _____Fax Number_____
12. E-Mail address _____
13. FEIN or Social Security Number: _____
14. Suspension and Debarment

    Federal guidelines require grant recipients to obtain sufficient assurance that vendors are not suspended or debarred from participating in federal programs when contracts exceed $25,000. By signing below you verify that no party to this agreement is excluded from receiving Federal contracts, certain subcontracts, and certain Federal financial and nonfinancial assistance and benefits, pursuant to the provisions of 31 U.S.C. 6101, note, E.O. 12549, E.O. 12689, 48 CFR

9.404, and each agency's codification of the Common Rule for Nonprocurement suspension and debarment. [See https://www.epls.gov/ for additional information.]

15. Acceptance of Invitation for Bid Content: The contents of the successful IFB/RPS are included as if fully reproduced herein. Therefore, the selected contractor must be prepared to be bound by his/her proposal as submitted.

16. RENEWAL OF CONTRACT

The continuation of the terms, conditions, and provisions of any resulting contract beyond the fiscal year is subject to approval and ratification by the Georgetown County Council and appropriation by them of the necessary money to fund said contract for each succeeding year.

17. CERTIFICATION REGARDING DRUG-FREE WORKPLACE:
The undersigned certifies that the vendor listed below will provide a "drug-free workplace" as that term is defined in Section 44-107-30 of the Code of Laws of South Carolina, 1976, as amended, by the complying with the requirements set forth in title 44, Chapter 107.

☐ **Yes** ☐ **No**

18. Any attempt by the vendor to influence the opinion of County Staff or County Council by discussion, promotion, advertising, misrepresentation of the submittal or purchasing process or any procedure to promote their offer will constitute a violation of the vendor submittal conditions and will cause the vendor's submittal to be declared null and void.

19. The lowest or any proposal will not necessarily be accepted and the County reserves the right to award any portion thereof. I/We, the undersigned, hereby confirm that all the above noted documents for Bid/Request for Proposal No. 18-040 were received.

20. ILLEGAL IMMIGRATION: Construction
By signing its bid or proposal, Contractor certifies that it will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws and agrees to provide to the State upon request any documentation required to establish either: (a) that Title 8, Chapter 14 is inapplicable both to Contractor and its subcontractors or sub-subcontractors; or (b) that Contractor and its subcontractors or sub-subcontractors are in compliance with Title 8, Chapter 14. Pursuant to Section 8-14-60, "A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony, and, upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both." Contractor agrees to include in any contracts with its subcontractors language requiring its subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in their contracts with the sub-subcontractors language requiring the sub-subcontractors to comply with the applicable requirements of Title 8, Chapter 14. (An overview is available at www.procurement.sc.gov)

21. Printed Name of person binding bid _____

22. Signature (X)_____

23. Date_____

NOTE: Please be sure to provide the all Mandatory Forms and Attachments. Thank you.

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EXCEPTIONS PAGE

MANDATORY BID SUBMISSION FORM

List any areas where you cannot or will not comply with the specifications or terms contained within the bid documentation. If none, write "NONE".

GENERAL CONDITIONS

SECTION 10

DEFINITION OF TERMS

Whenever the following terms are used in these specifications, in the contract, or in any documents or other instruments pertaining to construction where these specifications govern, the intent and meaning shall be interpreted as follows:

10-01 **AASHTO**. The American Association of State Highway and Transportation Officials, the successor association to AASHO.

10-02 **Access Road**. The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public highway.

10-03 **Advertisement**. A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.

10-04 **Airport Improvement Program (AIP)**. A grant-in-aid program, administered by the Federal Aviation Administration (FAA).

10-05 **Air Operations Area (AOA)**. For the purpose of these specifications, the term air operations area (AOA) shall mean any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operation area shall include such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway, or apron.

10-06 ~~**Airport**. Airport means an area of land or water which is used or intended to be used for the landing and takeoff of aircraft; an appurtenant area used or intended to be used for airport buildings or other airport facilities or rights of way; and airport buildings and facilities located in any of these areas, and includes a heliport.~~ **SEE SUPPLEMENTAL GENERAL CONDITIONS 10-06.**

10-07 **ASTM International (ASTM)**. Formerly known as the American Society for Testing and Materials (ASTM).

10-08 **Award**. The OWNER's notice to the successful bidder of the acceptance of the submitted bid.

10-09 **Bidder**. Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.

10-10 **Building Area**. An area on the airport to be used, considered, or intended to be used for airport buildings or other airport facilities or rights-of-way together with all airport buildings and facilities located thereon.

10-11 **Calendar Day**. Every day shown on the calendar.

10-12 **Change Order**. A written order to the Contractor covering changes in the plans, specifications, or proposal quantities and establishing the basis of payment and contract time adjustment, if any, for the work affected by such changes. The work, covered by a change order, must be within the scope of the contract.

10-13 **Contract**. The written agreement covering the work to be performed. The awarded contract shall include, but is not limited to: Advertisement, Contract Form, Proposal, Performance Bond, Payment Bond, any required insurance certificates, Specifications, Plans, and any addenda issued to bidders.

10-14 **Contract Item (Pay Item)**. A specific unit of work for which a price is provided in the contract.

10-15 ~~**Contract Time**. The number of calendar days or working days, stated in the proposal, allowed for completion of the contract, including authorized time extensions. If a calendar date of completion is stated in the proposal, in lieu of a number of calendar or working days, the contract shall be completed by that date.~~ **SEE SUPPLEMENTAL GENERAL CONDITIONS 10-15.**

10-16 **Contractor**. The individual, partnership, firm, or corporation primarily liable for the acceptable performance of the work contracted and for the payment of all legal debts pertaining to the work who acts directly or through lawful agents or employees to complete the contract work.

10-17 **Contractor's Laboratory.** The Contractor's quality control organization in accordance with the Contractor Quality Control Program.

10-18 **Construction Safety and Phasing Plan (CSPP).** The overall plan for safety and phasing of a construction project developed by the airport operator, or developed by the airport operator's consultant and approved by the airport operator. It is included in the invitation for bids and becomes part of the project specifications.

10-19 **Drainage System**. The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.

10-20 ~~**Engineer**. The individual, partnership, firm, or corporation duly authorized by the OWNER to be responsible for engineering observation of the contract work and acting directly or through an authorized representative.~~ **SEE SUPPLEMENTAL GENERAL CONDITIONS 10-20.**

10-21 **Equipment**. All machinery, together with the necessary supplies for upkeep and maintenance, and also all tools and apparatus necessary for the proper

construction and acceptable completion of the work.

10-22 **Extra Work**. An item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, but which is found by the ENGINEER to be necessary to complete the work within the intended scope of the contract as previously modified.

10-23 **FAA**. The Federal Aviation Administration of the U.S. Department of Transportation. When used to designate a person, FAA shall mean the Administrator or his or her duly authorized representative.

10-24 **Federal Specifications**. The Federal Specifications and Standards, Commercial Item Descriptions, and supplements, amendments, and indices thereto are prepared and issued by the General Services Administration of the Federal Government.

10-25 **Force account.** Force account work is planning, engineering, or construction work done by the Sponsor's employees.

10-26 ~~**Inspector**. An authorized representative of the ENGINEER assigned to make all necessary observations and/or observation of tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.~~ **SEE SUPPLEMENTAL GENERAL CONDITIONS 10-26.**

10-27 **Intention of Terms**. Whenever, in these specifications or on the plans, the words "directed," "required," "permitted," "ordered," "designated," "prescribed," or words of like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the ENGINEER is intended; and similarly, the words "approved," "acceptable," "satisfactory," or words of like import, shall mean approved by, or acceptable to, or satisfactory to the ENGINEER, subject in each case to the final determination of the OWNER.

Any reference to a specific requirement of a numbered paragraph of the contract specifications or a cited standard shall be interpreted to include all general requirements of the entire section, specification item, or cited standard that may be pertinent to such specific reference.

10-28 **Laboratory**. The official testing laboratories of the OWNER or such other laboratories as may be designated by the ENGINEER. Also referred to as "ENGINEER's Laboratory" or "quality assurance laboratory."

10-29 **Lighting**. A system of fixtures providing or controlling the light sources used on or near the airport or within the airport buildings. The field lighting includes all luminous signals, markers, floodlights, and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or

taxiing on the airport surface.

10-30 **Major and Minor Contract Items**. A major contract item shall be any item that is listed in the proposal, the total cost of which is equal to or greater than 20% of the total amount of the award contract. All other items shall be considered minor contract items.

10-31 **Materials**. Any substance specified for use in the construction of the contract work.

10-32 **Notice to Proceed (NTP)**. A written notice to the Contractor to begin the actual contract work on a previously agreed to date. If applicable, the Notice to Proceed shall state the date on which the contract time begins.

10-33 ~~**Owner**. The term "OWNER" shall mean the party of the first part or the contracting agency signatory to the contract. Where the term "OWNER" is capitalized in this document, it shall mean airport Sponsor only.~~ **SEE SUPPLEMENTAL GENERAL CONDITIONS 10-33.**

10-34 **Passenger Facility Charge (PFC).** Per 14 CFR Part 158 and 49 USC § 40117, a PFC is a charge imposed by a public agency on passengers enplaned at a commercial service airport it controls."

10-35 **Pavement**. The combined surface course, base course, and subbase course, if any, considered as a single unit.

10-36 **Payment Bond**. The approved form of security furnished by the Contractor and his or her surety as a guaranty that the Contractor will pay in full all bills and accounts for materials and labor used in the construction of the work.

10-37 **Performance Bond**. The approved form of security furnished by the Contractor and his or her surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.

10-38 **Plans**. The official drawings or exact reproductions which show the location, character, dimensions and details of the airport and the work to be done and which are to be considered as a part of the contract, supplementary to the specifications.

10-39 **Project**. The agreed scope of work for accomplishing specific airport development with respect to a particular airport.

10-40 **Proposal**. The written offer of the bidder (when submitted on the approved proposal form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.

10-41 **Proposal Guaranty**. The security furnished with a proposal to guarantee that the bidder will enter into a contract if his or her proposal is accepted by the OWNER.

10-42 **Runway**. The area on the airport prepared for the landing and takeoff of aircraft.

10-43 **Specifications**. A part of the contract containing the written directions and requirements for completing the contract work. Standards for specifying materials or testing which are cited in the contract specifications by reference shall have the same force and effect as if included in the contract physically.

10-44 ~~**Sponsor**. A Sponsor is defined in 49 USC § 47102(24) as a public agency that submits to the FAA for an AIP grant; or a private Owner of a public-use airport that submits to the FAA an application for an AIP grant for the airport.~~ **SEE SUPPLEMENTAL GENERAL CONDITIONS 10-44.**

10-45 **Structures**. Airport facilities such as bridges; culverts; catch basins, inlets, retaining walls, cribbing; storm and sanitary sewer lines; water lines; underdrains; electrical ducts, manholes, handholes, lighting fixtures and bases; transformers; flexible and rigid pavements; navigational aids; buildings; vaults; and, other manmade features of the airport that may be encountered in the work and not otherwise classified herein.

10-46 **Subgrade**. The soil that forms the pavement foundation.

10-47 **Superintendent**. The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the ENGINEER, and who shall supervise and direct the construction.

10-48 **Supplemental Agreement**. A written agreement between the Contractor and the OWNER covering (1) work that would increase or decrease the total amount of the awarded contract, or any major contract item, by more than 25%, such increased or decreased work being within the scope of the originally awarded contract; or (2) work that is not within the scope of the originally awarded contract.

10-49 **Surety**. The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the OWNER by the Contractor.

10-50 **Taxiway**. For the purpose of this document, the term taxiway means the portion of the air operations area of an airport that has been designated by competent airport authority for movement of aircraft to and from the airport's runways, aircraft parking areas, and terminal areas.

10-51 **Work**. The furnishing of all labor, materials, tools, equipment, and incidentals necessary or convenient to the Contractor's performance of all duties and obligations imposed by the contract, plans, and specifications.

10-52 **Working day**. A working day shall be any day other than a legal holiday, Saturday, or Sunday on which the normal working forces of the Contractor may proceed with regular work for at least six (6) hours toward completion of the contract. When work is suspended for causes beyond the Contractor's control, it will not be counted as a working day. Saturdays, Sundays and holidays on which the Contractor's forces engage in regular work will be considered as working days.

END OF SECTION 10

SECTION 20

PROPOSAL REQUIREMENTS AND CONDITIONS

20-01 Advertisement (Notice to Bidders). The official Notice to Bidders stating work to be undertaken and the time and place for submission of proposals is contained in the Invitation to Bid/ Instruction to bidders.

20-02 ~~Qualification of Bidders~~. ~~Each bidder shall furnish the OWNER satisfactory evidence of his or her competency to perform the proposed work. Such evidence of competency, unless otherwise specified, shall consist of statements covering the bidder's past experience on similar work, a list of equipment that would be available for the work, and a list of key personnel that would be available. In addition, each bidder shall furnish the OWNER satisfactory evidence of his or her financial responsibility. Such evidence of financial responsibility, unless otherwise specified, shall consist of a confidential statement or report of the bidder's financial resources and liabilities as of the last calendar year or the bidder's last fiscal year. Such statements or reports shall be certified by a public accountant. At the time of submitting such financial statements or reports, the bidder shall further certify whether his or her financial responsibility is approximately the same as stated or reported by the public accountant. If the bidder's financial responsibility has changed, the bidder shall qualify the public accountant's statement or report to reflect the bidder's true financial condition at the time such qualified statement or report is submitted to the OWNER.~~

~~Unless otherwise specified, a bidder may submit evidence that he or she is prequalified with the State Highway Division and is on the current "bidder's list" of the state in which the proposed work is located. Such evidence of State Highway Division prequalification may be submitted as evidence of financial responsibility in lieu of the certified statements or reports specified above.~~

~~Each bidder shall submit "evidence of competency" and "evidence of financial responsibility" to the OWNER at the time of bid opening.~~ **SEE SUPPLEMENTATL GENERAL CONDITIONS 20-02.**

20-03 Contents of Proposal Forms. The OWNER shall furnish bidders with proposal forms. All papers bound with or attached to the proposal forms are necessary parts and must not be detached.

The plans, specifications, and other documents designated in the proposal form shall be considered a part of the proposal whether attached or not.

20-04 Issuance of Proposal Forms. The OWNER reserves the right to refuse to issue a proposal form to a prospective bidder should such bidder be in default for any of the following reasons:

a. Failure to comply with any prequalification regulations of the OWNER, if such regulations are cited, or otherwise included, in the proposal as a requirement for bidding.

b. Failure to pay, or satisfactorily settle, all bills due for labor and materials on former contracts in force with the OWNER at the time the OWNER issues the proposal to a prospective bidder.

c. Documented record of Contractor default under previous contracts with the OWNER.

d. Documented record of unsatisfactory work on previous contracts with the OWNER.

20-05 Interpretation of Estimated Proposal Quantities. An estimate of quantities of work to be done and materials to be furnished under these specifications is given in the proposal. It is the result of careful calculations and is believed to be correct. It is given only as a basis for comparison of proposals and the award of the contract. The OWNER does not expressly, or by implication, agree that the actual quantities involved will correspond exactly therewith; nor shall the bidder plead misunderstanding or deception because of such estimates of quantities, or of the character, location, or other conditions pertaining to the work. Payment to the Contractor will be made only for the actual quantities of work performed or materials furnished in accordance with the plans and specifications. It is understood that the quantities may be increased or decreased as hereinafter provided in the subsection 40-02 titled ALTERATION OF WORK AND QUANTITIES of Section 40 without in any way invalidating the unit bid prices.

20-06 Examination of Plans, Specifications, and Site. The bidder is expected to carefully examine the site of the proposed work, the proposal, plans, specifications, and contract forms. Bidders shall satisfy themselves as to the character, quality, and quantities of work to be performed, materials to be furnished, and as to the requirements of the proposed contract. The submission of a proposal shall be prima facie evidence that the bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work and as to the requirements of the proposed contract, plans, and specifications.

Boring logs and other records of subsurface investigations and tests are available for inspection of bidders and are included in Appendix F. It is understood and agreed that such subsurface information, whether included in the plans, specifications, or otherwise made available to the bidder, was obtained and is intended for the OWNER's design and estimating purposes only. Such information has been made available for the convenience of all

bidders. It is further understood and agreed that each bidder is solely responsible for all assumptions, deductions, or conclusions which the bidder may make or obtain from his or her examination of the boring logs and other records of subsurface investigations and tests that are furnished by the OWNER.

20-07 Preparation of Proposal. The bidder shall submit his or her proposal on the forms furnished by the OWNER. All blank spaces in the proposal forms must be correctly filled in where indicated for each and every item for which a quantity is given. The bidder shall state the price (written in ink or typed) both in words and numerals for which they propose to do for each pay item furnished in the proposal. In case of conflict between words and numerals, the words, unless obviously incorrect, shall govern.

The bidder shall sign the proposal correctly and in ink. If the proposal is made by an individual, his or her name and post office address must be shown. If made by a partnership, the name and post office address of each member of the partnership must be shown. If made by a corporation, the person signing the proposal shall give the name of the state under the laws of which the corporation was chartered and the name, titles, and business address of the president, secretary, and the treasurer. Anyone signing a proposal as an agent shall file evidence of his or her authority to do so and that the signature is binding upon the firm or corporation.

20-08 Responsive and Responsible Bidder. A responsive bid conforms to all significant terms and conditions contained in the Sponsor's invitation for bid. It is the Sponsor's responsibility to decide if the exceptions taken by a bidder to the solicitation are material or not and the extent of deviation it is willing to accept.

A responsible bidder has the ability to perform successfully under the terms and conditions of a proposed procurement, as defined in 49 CFR § 18.36(b)(8). This includes such matters as Contractor integrity, compliance with public policy, record of past performance, and financial and technical resources.

20-09 Irregular Proposals. Proposals shall be considered irregular for the following reasons:

a. If the proposal is on a form other than that furnished by the OWNER, or if the OWNER's form is altered, or if any part of the proposal form is detached.

b. If there are unauthorized additions, conditional or alternate pay items, or irregularities of any kind that make the proposal incomplete, indefinite, or otherwise ambiguous.

c. If the proposal does not contain a unit price for each pay item listed in the

proposal, except in the case of authorized alternate pay items, for which the bidder is not required to furnish a unit price.

d. If the proposal contains unit prices that are obviously unbalanced.

e. If the proposal is not accompanied by the proposal guaranty specified by the OWNER.

The OWNER reserves the right to reject any irregular proposal and the right to waive technicalities if such waiver is in the best interest of the OWNER and conforms to local laws and ordinances pertaining to the letting of construction contracts.

20-10 Bid Guarantee. Each separate proposal shall be accompanied by a certified check, or other specified acceptable collateral, in the amount specified in the proposal form. Such check, or collateral, shall be made payable to the OWNER.

20-11 Delivery of Proposal. Each proposal submitted shall be placed in a sealed envelope plainly marked with the project number, location of airport, and name and business address of the bidder on the outside. When sent by mail, preferably registered, the sealed proposal, marked as indicated above, should be enclosed in an additional envelope. No proposal will be considered unless received at the place specified in the advertisement or as modified by Addendum before the time specified for opening all bids. Proposals received after the bid opening time shall be returned to the bidder unopened.

20-12 Withdrawal or Revision of Proposals. A bidder may withdraw or revise (by withdrawal of one proposal and submission of another) a proposal provided that the bidder's request for withdrawal is received by the OWNER in writing or by fax or email before the time specified for opening bids. Revised proposals must be received at the place specified in the advertisement before the time specified for opening all bids.

20-13 Public Opening of Proposals. Proposals shall be opened, and read, publicly at the time and place specified in the advertisement. Bidders, their authorized agents, and other interested persons are invited to attend. Proposals that have been withdrawn (by written or telegraphic request) or received after the time specified for opening bids shall be returned to the bidder unopened.

20-14 Disqualification of Bidders. A bidder shall be considered disqualified for any of the following reasons:

a. Submitting more than one proposal from the same partnership, firm, or corporation under the same or different name.

b. Evidence of collusion among bidders. Bidders participating in such collusion

shall be disqualified as bidders for any future work of the OWNER until any such participating bidder has been reinstated by the OWNER as a qualified bidder.

c. If the bidder is considered to be in “default” for any reason specified in the subsection 20-04 titled ISSUANCE OF PROPOSAL FORMS of this section.

END OF SECTION 20

SECTION 30

AWARD AND EXECUTION OF CONTRACT

30-01 Consideration of Proposals. After the proposals are publicly opened and read, they will be compared on the basis of the summation of the products obtained by multiplying the estimated quantities shown in the proposal by the unit bid prices. If a bidder's proposal contains a discrepancy between unit bid prices written in words and unit bid prices written in numbers, the unit price written in words shall govern.

Until the award of a contract is made, the OWNER reserves the right to reject a bidder's proposal for any of the following reasons:

a. If the proposal is irregular as specified in the subsection 20-09 titled IRREGULAR PROPOSALS of Section 20.

b. If the bidder is disqualified for any of the reasons specified in the subsection 20-14 titled DISQUALIFICATION OF BIDDERS of Section 20.

In addition, until the award of a contract is made, the OWNER reserves the right to reject any or all proposals, waive technicalities, if such waiver is in the best interest of the OWNER and is in conformance with applicable state and local laws or regulations pertaining to the letting of construction contracts; advertise for new proposals; or proceed with the work otherwise. All such actions shall promote the OWNER's best interests.

30-02 Award of Contract. The award of a contract, if it is to be awarded, shall be made within **120** calendar days of the date specified for publicly opening proposals, unless otherwise specified herein.

Award of the contract shall be made by the OWNER to the lowest, qualified bidder whose proposal conforms to the cited requirements of the OWNER.

30-03 Cancellation of Award. The OWNER reserves the right to cancel the award without liability to the bidder, except return of proposal guaranty, at any time before a contract has been fully executed by all parties and is approved by the OWNER in accordance with the subsection 30-07 titled APPROVAL OF CONTRACT of this section.

30-04 Return of Proposal Guaranty. All proposal guaranties, except those of the two lowest bidders, will be returned immediately after the OWNER has made a comparison of bids as specified in the subsection 30-01 titled CONSIDERATION OF PROPOSALS of this section. Proposal guaranties of the two lowest bidders will be retained by the OWNER until such time as an award is made, at which time, the unsuccessful bidder's proposal guaranty will be

returned. The successful bidder's proposal guaranty will be returned as soon as the OWNER receives the contract bonds as specified in the subsection 30-05 titled REQUIREMENTS OF CONTRACT BONDS of this section.

30-05 Requirements of Contract Bonds. At the time of the execution of the contract, the successful bidder shall furnish the OWNER a surety bond or bonds that have been fully executed by the bidder and the surety guaranteeing the performance of the work and the payment of all legal debts that may be incurred by reason of the Contractor's performance of the work. The surety and the form of the bond or bonds shall be acceptable to the OWNER. Unless otherwise specified in this subsection, the surety bond or bonds shall be in a sum equal to the full amount of the contract.

30-06 Execution of Contract. The successful bidder shall sign (execute) the necessary agreements for entering into the contract and return the signed contract to the OWNER, along with the fully executed surety bond or bonds specified in the subsection 30-05 titled REQUIREMENTS OF CONTRACT BONDS of this section, within 15 calendar days from the date mailed or otherwise delivered to the successful bidder.

30-07 Approval of Contract. Upon receipt of the contract and contract bond or bonds that have been executed by the successful bidder, the OWNER shall complete the execution of the contract in accordance with local laws or ordinances, and return the fully executed contract to the Contractor. Delivery of the fully executed contract to the Contractor shall constitute the OWNER's approval to be bound by the successful bidder's proposal and the terms of the contract.

30-08 Failure to Execute Contract. Failure of the successful bidder to execute the contract and furnish an acceptable surety bond or bonds within the 15 calendar day period specified in the subsection 30-06 titled EXECUTION OF CONTRACT of this section shall be just cause for cancellation of the award and forfeiture of the proposal guaranty, not as a penalty, but as liquidation of damages to the OWNER.

END OF SECTION 30

SECTION 40

SCOPE OF WORK

40-01 Intent of Contract. The intent of the contract is to provide for construction and completion, in every detail, of the work described. It is further intended that the Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work in accordance with the plans, specifications, and terms of the contract.

40-02 Alteration of Work and Quantities. The OWNER reserves and shall have the right to make such alterations in the work as may be necessary or desirable to complete the work originally intended in an acceptable manner. Unless otherwise specified herein, the ENGINEER shall be and is hereby authorized to make such alterations in the work as may increase or decrease the originally awarded contract quantities, provided that the aggregate of such alterations does not change the total contract cost or the total cost of any major contract item by more than 25% (total cost being based on the unit prices and estimated quantities in the awarded contract). Alterations that do not exceed the 25% limitation shall not invalidate the contract nor release the surety, and the Contractor agrees to accept payment for such alterations as if the altered work had been a part of the original contract. These alterations that are for work within the general scope of the contract shall be covered by "Change Orders" issued by the ENGINEER. Change orders for altered work shall include extensions of contract time where, in the ENGINEER's opinion, such extensions are commensurate with the amount and difficulty of added work.

Should the aggregate amount of altered work exceed the 25% limitation hereinbefore specified, such excess altered work shall be covered by supplemental agreement. If the OWNER and the Contractor are unable to agree on a unit adjustment for any contract item that requires a supplemental agreement, the OWNER reserves the right to terminate the contract with respect to the item and make other arrangements for its completion.

Supplemental agreements shall be approved by the FAA and shall include all applicable Federal contract provisions for procurement and contracting required under AIP. Supplemental agreements shall also require consent of the Contractor's surety and separate performance and payment bonds.

40-03 Omitted Items. The ENGINEER may, in the OWNER's best interest, omit from the work any contract item, except major contract items. Major contract items may be omitted by a supplemental agreement. Such omission of contract items shall not invalidate any other contract provision or requirement.

Should a contract item be omitted or otherwise ordered to be non-performed, the Contractor shall be paid for all work performed toward completion of such

item prior to the date of the order to omit such item. Payment for work performed shall be in accordance with the subsection 90-04 titled PAYMENT FOR OMITTED ITEMS of Section 90.

40-04 Extra Work. Should acceptable completion of the contract require the Contractor to perform an item of work for which no basis of payment has been provided in the original contract or previously issued change orders or supplemental agreements, the same shall be called "Extra Work." Extra Work that is within the general scope of the contract shall be covered by written change order. Change orders for such Extra Work shall contain agreed unit prices for performing the change order work in accordance with the requirements specified in the order, and shall contain any adjustment to the contract time that, in the ENGINEER's opinion, is necessary for completion of such Extra Work.

When determined by the ENGINEER to be in the OWNER's best interest, the ENGINEER may order the Contractor to proceed with Extra Work as provided in the subsection 90-05 titled PAYMENT FOR EXTRA WORK of Section 90. Extra Work that is necessary for acceptable completion of the project, but is not within the general scope of the work covered by the original contract shall be covered by a Supplemental Agreement as defined in the subsection 10-48 titled SUPPLEMENTAL AGREEMENT of Section 10.

Any claim for payment of Extra Work that is not covered by written agreement (change order or supplemental agreement) shall be rejected by the OWNER.

40-05 Maintenance of Traffic. It is the explicit intention of the contract that the safety of aircraft, as well as the Contractor's equipment and personnel, is the most important consideration.

a. It is understood and agreed that the Contractor shall provide for the free and unobstructed movement of aircraft in the air operations areas (AOAs) of the airport with respect to his or her own operations and the operations of all subcontractors as specified in the subsection 80-04 titled LIMITATION OF OPERATIONS of Section 80. It is further understood and agreed that the Contractor shall provide for the uninterrupted operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft while operating to, from, and upon the airport as specified in the subsection 70-15 titled CONTRACTOR'S RESPONSIBILITY FOR UTILITY SERVICE AND FACILITIES OF OTHERS in Section 70.

b. With respect to his or her own operations and the operations of all subcontractors, the Contractor shall provide marking, lighting, and other acceptable means of identifying personnel, equipment, vehicles, storage areas, and any work area or condition that may be hazardous to the operation of aircraft, fire-rescue equipment, or maintenance vehicles at the

airport.

c. When the contract requires the maintenance of vehicular traffic on an existing road, street, or highway during the Contractor's performance of work that is otherwise provided for in the contract, plans, and specifications, the Contractor shall keep such road, street, or highway open to all traffic and shall provide such maintenance as may be required to accommodate traffic. The Contractor shall be responsible for the repair of any damage caused by the Contractor's equipment and personnel. The Contractor shall furnish, erect, and maintain barricades, warning signs, flag person, and other traffic control devices in reasonable conformity with the Manual on Uniform Traffic Control Devices (MUTCD) (http://mutcd.fhwa.dot.gov/), unless otherwise specified. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways.

40-06 ~~**Removal of Existing Structures**. All existing structures encountered within the established lines, grades, or grading sections shall be removed by the Contractor, unless such existing structures are otherwise specified to be relocated, adjusted up or down, salvaged, abandoned in place, reused in the work or to remain in place. The cost of removing such existing structures shall not be measured or paid for directly, but shall be included in the various contract items.~~

~~Should the Contractor encounter an existing structure (above or below ground) in the work for which the disposition is not indicated on the plans, the ENGINEER shall be notified prior to disturbing such structure. The disposition of existing structures so encountered shall be immediately determined by the ENGINEER in accordance with the provisions of the contract.~~

~~Except as provided in the subsection 40-07 titled RIGHTS IN AND USE OF MATERIALS FOUND IN THE WORK of this section, it is intended that all existing materials or structures that may be encountered (within the lines, grades, or grading sections established for completion of the work) shall be used in the work as otherwise provided for in the contract and shall remain the property of the OWNER when so used in the work.~~ **SEE SUPPLEMENTATL GENERAL CONDITIONS 40-06.**

40-07 **Rights In and Use of Materials Found in the Work**. Should the Contractor encounter any material such as (but not restricted to) sand, stone, gravel, slag, or concrete slabs within the established lines, grades, or grading sections, the use of which is intended by the terms of the contract to be either embankment or waste, the Contractor may at his or her option either:

a. Use such material in another contract item, providing such use is approved

by the ENGINEER and is in conformance with the contract specifications applicable to such use; or,

b. Removes such material from the site, upon written approval of the ENGINEER; or

c. Use such material for the Contractor's own temporary construction on site; or,

d. Use such material as intended by the terms of the contract.

Should the Contractor wish to exercise option a., b., or c., the Contractor shall request the ENGINEER's approval in advance of such use.

Should the ENGINEER approve the Contractor's request to exercise option a., b., or c., the Contractor shall be paid for the excavation or removal of such material at the applicable contract price. The Contractor shall replace, at his or her own expense, such removed or excavated material with an agreed equal volume of material that is acceptable for use in constructing embankment, backfills, or otherwise to the extent that such replacement material is needed to complete the contract work. The Contractor shall not be charged for use of such material used in the work or removed from the site.

Should the ENGINEER approve the Contractor's exercise of option a., the Contractor shall be paid, at the applicable contract price, for furnishing and installing such material in accordance with requirements of the contract item in which the material is used.

It is understood and agreed that the Contractor shall make no claim for delays by reason of his or her exercise of option a., b., or c.

The Contractor shall not excavate, remove, or otherwise disturb any material, structure, or part of a structure which is located outside the lines, grades, or grading sections established for the work, except where such excavation or removal is provided for in the contract, plans, or specifications.

40-08 **Final Cleanup**. Upon completion of the work and before acceptance and final payment will be made, the Contractor shall remove from the site all machinery, equipment, surplus and discarded materials, rubbish, temporary structures, and stumps or portions of trees. The Contractor shall cut all brush and woods within the limits indicated and shall leave the site in a neat and presentable condition. Material cleared from the site and deposited on adjacent property will not be considered as having been disposed of satisfactorily, unless the Contractor has obtained the written permission of such property OWNER.

END OF SECTION 40

SECTION 50

CONTROL OF WORK

50-01 Authority of the ENGINEER. The ENGINEER shall decide any and all questions which may arise as to the quality and acceptability of materials furnished, work performed, and as to the manner of performance and rate of progress of the work. The ENGINEER shall decide all questions that may arise as to the interpretation of the specifications or plans relating to the work. The ENGINEER shall determine the amount and quality of the several kinds of work performed and materials furnished which are to be paid for the under contract.

The ENGINEER does not have the authority to accept pavements that do not conform to FAA specification requirements.

50-02 Conformity with Plans and Specifications. All work and all materials furnished shall be in reasonably close conformity with the lines, grades, grading sections, cross-sections, dimensions, material requirements, and testing requirements that are specified (including specified tolerances) in the contract, plans or specifications.

If the ENGINEER finds the materials furnished, work performed, or the finished product not within reasonably close conformity with the plans and specifications but that the portion of the work affected will, in his or her opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the OWNER, the ENGINEER will advise the OWNER of his or her determination that the affected work be accepted and remain in place. In this event, the ENGINEER will document the determination and recommend to the OWNER a basis of acceptance that will provide for an adjustment in the contract price for the affected portion of the work. The ENGINEER's determination and recommended contract price adjustments will be based on sound engineering judgment and such tests or retests of the affected work as are, in the ENGINEER's opinion, needed. Changes in the contract price shall be covered by contract change order or supplemental agreement as applicable.

If the ENGINEER finds the materials furnished, work performed, or the finished product are not in reasonably close conformity with the plans and specifications and have resulted in an unacceptable finished product, the affected work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the ENGINEER's written orders.

For the purpose of this subsection, the term "reasonably close conformity" shall not be construed as waiving the Contractor's responsibility to complete the work in accordance with the contract, plans, and specifications. The term shall not be construed as waiving the ENGINEER's responsibility to insist on strict compliance with the requirements of the contract, plans, and specifications

during the Contractor's execution of the work, when, in the ENGINEER's opinion, such compliance is essential to provide an acceptable finished portion of the work.

For the purpose of this subsection, the term "reasonably close conformity" is also intended to provide the ENGINEER with the authority, after consultation with the FAA, to use sound engineering judgment in his or her determinations as to acceptance of work that is not in strict conformity, but will provide a finished product equal to or better than that intended by the requirements of the contract, plans and specifications.

The ENGINEER will not be responsible for the Contractor's means, methods, techniques, sequences, or procedures of construction or the safety precautions incident thereto.

50-03 Coordination of Contract, Plans, and Specifications. The contract, plans, specifications, and all referenced standards cited are essential parts of the contract requirements. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy, calculated dimensions will govern over scaled dimensions; contract technical specifications shall govern over contract general provisions, plans, cited standards for materials or testing, and cited advisory circulars (ACs); contract general provisions shall govern over plans, cited standards for materials or testing, and cited ACs; plans shall govern over cited standards for materials or testing and cited ACs. If any paragraphs contained in the Special Provisions conflict with General Provisions or Technical Specifications, the Special Provisions shall govern.

From time to time, discrepancies within cited testing standards occur due to the timing of the change, edits, and/or replacement of the standards. If the Contractor discovers any apparent discrepancy within standard test methods, the Contractor shall immediately ask the ENGINEER for an interpretation and decision, and such decision shall be final.

50-04 Cooperation of Contractor. The Contractor will be supplied with five copies each of the plans and specifications. The Contractor shall have available on the work at all times one copy each of the plans and specifications. Additional copies of plans and specifications may be obtained by the Contractor for the cost of reproduction.

The Contractor shall give constant attention to the work to facilitate the progress thereof, and shall cooperate with the ENGINEER and his or her inspectors and with other contractors in every way possible. The Contractor shall have a competent superintendent on the work at all times who is fully authorized as his or her agent on the work. The superintendent shall be capable of reading and thoroughly understanding the plans and specifications and shall

receive and fulfill instructions from the ENGINEER or his or her authorized representative.

50-05 Cooperation Between Contractors. The OWNER reserves the right to contract for and perform other or additional work on or near the work covered by this contract.

When separate contracts are let within the limits of any one project, each Contractor shall conduct the work so as not to interfere with or hinder the progress of completion of the work being performed by other Contractors. Contractors working on the same project shall cooperate with each other as directed.

Each Contractor involved shall assume all liability, financial or otherwise, in connection with his or her contract and shall protect and save harmless the OWNER from any and all damages or claims that may arise because of inconvenience, delays, or loss experienced because of the presence and operations of other Contractors working within the limits of the same project.

The Contractor shall arrange his or her work and shall place and dispose of the materials being used so as not to interfere with the operations of the other Contractors within the limits of the same project. The Contractor shall join his or her work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

50-06 Construction Layout and Stakes. The ENGINEER shall establish horizontal and vertical control only. The Contractor must establish all layout required for the construction of the work. Such stakes and markings as the ENGINEER may set for either their own or the Contractor's guidance shall be preserved by the Contractor. In case of negligence on the part of the Contractor, or their employees, resulting in the destruction of such stakes or markings, an amount equal to the cost of replacing the same may be deducted from subsequent estimates due the Contractor at the discretion of the ENGINEER.

The Contractor will be required to furnish all lines, grades and measurements from the control points necessary for the proper execution and control of the work contracted for under these specifications.

The Contractor must give copies of survey notes to the ENGINEER for each area of construction and for each placement of material as specified to allow the ENGINEER to make periodic checks for conformance with plan grades, alignments and grade tolerances required by the applicable material specifications. All surveys must be provided to the ENGINEER prior to commencing work items that will cover or disturb the survey staking as set by the Contractor's surveyor. Survey(s) and notes shall be provided in the following format(s): Electronic data files including point files and drawing files

in AutoCAD format. In the case of error, on the part of the Contractor, their surveyor, employees or subcontractors, resulting in established grades, alignment or grade tolerances that do not concur with those specified or shown on the plans, the Contractor is solely responsible for correction, removal, replacement and all associated costs at no additional cost to the OWNER.

No direct payment will be made, unless otherwise specified in contract documents, for this labor, materials, or other expenses. The cost shall be included in the price of the bid for the various items of the Contract.

Construction Staking and Layout includes but is not limited to:

a. Clearing and Grubbing perimeter staking
b. Rough Grade slope stakes at 100-foot stations
c. Drainage Swales slope stakes and flow line blue tops at 50-foot stations

Subgrade blue tops at 25-foot stations and 25-foot offset distance (maximum) for the following section locations:

a. Runway – minimum five (5) per station
b. Taxiways – minimum three (3) per station
c. Holding apron areas – minimum three (3) per station
d. Roadways – minimum three (3) per station

Base Course blue tops at 25-foot stations and 25-foot offset distance (maximum) for the following section locations:

a. Runway – minimum five (5) per station
b. Taxiways – minimum three (3) per station
c. Holding apron areas – minimum three (3) per station

Pavement areas:

a. Edge of Pavement hubs and tacks (for stringline by Contractor) at 100-foot stations.
b. Between Lifts at 25-foot stations for the following section locations:
  (1) Runways – each paving lane width
  (2) Taxiways – each paving lane width
  (3) Holding areas – each paving lane width
c. After finish paving operations at 50-foot stations:
  (1) All paved areas – Edge of each paving lane prior to next paving lot
d. Shoulder and safety area blue tops at 50-foot stations and at all break points with maximum of 50-foot offsets.
e. Fence lines at 100-foot stations minimum.
f. Electrical and Communications System locations, lines and grades including but not limited to duct runs, connections, fixtures, signs, lights,

Visual Approach Slope Indicators (VASIs), Precision Approach Path Indicators (PAPIs), Runway End Identifier Lighting (REIL), Wind Cones, Distance Markers (signs), pull boxes and manholes.

g. Drain lines, cut stakes and alignment on 25-foot stations, inlet and manholes.

h. Painting and Striping layout (pinned with 1.5 inch PK nails) marked for paint Contractor. (All nails shall be removed after painting).

i. Laser, or other automatic control devices, shall be checked with temporary control point or grade hub at a minimum of once per 400 feet per pass (that is, paving lane).

The establishment of Survey Control and/or reestablishment of survey control shall be by a State Licensed Land Surveyor.

Controls and stakes disturbed or suspect of having been disturbed shall be checked and/or reset as directed by the ENGINEER without additional cost to the OWNER.

50-07 Automatically Controlled Equipment. Whenever batching or mixing plant equipment is required to be operated automatically under the contract and a breakdown or malfunction of the automatic controls occurs, the equipment may be operated manually or by other methods for a period 48 hours following the breakdown or malfunction, provided this method of operations will produce results which conform to all other requirements of the contract.

50-08 Authority and Duties of Inspectors. Inspectors shall be authorized to inspect all work done and all material furnished. Such inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. Inspectors are not authorized to revoke, alter, or waive any provision of the contract. Inspectors are not authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor.

Inspectors are authorized to notify the Contractor or his or her representatives of any failure of the work or materials to conform to the requirements of the contract, plans, or specifications and to reject such nonconforming materials in question until such issues can be referred to the ENGINEER for a decision.

50-09 Inspection of the Work. All materials and each part or detail of the work shall be subject to inspection. The ENGINEER shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

If the ENGINEER requests it, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the specifications. Should the work thus

exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the works so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.

Any work done or materials used without supervision or inspection by an authorized representative of the OWNER may be ordered removed and replaced at the Contractor's expense unless the OWNER's representative failed to inspect after having been given reasonable notice in writing that the work was to be performed.

Should the contract work include relocation, adjustment, or any other modification to existing facilities, not the property of the (contract) OWNER, authorized representatives of the Owners of such facilities shall have the right to inspect such work. Such inspection shall in no sense make any facility owner a party to the contract, and shall in no way interfere with the rights of the parties to this contract.

50-10 Removal of Unacceptable and Unauthorized Work. All work that does not conform to the requirements of the contract, plans, and specifications will be considered unacceptable, unless otherwise determined acceptable by the ENGINEER as provided in the subsection 50-02 titled CONFORMITY WITH PLANS AND SPECIFICATIONS of this section.

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work, shall be removed immediately and replaced in an acceptable manner in accordance with the provisions of the subsection 70-14 titled CONTRACTOR'S RESPONSIBILITY FOR WORK of Section 70.

No removal work made under provision of this subsection shall be done without lines and grades having been established by the ENGINEER. Work done contrary to the instructions of the ENGINEER, work done beyond the lines shown on the plans or as established by the ENGINEER, except as herein specified, or any extra work done without authority, will be considered as unauthorized and will not be paid for under the provisions of the contract. Work so done may be ordered removed or replaced at the Contractor's expense.

Upon failure on the part of the Contractor to comply with any order of the ENGINEER made under the provisions of this subsection, the ENGINEER will have authority to cause unacceptable work to be remedied or removed and replaced and unauthorized work to be removed and to deduct the costs incurred by the OWNER from any monies due or to become due the Contractor.

50-11 **Load Restrictions**. The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the work. A special permit will not relieve the Contractor of liability for damage that may result from the moving of material or equipment.

The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor shall be responsible for all damage done by his or her hauling equipment and shall correct such damage at his or her own expense.

50-12 **Maintenance During Construction**. The Contractor shall maintain the work during construction and until the work is accepted. Maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the work is maintained in satisfactory condition at all times.

In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations.

All costs of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various contract items, and the Contractor will not be paid an additional amount for such work.

50-13 **Failure to Maintain the Work**. Should the Contractor at any time fail to maintain the work as provided in the subsection 50-12 titled MAINTENANCE DURING CONSTRUCTION of this section, the ENGINEER shall immediately notify the Contractor of such noncompliance. Such notification shall specify a reasonable time within which the Contractor shall be required to remedy such unsatisfactory maintenance condition. The time specified will give due consideration to the exigency that exists.

Should the Contractor fail to respond to the ENGINEER's notification, the OWNER may suspend any work necessary for the OWNER to correct such unsatisfactory maintenance condition, depending on the exigency that exists. Any maintenance cost incurred by the OWNER, shall be deducted from monies due or to become due the Contractor.

50-14 **Partial Acceptance**. If at any time during the execution of the project the Contractor substantially completes a usable unit or portion of the work, the occupancy of which will benefit the OWNER, the Contractor may request the ENGINEER to make final inspection of that unit. If the ENGINEER finds upon

inspection that the unit has been satisfactorily completed in compliance with the contract, the ENGINEER may accept it as being complete, and the Contractor may be relieved of further responsibility for that unit. Such partial acceptance and beneficial occupancy by the OWNER shall not void or alter any provision of the contract.

50-15 Final Acceptance. Upon due notice from the Contractor of presumptive completion of the entire project, the ENGINEER and OWNER will make an inspection. If all construction provided for and contemplated by the contract is found to be complete in accordance with the contract, plans, and specifications, such inspection shall constitute the final inspection. The ENGINEER shall notify the Contractor in writing of final acceptance as of the date of the final inspection.

If, however, the inspection discloses any work, in whole or in part, as being unsatisfactory, the ENGINEER will give the Contractor the necessary instructions for correction of same and the Contractor shall immediately comply with and execute such instructions. Upon correction of the work, another inspection will be made which shall constitute the final inspection, provided the work has been satisfactorily completed. In such event, the ENGINEER will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

50-16 Claims for Adjustment and Disputes. If for any reason the Contractor deems that additional compensation is due for work or materials not clearly provided for in the contract, plans, or specifications or previously authorized as extra work, the Contractor shall notify the ENGINEER in writing of his or her intention to claim such additional compensation before the Contractor begins the work on which the Contractor bases the claim. If such notification is not given or the ENGINEER is not afforded proper opportunity by the Contractor for keeping strict account of actual cost as required, then the Contractor hereby agrees to waive any claim for such additional compensation. Such notice by the Contractor and the fact that the ENGINEER has kept account of the cost of the work shall not in any way be construed as proving or substantiating the validity of the claim. When the work on which the claim for additional compensation is based has been completed, the Contractor shall, within 10 calendar days, submit a written claim to the ENGINEER who will present it to the OWNER for consideration in accordance with local laws or ordinances.

Nothing in this subsection shall be construed as a waiver of the Contractor's right to dispute final payment based on differences in measurements or computations.

END OF SECTION 50

SECTION 60

CONTROL OF MATERIALS

60-01 ~~**Source of Supply and Quality Requirements**. The materials used in the work shall conform to the requirements of the contract, plans, and specifications. Unless otherwise specified, such materials that are manufactured or processed shall be new (as compared to used or reprocessed).~~

~~In order to expedite the inspection and testing of materials, the Contractor shall furnish complete statements to the ENGINEER as to the origin, composition, and manufacture of all materials to be used in the work. Such statements shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.~~

~~At the ENGINEER's option, materials may be approved at the source of supply before delivery is stated. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other sources.~~

~~The Contractor shall furnish airport lighting equipment that conforms to the requirements of cited materials specifications. In addition, where an FAA specification for airport lighting equipment is cited in the plans or specifications, the Contractor shall furnish such equipment that is:~~

~~**a.** Listed in advisory circular (AC) 150/5345-53D, Airport Lighting Equipment Certification Program, and Addendum that is in effect on the date of advertisement; and,~~

~~**b.** Produced by the manufacturer as listed in the Addendum cited above for the certified equipment part number.~~

~~The following airport lighting equipment is required for this contract and is to be furnished by the Contractor in accordance with the requirements of this subsection: **[ ]**.~~ **SEE SUPPLEMENTATL GENERAL CONDITIONS 60-01.**

60-02 **Samples, Tests, and Cited Specifications**. Unless otherwise designated, all materials used in the work shall be inspected, tested, and approved by the ENGINEER before incorporation in the work. Any work in which untested materials are used without approval or written permission of the ENGINEER shall be performed at the Contractor's risk. Materials found to be unacceptable and unauthorized will not be paid for and, if directed by the ENGINEER, shall be removed at the Contractor's expense.

Unless otherwise designated, quality assurance tests in accordance with the cited standard methods of ASTM, American Association of State Highway and Transportation Officials (AASHTO), Federal Specifications, Commercial Item

Descriptions, and all other cited methods, which are current on the date of advertisement for bids, will be made by and at the expense of the ENGINEER.

The testing organizations performing on-site quality assurance field tests shall have copies of all referenced standards on the construction site for use by all technicians and other personnel, including the Contractor's representative at his or her request. Unless otherwise designated, samples for quality assurance will be taken by a qualified representative of the ENGINEER. All materials being used are subject to inspection, test, or rejection at any time prior to or during incorporation into the work. Copies of all tests will be furnished to the Contractor's representative at their request after review and approval of the ENGINEER.

The Contractor shall employ a testing organization to perform all Contractor required Quality Control tests. The Contractor shall submit to the ENGINEER resumes on all testing organizations and individual persons who will be performing the tests. The ENGINEER will determine if such persons are qualified. All the test data shall be reported to the ENGINEER after the results are known. A legible, handwritten copy of all test data shall be given to the ENGINEER daily, along with printed reports, in an approved format, on a weekly basis. After completion of the project, and prior to final payment, the Contractor shall submit a final report to the ENGINEER showing all test data reports, plus an analysis of all results showing ranges, averages, and corrective action taken on all failing tests.

60-03 Certification of Compliance. The ENGINEER may permit the use, prior to sampling and testing, of certain materials or assemblies when accompanied by manufacturer's certificates of compliance stating that such materials or assemblies fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer. Each lot of such materials or assemblies delivered to the work must be accompanied by a certificate of compliance in which the lot is clearly identified.

Materials or assemblies used on the basis of certificates of compliance may be sampled and tested at any time and if found not to be in conformity with contract requirements will be subject to rejection whether in place or not.

The form and distribution of certificates of compliance shall be as approved by the ENGINEER.

When a material or assembly is specified by "brand name or equal" and the Contractor elects to furnish the specified "brand name," the Contractor shall be required to furnish the manufacturer's certificate of compliance for each lot of such material or assembly delivered to the work. Such certificate of compliance shall clearly identify each lot delivered and shall certify as to:

a. Conformance to the specified performance, testing, quality or dimensional

requirements; and,

b. Suitability of the material or assembly for the use intended in the contract work.

Should the Contractor propose to furnish an "or equal" material or assembly, the Contractor shall furnish the manufacturer's certificates of compliance as hereinbefore described for the specified brand name material or assembly. However, the ENGINEER shall be the sole judge as to whether the proposed "or equal" is suitable for use in the work.

The ENGINEER reserves the right to refuse permission for use of materials or assemblies on the basis of certificates of compliance.

60-04 Plant Inspection. The ENGINEER or his or her authorized representative may inspect, at its source, any specified material or assembly to be used in the work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the work and to obtain samples required for acceptance of the material or assembly.

Should the ENGINEER conduct plant inspections, the following conditions shall exist:

a. The ENGINEER shall have the cooperation and assistance of the Contractor and the producer with whom the ENGINEER has contracted for materials.

b. The ENGINEER shall have full entry at all reasonable times to such parts of the plant that concern the manufacture or production of the materials being furnished.

c. If required by the ENGINEER, the Contractor shall arrange for adequate office or working space that may be reasonably needed for conducting plant inspections. Office or working space should be conveniently located with respect to the plant.

It is understood and agreed that the OWNER shall have the right to retest any material that has been tested and approved at the source of supply after it has been delivered to the site. The ENGINEER shall have the right to reject only material which, when retested, does not meet the requirements of the contract, plans, or specifications.

60-05 Engineer's Field Office. An Engineer's Field Office is not required.

60-06 Storage of Materials. Materials shall be so stored as to assure the preservation of their quality and fitness for the work. Stored materials, even

though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located to facilitate their prompt inspection. The Contractor shall coordinate the storage of all materials with the ENGINEER. Materials to be stored on airport property shall not create an obstruction to air navigation nor shall they interfere with the free and unobstructed movement of aircraft. Unless otherwise shown on the plans, the storage of materials and the location of the Contractor's plant and parked equipment or vehicles shall be as directed by the ENGINEER. Private property shall not be used for storage purposes without written permission of the owner or lessee of such property. The Contractor shall make all arrangements and bear all expenses for the storage of materials on private property. Upon request, the Contractor shall furnish the ENGINEER a copy of the property owner's permission.

All storage sites on private or airport property shall be restored to their original condition by the Contractor at his or her entire expense, except as otherwise agreed to (in writing) by the owner or lessee of the property.

60-07 Unacceptable Materials. Any material or assembly that does not conform to the requirements of the contract, plans, or specifications shall be considered unacceptable and shall be rejected. The Contractor shall remove any rejected material or assembly from the site of the work, unless otherwise instructed by the ENGINEER.

Rejected material or assembly, the defects of which have been corrected by the Contractor, shall not be returned to the site of the work until such time as the ENGINEER has approved its use in the work.

60-08 Owner Furnished Materials. The Contractor shall furnish all materials required to complete the work, except those specified, if any, to be furnished by the OWNER. OWNER-furnished materials shall be made available to the Contractor at the location specified.

All costs of handling, transportation from the specified location to the site of work, storage, and installing OWNER-furnished materials shall be included in the unit price bid for the contract item in which such OWNER-furnished material is used.

After any OWNER-furnished material has been delivered to the location specified, the Contractor shall be responsible for any demurrage, damage, loss, or other deficiencies that may occur during the Contractor's handling, storage, or use of such OWNER-furnished material. The OWNER will deduct from any monies due or to become due the Contractor any cost incurred by the OWNER in making good such loss due to the Contractor's handling, storage, or use of OWNER-furnished materials.

END OF SECTION 60

SECTION 70

LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

70-01 Laws to be Observed. The Contractor shall keep fully informed of all Federal and state laws, all local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. The Contractor shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall protect and indemnify the OWNER and all his or her officers, agents, or servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by the Contractor or the Contractor's employees.

70-02 Permits, Licenses, and Taxes. The Contractor shall procure all permits and licenses, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful execution of the work.

70-03 Patented Devices, Materials, and Processes. If the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, the Contractor shall provide for such use by suitable legal agreement with the Patentee or OWNER. The Contractor and the surety shall indemnify and hold harmless the OWNER, any third party, or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright, and shall indemnify the OWNER for any costs, expenses, and damages which it may be obliged to pay by reason of an infringement, at any time during the execution or after the completion of the work.

70-04 Restoration of Surfaces Disturbed by Others. The OWNER reserves the right to authorize the construction, reconstruction, or maintenance of any public or private utility service, FAA or National Oceanic and Atmospheric Administration (NOAA) facility, or a utility service of another government agency at any time during the progress of the work. To the extent that such construction, reconstruction, or maintenance has been coordinated with the OWNER, the Owner's contact is indicated as follows:

Georgetown County Department of Public Services
Ray Funnye, Director
PO Drawer 421270
Georgetown, South Carolina 29442
Phone: (843) 545-3325
Fax: (843) 545-3396

Except as listed above, the Contractor shall not permit any individual, firm, or

corporation to excavate or otherwise disturb such utility services or facilities located within the limits of the work without the written permission of the ENGINEER.

Should the owner of public or private utility service, FAA, or NOAA facility, or a utility service of a nother government agency be authorized to construct, reconstruct, or maintain such utility service or facility during the progress of the work, the Contractor shall cooperate with such owners by arranging and performing the work in this contract to facilitate such construction, reconstruction or maintenance by others whether or not such work by others is listed above. When ordered as extra work by the ENGINEER, the Contractor shall make all necessary repairs to the work which are due to such authorized work by others, unless otherwise provided for in the contract, plans, or specifications. It is understood and agreed that the Contractor shall not be entitled to make any claim for damages due to such authorized work by others or for any delay to the work resulting from such authorized work.

70-05 Federal Aid Participation. For Airport Improvement Program (AIP) contracts, the United States Government has agreed to reimburse the OWNER for some portion of the contract costs. Such reimbursement is made from time to time upon the OWNER's request to the FAA. In consideration of the United States Government's (FAA's) agreement with the OWNER, the OWNER has included provisions in this contract pursuant to the requirements of Title 49 of the USC and the Rules and Regulations of the FAA that pertain to the work.

As required by the USC, the contract work is subject to the inspection and approval of duly authorized representatives of the FAA Administrator, and is further subject to those provisions of the rules and regulations that are cited in the contract, plans, or specifications.

No requirement of the USC, the rules and regulations implementing the USC, or this contract shall be construed as making the Federal Government a party to the contract nor will any such requirement interfere, in any way, with the rights of either party to the contract.

70-06 Sanitary, Health, and Safety Provisions. The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of his or her employees as may be necessary to comply with the requirements of the state and local Board of Health, or of other bodies or tribunals having jurisdiction.

Attention is directed to Federal, state, and local laws, rules and regulations concerning construction safety and health standards. The Contractor shall not require any worker to work in surroundings or under conditions that are unsanitary, hazardous, or dangerous to his or her health or safety.

70-07 Public Convenience and Safety. The Contractor shall control his or her operations and those of his or her subcontractors and all suppliers, to assure the least inconvenience to the traveling public. Under all circumstances, safety shall be the most important consideration.

The Contractor shall maintain the free and unobstructed movement of aircraft and vehicular traffic with respect to his or her own operations and those of his or her subcontractors and all suppliers in accordance with the subsection 40-05 titled MAINTENANCE OF TRAFFIC of Section 40 hereinbefore specified and shall limit such operations for the convenience and safety of the traveling public as specified in the subsection 80-04 titled LIMITATION OF OPERATIONS of Section 80 hereinafter.

70-08 ~~Barricades, Warning Signs, and Hazard Markings~~. ~~The Contractor shall furnish, erect, and maintain all barricades, warning signs, and markings for hazards necessary to protect the public and the work. When used during periods of darkness, such barricades, warning signs, and hazard markings shall be suitably illuminated. Unless otherwise specified, barricades, warning signs, and markings for hazards that are in the air operations area (AOAs) shall be a maximum of 18 inches high. Unless otherwise specified, barricades shall be spaced not more than 4 feet apart. Barricades, warning signs, and markings shall be paid for under subsection 40-05.~~

~~For vehicular and pedestrian traffic, the Contractor shall furnish, erect, and maintain barricades, warning signs, lights and other traffic control devices in reasonable conformity with the Manual on Uniform Traffic Control Devices.~~

~~When the work requires closing an air operations area of the airport or portion of such area, the Contractor shall furnish, erect, and maintain temporary markings and associated lighting conforming to the requirements of advisory circular (AC) 150/5340-1L, Standards for Airport Markings.~~

~~The Contractor shall furnish, erect, and maintain markings and associated lighting of open trenches, excavations, temporary stock piles, and the Contractor's parked construction equipment that may be hazardous to the operation of emergency fire-rescue or maintenance vehicles on the airport in reasonable conformance to AC 150/5370-2F, Operational Safety on Airports During Construction.~~

~~The Contractor shall identify each motorized vehicle or piece of construction equipment in reasonable conformance to AC 150/5370-2F.~~

~~The Contractor shall furnish and erect all barricades, warning signs, and markings for hazards prior to commencing work that requires such erection and shall maintain the barricades, warning signs, and markings for hazards until their removal is directed by the ENGINEER.~~

~~Open flame type lights shall not be permitted.~~ **SEE SUPPLEMENTATL GENERAL CONDITIONS 70-08.**

70-09 ~~**Use of Explosives**. When the use of explosives is necessary for the execution of the work, the Contractor shall exercise the utmost care not to endanger life or property, including new work. The Contractor shall be responsible for all damage resulting from the use of explosives.~~

~~All explosives shall be stored in a secure manner in compliance with all laws and ordinances, and all such storage places shall be clearly marked. Where no local laws or ordinances apply, storage shall be provided satisfactory to the ENGINEER and, in general, not closer than 1,000 feet from the work or from any building, road, or other place of human occupancy.~~

~~The Contractor shall notify each property owner and public utility company having structures or facilities in proximity to the site of the work of his or her intention to use explosives. Such notice shall be given sufficiently in advance to enable them to take such steps as they may deem necessary to protect their property from injury.~~

~~The use of electrical blasting caps shall not be permitted on or within 1,000 feet of the airport property.~~ **SEE SUPPLEMENTATL GENERAL CONDITIONS 70-09.**

70-10 **Protection and Restoration of Property and Landscape**. The Contractor shall be responsible for the preservation of all public and private property, and shall protect carefully from disturbance or damage all land monuments and property markers until the ENGINEER has witnessed or otherwise referenced their location and shall not move them until directed.

The Contractor shall be responsible for all damage or injury to property of any character, during the execution of the work, resulting from any act, omission, neglect, or misconduct in manner or method of executing the work, or at any time due to defective work or materials, and said responsibility shall not be released until the project has been completed and accepted.

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof by the Contractor, the Contractor shall restore, at his or her own expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, or otherwise restoring as may be directed, or the Contractor shall make good such damage or injury in an acceptable manner.

70-11 **Responsibility for Damage Claims**. The Contractor shall indemnify and save

harmless the ENGINEER and the OWNER and their officers, and employees from all suits, actions, or claims, of any character, brought because of any injuries or damage received or sustained by any person, persons, or property on account of the operations of the Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act," or any other law, ordinance, order, or decree. Money due the Contractor under and by virtue of his or her contract considered necessary by the OWNER for such purpose may be retained for the use of the OWNER or, in case no money is due, his or her surety may be held until such suits, actions, or claims for injuries or damages shall have been settled and suitable evidence to that effect furnished to the OWNER, except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that he or she is adequately protected by public liability and property damage insurance.

70-12 Third Party Beneficiary Clause. It is specifically agreed between the parties executing the contract that it is not intended by any of the provisions of any part of the contract to create for the public or any member thereof, a third party beneficiary or to authorize anyone not a party to the contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of the contract.

70-13 Opening Sections of the Work to Traffic. Should it be necessary for the Contractor to complete portions of the contract work for the beneficial occupancy of the OWNER prior to completion of the entire contract, such "phasing" of the work shall be specified herein and indicated on the plans. When so specified, the Contractor shall complete such portions of the work on or before the date specified or as otherwise specified. The Contractor shall make his or her own estimate of the difficulties involved in arranging the work to permit such beneficial occupancy by the OWNER.

Upon completion of any portion of the work listed above, such portion shall be accepted by the OWNER in accordance with the subsection 50-14 titled PARTIAL ACCEPTANCE of Section 50.

No portion of the work may be opened by the Contractor for public use until ordered by the ENGINEER in writing. Should it become necessary to open a portion of the work to public traffic on a temporary or intermittent basis, such openings shall be made when, in the opinion of the ENGINEER, such portion of the work is in an acceptable condition to support the intended traffic. Temporary or intermittent openings are considered to be inherent in the work and shall not constitute either acceptance of the portion of the work so opened

or a waiver of any provision of the contract. Any damage to the portion of the work so opened that is not attributable to traffic which is permitted by the OWNER shall be repaired by the Contractor at his or her expense.

The Contractor shall make his or her own estimate of the inherent difficulties involved in completing the work under the conditions herein described and shall not claim any added compensation by reason of delay or increased cost due to opening a portion of the contract work.

Contractor shall be required to conform to safety standards contained AC 150/5370-2G (see Special Provisions).

Contractor shall refer to the approved Construction Safety Phasing Plan (CSPP) to identify barricade requirements and other safety requirements prior to opening up sections of work to traffic.

70-14 Contractor's Responsibility for Work. Until the ENGINEER's final written acceptance of the entire completed work, excepting only those portions of the work accepted in accordance with the subsection 50-14 titled PARTIAL ACCEPTANCE of Section 50, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part due to the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except damage to the work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God such as earthquake, tidal wave, tornado, hurricane or other cataclysmic phenomenon of nature, or acts of the public enemy or of government authorities.

If the work is suspended for any cause whatever, the Contractor shall be responsible for the work and shall take such precautions necessary to prevent damage to the work. The Contractor shall provide for normal drainage and shall erect necessary temporary structures, signs, or other facilities at his or her expense. During such period of suspension of work, the Contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established planting, seeding, and sodding furnished under the contract, and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.

70-15 Contractor's Responsibility for Utility Service and Facilities of Others. As provided in the subsection 70-04 titled RESTORATION OF SURFACES DISTURBED BY OTHERS of this section, the Contractor shall cooperate with the owner of any public or private utility service, FAA or NOAA, or a utility service of another government agency that may be authorized by the OWNER

to construct, reconstruct or maintain such utility services or facilities during the progress of the work. In addition, the Contractor shall control their operations to prevent the unscheduled interruption of such utility services and facilities.

To the extent that such public or private utility services, FAA, or NOAA facilities, or utility services of another governmental agency are known to exist within the limits of the contract work, the approximate locations have been indicated on the plans and the owners are indicated as follows:

Georgetown County Department of Public Services
Ray Funnye, Director
PO Drawer 421270
Georgetown, South Carolina 29442
Phone: (843) 545-3325
Fax: (843) 545-3396

It is understood and agreed that the OWNER does not guarantee the accuracy or the completeness of the location information relating to existing utility services, facilities, or structures that may be shown on the plans or encountered in the work. Any inaccuracy or omission in such information shall not relieve the Contractor of the responsibility to protect such existing features from damage or unscheduled interruption of service.

It is further understood and agreed that the Contractor shall, upon execution of the contract, notify the owners of all utility services or other facilities of his or her plan of operations. Such notification shall be in writing addressed to THE PERSON TO CONTACT as provided in this subsection and subsection 70-04 titled RESTORATION OF SURFACES DISTURBED BY OTHERS of this section. A copy of each notification shall be given to the ENGINEER.

In addition to the general written notification provided, it shall be the responsibility of the Contractor to keep such individual owners advised of changes in their plan of operations that would affect such owners.

Prior to beginning the work in the general vicinity of an existing utility service or facility, the Contractor shall again notify each such owner of their plan of operation. If, in the Contractor's opinion, the owner's assistance is needed to locate the utility service or facility or the presence of a representative of the OWNER is desirable to observe the work, such advice should be included in the notification. Such notification shall be given by the most expeditious means to reach the utility owner's PERSON TO CONTACT no later than two normal business days prior to the Contractor's commencement of operations in such general vicinity. The Contractor shall furnish a written summary of the notification to the ENGINEER.

The Contractor's failure to give the two days' notice shall be cause for the

OWNER to suspend the Contractor's operations in the general vicinity of a utility service or facility.

Where the outside limits of an underground utility service have been located and staked on the ground, the Contractor shall be required to use hand excavation methods within 3 feet of such outside limits at such points as may be required to ensure protection from damage due to the Contractor's operations.

Should the Contractor damage or interrupt the operation of a utility service or facility by accident or otherwise, the Contractor shall immediately notify the proper authority and the ENGINEER and shall take all reasonable measures to prevent further damage or interruption of service. The Contractor, in such events, shall cooperate with the utility service or facility owner and the ENGINEER continuously until such damage has been repaired and service restored to the satisfaction of the utility or facility owner.

The Contractor shall bear all costs of damage and restoration of service to any utility service or facility due to their operations whether due to negligence or accident. The OWNER reserves the right to deduct such costs from any monies due or which may become due the Contractor, or his or her surety.

70-16 Furnishing Rights-of-Way. The OWNER will be responsible for furnishing all rights-of-way upon which the work is to be constructed in advance of the Contractor's operations.

70-17 Personal Liability of Public Officials. In carrying out any of the contract provisions or in exercising any power or authority granted by this contract, there shall be no liability upon the ENGINEER, his or her authorized representatives, or any officials of the OWNER either personally or as an official of the OWNER. It is understood that in such matters they act solely as agents and representatives of the OWNER.

70-18 No Waiver of Legal Rights. Upon completion of the work, the OWNER will expeditiously make final inspection and notify the Contractor of final acceptance. Such final acceptance, however, shall not preclude or stop the OWNER from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the OWNER be precluded or stopped from recovering from the Contractor or his or her surety, or both, such overpayment as may be sustained, or by failure on the part of the Contractor to fulfill his or her obligations under the contract. A waiver on the part of the OWNER of any breach of any part of the contract shall not be held to be a waiver of any other or subsequent breach.

The Contractor, without prejudice to the terms of the contract, shall be liable to the OWNER for latent defects, fraud, or such gross mistakes as may amount

to fraud, or as regards the OWNER's rights under any warranty or guaranty.

70-19 Environmental Protection. The Contractor shall comply with all Federal, state, and local laws and regulations controlling pollution of the environment. The Contractor shall take necessary precautions to prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, bitumens, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

70-20 Archaeological and Historical Findings. Unless otherwise specified in this subsection, the Contractor is advised that the site of the work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior.

Should the Contractor encounter, during his or her operations, any building, part of a building, structure, or object that is incongruous with its surroundings, the Contractor shall immediately cease operations in that location and notify the ENGINEER. The ENGINEER will immediately investigate the Contractor's finding and the OWNER will direct the Contractor to either resume operations or to suspend operations as directed.

Should the OWNER order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such shall be covered by an appropriate contract change order or supplemental agreement as provided in the subsection 40-04 titled EXTRA WORK of Section 40 and the subsection 90-05 titled PAYMENT FOR EXTRA WORK of Section 90. If appropriate, the contract change order or supplemental agreement shall include an extension of contract time in accordance with the subsection 80-07 titled DETERMINATION AND EXTENSION OF CONTRACT TIME of Section 80.

END OF SECTION 70

SECTION 80

EXECUTION AND PROGRESS

80-01 Subletting of Contract. The OWNER will not recognize any subcontractor on the work. The Contractor shall at all times when work is in progress be represented either in person, by a qualified superintendent, or by other designated, qualified representative who is duly authorized to receive and execute orders of the ENGINEER.

The Contractor shall provide copies of all subcontracts to the ENGINEER. The Contractor shall perform, with his organization, an amount of work equal to at least 25 percent of the total contract cost.

Should the Contractor elect to assign his or her contract, said assignment shall be concurred in by the surety, shall be presented for the consideration and approval of the OWNER, and shall be consummated only on the written approval of the OWNER.

80-02 Notice to Proceed. The notice to proceed shall state the date on which it is expected the Contractor will begin the construction and from which date contract time will be charged. The Contractor shall begin the work to be performed under the contract within 10 days of the date set by the ENGINEER in the written notice to proceed, but in any event, the Contractor shall notify the ENGINEER at least 24 hours in advance of the time actual construction operations will begin. The Contractor shall not commence any actual construction prior to the date on which the notice to proceed is issued by the OWNER.

80-03 Execution and Progress. Unless otherwise specified, the Contractor shall submit their progress schedule for the ENGINEER's approval 3 days prior to the effective date of the preconstruction conference. The Contractor's progress schedule, when approved by the ENGINEER, may be used to establish major construction operations and to check on the progress of the work. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the project in accordance with the plans and specifications within the time set forth in the proposal.

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the ENGINEER's request, submit a revised schedule for completion of the work within the contract time and modify their operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the execution of the work be discontinued for any reason, the Contractor shall notify the ENGINEER at least 24 hours in advance of resuming operations.

The Contractor shall not commence any actual construction prior to the date on which the notice to proceed is issued by the OWNER.

80-04 ~~**Limitation of Operations**. The Contractor shall control his or her operations and the operations of his or her subcontractors and all suppliers to provide for the free and unobstructed movement of aircraft in the air operations areas (AOA) of the airport.~~

~~When the work requires the Contractor to conduct his or her operations within an AOA of the airport, the work shall be coordinated with airport operations (through the ENGINEER) at least 48 hours prior to commencement of such work. The Contractor shall not close an AOA until so authorized by the ENGINEER and until the necessary temporary marking and associated lighting is in place as provided in the subsection 70-08 titled BARRICADES, WARNING SIGNS, AND HAZARD MARKINGS of Section 70.~~

~~When the contract work requires the Contractor to work within an AOA of the airport on an intermittent basis (intermittent opening and closing of the AOA), the Contractor shall maintain constant communications as specified; immediately obey all instructions to vacate the AOA; immediately obey all instructions to resume work in such AOA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the AOA until the satisfactory conditions are provided. The following AOA cannot be closed to operating aircraft to permit the Contractor's operations on a continuous basis and will therefore be closed to aircraft operations intermittently as follows:~~

~~Contractor shall be required to conform to safety standards contained in AC 150/5370-2F, Operational Safety on Airports During Construction (see Special Provisions).~~ **SEE SUPPLEMENTATL GENERAL CONDITIONS 80-04.**

80-04.1 **Operational Safety on Airport During Construction.** All Contractors' operations shall be conducted in accordance with the project Construction Safety and Phasing Plan (CSPP) and the provisions set forth within the current version of AC 150/5370-2G. The CSPP included within the contract documents conveys minimum requirements for operational safety on the airport during construction activities. The Contractor shall prepare and submit a Safety Plan Compliance Document that details how it proposes to comply with the requirements presented within the CSPP.

The Contractor shall implement all necessary safety plan measures prior to commencement of any work activity. The Contractor shall conduct routine checks to assure compliance with the safety plan measures.

The Contractor is responsible to the OWNER for the conduct of all subcontractors it employs on the project. The Contractor shall assure that all

subcontractors are made aware of the requirements of the CSPP and that they implement and maintain all necessary measures.

No deviation or modifications may be made to the approved CSPP unless approved in writing by the OWNER or ENGINEER.

80-05 Character of Workers, Methods, and Equipment. The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the work to full completion in the manner and time required by the contract, plans, and specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.

Any person employed by the Contractor or by any subcontractor who violates any operational regulations or operational safety requirements and, in the opinion of the ENGINEER, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the ENGINEER, be removed forthwith by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without approval of the ENGINEER.

Should the Contractor fail to remove such persons or person, or fail to furnish suitable and sufficient personnel for the proper execution of the work, the ENGINEER may suspend the work by written notice until compliance with such orders.

All equipment that is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the work shall be such that no injury to previously completed work, adjacent property, or existing airport facilities will result from its use.

When the methods and equipment to be used by the Contractor in accomplishing the work are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the work in conformity with the requirements of the contract, plans, and specifications.

When the contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless others are authorized by the ENGINEER. If the Contractor desires to use a method or type of equipment other than specified in the contract, the Contractor may request authority from the ENGINEER to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for

desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the ENGINEER determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the ENGINEER may direct. No change will be made in basis of payment for the contract items involved nor in contract time as a result of authorizing a change in methods or equipment under this subsection.

80-06 **Temporary Suspension of the Work**. The OWNER shall have the authority to suspend the work wholly, or in part, for such period or periods as the OWNER may deem necessary, due to unsuitable weather, or such other conditions as are considered unfavorable for the execution of the work, or for such time as is necessary due to the failure on the part of the Contractor to carry out orders given or perform any or all provisions of the contract.

In the event that the Contractor is ordered by the OWNER, in writing, to suspend work for some unforeseen cause not otherwise provided for in the contract and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the ENGINEER's order to suspend work to the effective date of the ENGINEER's order to resume the work. Claims for such compensation shall be filed with the ENGINEER within the time period stated in the ENGINEER's order to resume work. The Contractor shall submit with his or her claim information substantiating the amount shown on the claim. The ENGINEER will forward the Contractor's claim to the OWNER for consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather, for suspensions made at the request of the OWNER, or for any other delay provided for in the contract, plans, or specifications.

If it should become necessary to suspend work for an indefinite period, the Contractor shall store all materials in such manner that they will not become an obstruction nor become damaged in any way. The Contractor shall take every precaution to prevent damage or deterioration of the work performed and provide for normal drainage of the work. The Contractor shall erect temporary structures where necessary to provide for traffic on, to, or from the airport.

80-07 ~~**Determination and Extension of Contract Time**. The number of calendar or working days allowed for completion of the work shall be stated in the proposal and contract and shall be known as the CONTRACT TIME.~~

Should the contract time require extension for reasons beyond the Contractor's control, it shall be adjusted as follows:

a. CONTRACT TIME based on WORKING DAYS shall be calculated weekly by the ENGINEER. The ENGINEER will furnish the Contractor a copy of his or her weekly statement of the number of working days charged against the contract time during the week and the number of working days currently specified for completion of the contract (the original contract time plus the number of working days, if any, that have been included in approved CHANGE ORDERS or SUPPLEMENTAL AGREEMENTS covering EXTRA WORK).

The ENGINEER shall base his or her weekly statement of contract time charged on the following considerations:

(1) No time shall be charged for days on which the Contractor is unable to proceed with the principal item of work under construction at the time for at least six (6) hours with the normal work force employed on such principal item. Should the normal work force be on a double-shift, 12 hours shall be used. Should the normal work force be on a triple-shift, 18 hours shall apply. Conditions beyond the Contractor's control such as strikes, lockouts, unusual delays in transportation, temporary suspension of the principal item of work under construction or temporary suspension of the entire work which have been ordered by the OWNER for reasons not the fault of the Contractor, shall not be charged against the contract time.

(2) The ENGINEER will not make charges against the contract time prior to the effective date of the notice to proceed.

(3) The ENGINEER will begin charges against the contract time on the first working day after the effective date of the notice to proceed.

(4) The ENGINEER will not make charges against the contract time after the date of final acceptance as defined in the subsection 50-15 titled FINAL ACCEPTANCE of Section 50.

(5) The Contractor will be allowed one (1) week in which to file a written protest setting forth his or her objections to the ENGINEER's weekly statement. If no objection is filed within such specified time, the weekly statement shall be considered as acceptable to the Contractor.

The contract time (stated in the proposal) is based on the originally estimated quantities as described in the subsection 20-05 titled INTERPRETATION OF ESTIMATED PROPOSAL QUANTITIES of Section

~~20. Should the satisfactory completion of the contract require performance of work in greater quantities than those estimated in the proposal, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in contract time shall not consider either the cost of work or the extension of contract time that has been covered by change order or supplemental agreement and shall be made at the time of final payment.~~

~~b.~~ ~~Contract Time based on calendar days shall consist of the number of calendar days stated in the contract counting from the effective date of the notice to proceed and including all Saturdays, Sundays, holidays, and non-work days. All calendar days elapsing between the effective dates of the OWNER's orders to suspend and resume all work, due to causes not the fault of the Contractor, shall be excluded.~~

~~At the time of final payment, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in the contract time shall not consider either cost of work or the extension of contract time that has been covered by a change order or supplemental agreement. Charges against the contract time will cease as of the date of final acceptance.~~

~~c.~~ ~~When the contract time is a specified completion date, it shall be the date on which all contract work shall be substantially complete.~~

~~If the Contractor finds it impossible for reasons beyond his or her control to complete the work within the contract time as specified, or as extended in accordance with the provisions of this subsection, the Contractor may, at any time prior to the expiration of the contract time as extended, make a written request to the OWNER for an extension of time setting forth the reasons which the Contractor believes will justify the granting of his or her request. Requests for extension of time on calendar day projects, caused by inclement weather, shall be supported with National Weather Bureau data showing the actual amount of inclement weather exceeded what could normally be expected during the contract period. The Contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the supporting documentation justify the work was delayed because of conditions beyond the control and without the fault of the Contractor, the OWNER may extend the time for completion by a change order that adjusts the contract time or completion date. The extended time for completion shall then be in full force and effect, the same as though it were the original time for completion.~~ **SEE SUPPLEMENTATL GENERAL CONDITIONS 80-07.**

80-08 Failure to Complete on Time. For each calendar day as specified in the

contract, that any work remains uncompleted after the contract time (including all extensions and adjustments as provided in the subsection 80-07 titled DETERMINATION AND EXTENSION OF CONTRACT TIME of this Section) the sum specified in the contract and proposal as liquidated damages will be deducted from any money due or to become due the Contractor or his or her surety. Such deducted sums shall not be deducted as a penalty but shall be considered as liquidation of a reasonable portion of damages including but not limited to additional engineering services that will be incurred by the OWNER should the Contractor fail to complete the work in the time provided in their contract.

Schedule	Allowed Contract Time	Liquidated Damages Cost
Apron Exansion (Phase IV)	60 Calendar Days	$1,500.00 per Calendar Day
Removal of Sedimentation and Erosion Control Items	3 Calendar Days	$1,500.00 per Calendar Day

The maximum construction time allowed for Apron Expansion (Phase IV) will be not more than 60 Calendar Days. Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a wavier on the part of the OWNER of any of its rights under the contract.

80-09 Default and Termination of Contract. The Contractor shall be considered in default of his or her contract and such default will be considered as cause for the OWNER to terminate the contract for any of the following reasons if the Contractor:

a. Fails to begin the work under the contract within the time specified in the Notice to Proceed, or

b. Fails to perform the work or fails to provide sufficient workers, equipment and/or materials to assure completion of work in accordance with the terms of the contract, or

c. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or

d. Discontinues the execution of the work, or

e. Fails to resume work which has been discontinued within a reasonable time after notice to do so, or

f. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or

g. Allows any final judgment to stand against the Contractor unsatisfied for a period of 10 days, or

h. Makes an assignment for the benefit of creditors, or

i. For any other cause whatsoever, fails to carry on the work in an acceptable manner.

Should the ENGINEER consider the Contractor in default of the contract for any reason above, the ENGINEER shall immediately give written notice to the Contractor and the Contractor's surety as to the reasons for considering the Contractor in default and the OWNER's intentions to terminate the contract.

If the Contractor or surety, within a period of 10 days after such notice, does not proceed in accordance therewith, then the OWNER will, upon written notification from the ENGINEER of the facts of such delay, neglect, or default and the Contractor's failure to comply with such notice, have full power and authority without violating the contract, to take the execution of the work out of the hands of the Contractor. The OWNER may appropriate or use any or all materials and equipment that have been mobilized for use in the work and are acceptable and may enter into an agreement for the completion of said contract according to the terms and provisions thereof, or use such other methods as in the opinion of the ENGINEER will be required for the completion of said contract in an acceptable manner.

All costs and charges incurred by the OWNER, together with the cost of completing the work under contract, will be deducted from any monies due or which may become due the Contractor. If such expense exceeds the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay to the OWNER the amount of such excess.

80-10 Termination for National Emergencies. The OWNER shall terminate the contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction contract as a direct result of an Executive Order of the President with respect to the execution of war or in the interest of national defense.

When the contract, or any portion thereof, is terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed at the contract price or as mutually agreed for items of work partially completed or not started. No claims or loss of anticipated profits shall be considered.

Reimbursement for organization of the work, and other overhead expenses, (when not otherwise included in the contract) and moving equipment and materials to and from the job will be considered, the intent being that an equitable settlement will be made with the Contractor.

Acceptable materials, obtained or ordered by the Contractor for the work and that are not incorporated in the work shall, at the option of the Contractor, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the ENGINEER.

Termination of the contract or a portion thereof shall neither relieve the Contractor of his or her responsibilities for the completed work nor shall it relieve his or her surety of its obligation for and concerning any just claim arising out of the work performed.

80-11 Work Area, Storage Area and Sequence of Operations. The Contractor shall obtain approval from the ENGINEER prior to beginning any work in all areas of the airport. No operating runway, taxiway, or air operations area (AOA) shall be crossed, entered, or obstructed while it is operational. The Contractor shall plan and coordinate his or her work in such a manner as to ensure safety and a minimum of hindrance to flight operations. All Contractor equipment and material stockpiles shall be stored a minimum or 200 feet from the centerline of an active runway. No equipment will be allowed to park within the approach area of an active runway at any time. No equipment shall be within 200 feet of an active runway at any time.

END OF SECTION 80

SECTION 90

MEASUREMENT AND PAYMENT

90-01 Measurement of Quantities. All work completed under the contract will be measured by the ENGINEER, or his or her authorized representatives, using United States Customary Units of Measurement or the International System of Units.

The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures (or leave-outs) having an area of 9 square feet or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing by the ENGINEER.

Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.

Unless otherwise specified, all contract items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, underdrains, and similar items shall be measured parallel to the base or foundation upon which such items are placed.

In computing volumes of excavation the average end area method or other acceptable methods will be used.

The thickness of plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fraction of inch.

The term “ton” will mean the short ton consisting of 2,000 lb avoirdupois. All materials that are measured or proportioned by weights shall be weighed on accurate, approved scales by competent, qualified personnel at locations designed by the ENGINEER. If material is shipped by rail, the car weight may be accepted provided that only the actual weight of material is paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the ENGINEER directs, and each truck shall bear a plainly legible identification mark.

Materials to be measured by volume in the hauling vehicle shall be hauled in

approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable for the materials hauled, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery.

Bituminous materials will be measured by the gallon or ton. When measured by volume, such volumes will be measured at 60°F or will be corrected to the volume at 60°F using ASTM D1250 for asphalts or ASTM D633 for tars.

Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when bituminous material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the work.

When bituminous materials are shipped by truck or transport, net certified weights by volume, subject to correction for loss or foaming, may be used for computing quantities.

Cement will be measured by the ton or hundredweight.

Timber will be measured by the thousand feet board measure (MFBM) actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.

The term “lump sum” when used as an item of payment will mean complete payment for the work described in the contract.

When a complete structure or structural unit (in effect, “lump sum” work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the work. Special equipment ordered by the ENGINEER in connection with force account work will be measured as agreed in the change order or supplemental agreement authorizing such force account work as provided in the subsection 90-05 titled PAYMENT FOR EXTRA WORK of this section.

When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gauge, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected, and maintained by the Contractor, or be certified permanently installed commercial scales.

Scales shall be accurate within 1/2% of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the inspector before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed one-tenth of 1% of the nominal rated capacity of the scale, but not less than 1 pound. The use of spring balances will not be permitted.

Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the inspector can safely and conveniently view them.

Scale installations shall have available ten standard 50-pound weights for testing the weighing equipment or suitable weights and devices for other approved equipment.

Scales must be tested for accuracy and serviced before use at a new site. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end.

Scales "overweighing" (indicating more than correct weight) will not be permitted to operate, and all materials received subsequent to the last previous correct weighting-accuracy test will be reduced by the percentage of error in excess of one-half of 1%.

In the event inspection reveals the scales have been underweighing (indicating less than correct weight), they shall be adjusted, and no additional payment to the Contractor will be allowed for materials previously weighed and recorded.

All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other items specified in this subsection, for the weighing of materials for proportioning or payment, shall be included in the unit contract prices for the various items of the project.

When the estimated quantities for a specific portion of the work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the work will be made, unless the dimensions of said portions of the work shown on the plans are revised by the ENGINEER. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.

90-02 **Scope of Payment**. The Contractor shall receive and accept compensation provided for in the contract as full payment for furnishing all materials, for performing all work under the contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature of the work or the execution thereof, subject to the provisions of the subsection 70-18 titled NO WAIVER OF LEGAL RIGHTS of Section 70.

When the "basis of payment" subsection of a technical specification requires that the contract price (price bid) include compensation for certain work or material essential to the item, this same work or material will not also be measured for payment under any other contract item which may appear elsewhere in the contract, plans, or specifications.

90-03 **Compensation for Altered Quantities**. When the accepted quantities of work vary from the quantities in the proposal, the Contractor shall accept as payment in full, so far as contract items are concerned, payment at the original contract price for the accepted quantities of work actually completed and accepted. No allowance, except as provided for in the subsection 40-02 titled ALTERATION OF WORK AND QUANTITIES of Section 40 will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly from such alterations or indirectly from his or her unbalanced allocation of overhead and profit among the contract items, or from any other cause.

90-04 **Payment for Omitted Items**. As specified in the subsection 40-03 titled OMITTED ITEMS of Section 40, the ENGINEER shall have the right to omit from the work (order nonperformance) any contract item, except major contract items, in the best interest of the OWNER.

Should the ENGINEER omit or order nonperformance of a contract item or portion of such item from the work, the Contractor shall accept payment in full at the contract prices for any work actually completed and acceptable prior to the ENGINEER's order to omit or non-perform such contract item.

Acceptable materials ordered by the Contractor or delivered on the work prior to the date of the ENGINEER's order will be paid for at the actual cost to the Contractor and shall thereupon become the property of the OWNER.

In addition to the reimbursement hereinbefore provided, the Contractor shall be reimbursed for all actual costs incurred for the purpose of performing the omitted contract item prior to the date of the ENGINEER's order. Such additional costs incurred by the Contractor must be directly related to the deleted contract item and shall be supported by certified statements by the Contractor as to the nature the amount of such costs.

90-05 **Payment for Extra Work**. Extra work, performed in accordance with the subsection 40-04 titled EXTRA WORK of Section 40, will be paid for at the contract prices or agreed prices specified in the change order or supplemental agreement authorizing the extra work.

90-06 **Partial Payments**. Partial payments will be made to the Contractor at least once each month as the work progresses. Said payments will be based upon estimates, prepared by the ENGINEER, of the value of the work performed and materials complete and in place, in accordance with the contract, plans, and specifications. Such partial payments may also include the delivered actual cost of those materials stockpiled and stored in accordance with the subsection 90-07 titled PAYMENT FOR MATERIALS ON HAND of this section. No partial payment will be made when the amount due to the Contractor since the last estimate amounts to less than five hundred dollars.

The Contractor is required to pay all subcontractors for satisfactory performance of their contracts no later than 30 days after the Contractor has received a partial payment. The OWNER must ensure prompt and full payment of retainage from the prime Contractor to the subcontractor within 30 days after the subcontractor's work is satisfactorily completed. 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 OWNER. When the OWNER has made an incremental acceptance of a portion of a prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.

From the total of the amount determined to be payable on a partial payment, 10 percent of such total amount will be deducted and retained by the OWNER until the final payment is made, except as may be provided (at the Contractor's option) in the subsection 90-08 titled PAYMENT OF WITHHELD FUNDS of this section. The balance, 90 per cent of the amount payable, less all previous payments, shall be certified for payment. Should the Contractor exercise his or her option, as provided in the subsection 90-08 titled PAYMENT OF WITHHELD FUNDS of this section, no such percent retainage shall be deducted.

When at least 95% of the work has been completed, the ENGINEER shall, at the OWNER's discretion and with the consent of the surety, prepare estimates of both the contract value and the cost of the remaining work to be done.

The OWNER may retain an amount not less than twice the contract value or estimated cost, whichever is greater, of the work remaining to be done. The remainder, less all previous payments and deductions, will then be certified for payment to the Contractor.

It is understood and agreed that the Contractor shall not be entitled to demand

or receive partial payment based on quantities of work in excess of those provided in the proposal or covered by approved change orders or supplemental agreements, except when such excess quantities have been determined by the ENGINEER to be a part of the final quantity for the item of work in question.

No partial payment shall bind the OWNER to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in the subsection 90-09 titled ACCEPTANCE AND FINAL PAYMENT of this section.

The Contractor shall deliver to the OWNER a complete release of all claims for labor and material arising out of this contract before the final payment is made. If any subcontractor or supplier fails to furnish such a release in full, the Contractor may furnish a bond or other collateral satisfactory to the OWNER to indemnify the OWNER against any potential lien or other such claim. The bond or collateral shall include all costs, expenses, and attorney fees the OWNER may be compelled to pay in discharging any such lien or claim.

90-07 Payment for Materials on Hand. Partial payments may be made to the extent of the delivered cost of materials to be incorporated in the work, provided that such materials meet the requirements of the contract, plans, and specifications and are delivered to acceptable sites on the airport property or at other sites in the vicinity that are acceptable to the OWNER. Such delivered costs of stored or stockpiled materials may be included in the next partial payment after the following conditions are met:

a. The material has been stored or stockpiled in a manner acceptable to the ENGINEER at or on an approved site.

b. The Contractor has furnished the ENGINEER with acceptable evidence of the quantity and quality of such stored or stockpiled materials.

c. The Contractor has furnished the ENGINEER with satisfactory evidence that the material and transportation costs have been paid.

d. The Contractor has furnished the OWNER legal title (free of liens or encumbrances of any kind) to the material so stored or stockpiled.

e. The Contractor has furnished the OWNER evidence that the material so stored or stockpiled is insured against loss by damage to or disappearance of such materials at any time prior to use in the work.

It is understood and agreed that the transfer of title and the OWNER's payment for such stored or stockpiled materials shall in no way relieve the Contractor of his or her responsibility for furnishing and placing such materials in accordance

with the requirements of the contract, plans, and specifications.

In no case will the amount of partial payments for materials on hand exceed the contract price for such materials or the contract price for the contract item in which the material is intended to be used.

No partial payment will be made for stored or stockpiled living or perishable plant materials.

The Contractor shall bear all costs associated with the partial payment of stored or stockpiled materials in accordance with the provisions of this subsection.

90-08 Payment of Withheld Funds. At the Contractor's option, if an OWNER withholds retainage in accordance with the methods described in subsection 90-06 PARTIAL PAYMENTS, the Contractor may request that the OWNER deposit the retainage into an escrow account. The OWNER's deposit of retainage into an escrow account is subject to the following conditions:

a. The Contractor shall bear all expenses of establishing and maintaining an escrow account and escrow agreement acceptable to the OWNER.

b. The Contractor shall deposit to and maintain in such escrow only those securities or bank certificates of deposit as are acceptable to the OWNER and having a value not less than the retainage that would otherwise be withheld from partial payment.

c. The Contractor shall enter into an escrow agreement satisfactory to the OWNER.

d. The Contractor shall obtain the written consent of the surety to such agreement.

90-09 Acceptance and Final Payment. When the contract work has been accepted in accordance with the requirements of the subsection 50-15 titled FINAL ACCEPTANCE of Section 50, the ENGINEER will prepare the final estimate of the items of work actually performed. The Contractor shall approve the ENGINEER's final estimate or advise the ENGINEER of the Contractor's objections to the final estimate which are based on disputes in measurements or computations of the final quantities to be paid under the contract as amended by change order or supplemental agreement. The Contractor and the ENGINEER shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within 30 calendar days of the Contractor's receipt of the ENGINEER's final estimate. If, after such 30-day period, a dispute still exists, the Contractor may approve the ENGINEER's estimate under protest of the quantities in dispute, and such disputed quantities shall be considered by the OWNER as a claim in accordance with the

subsection 50-16 titled CLAIMS FOR ADJUSTMENT AND DISPUTES of Section 50.

After the Contractor has approved, or approved under protest, the ENGINEER's final estimate, and after the ENGINEER's receipt of the project closeout documentation required in subsection 90-11 Project Closeout, final payment will be processed based on the entire sum, or the undisputed sum in case of approval under protest, determined to be due the Contractor less all previous payments and all amounts to be deducted under the provisions of the contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

If the Contractor has filed a claim for additional compensation under the provisions of the subsection 50-16 titled CLAIMS FOR ADJUSTMENTS AND DISPUTES of Section 50 or under the provisions of this subsection, such claims will be considered by the OWNER in accordance with local laws or ordinances. Upon final adjudication of such claims, any additional payment determined to be due the Contractor will be paid pursuant to a supplemental final estimate.

90-10 Construction Warranty.

a. In addition to any other warranties in this contract, the Contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, workmanship, or design furnished, or performed by the Contractor or any subcontractor or supplier at any tier.

b. This warranty shall continue for a period of one year from the date of final acceptance of the work. If the OWNER takes possession of any part of the work before final acceptance, this warranty shall continue for a period of one year from the date the OWNER takes possession. However, this will not relieve the Contractor from corrective items required by the final acceptance of the project work.

c. The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to OWNER real or personal property, when that damage is the result of:

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, workmanship, or design furnished by the Contractor.

d. The Contractor shall restore any work damaged in fulfilling the terms and

conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for one year from the date of repair or replacement.

e. The OWNER will notify the Contractor, in writing, within thirty (30) days after the discovery of any failure, defect, or damage.

f. If the Contractor fails to remedy any failure, defect, or damage within 14 days after receipt of notice, the OWNER shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

g. With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall: (1) Obtain all warranties that would be given in normal commercial practice; (2) Require all warranties to be executed, in writing, for the benefit of the OWNER, as directed by the OWNER, and (3) Enforce all warranties for the benefit of the OWNER.

h. This warranty shall not limit the OWNER's rights with respect to latent defects, gross mistakes, or fraud.

90-11 Project Closeout. Approval of final payment to the Contractor is contingent upon completion and submittal of the items listed below. The final payment will not be approved until the ENGINEER approves the Contractor's final submittal. The Contractor shall:

a. Provide two (2) copies of all manufacturers warranties specified for materials, equipment, and installations.

b. Provide weekly payroll records (not previously received) from the general Contractor and all subcontractors.

c. Complete final cleanup in accordance with subsection 40-08, FINAL CLEANUP.

d. Complete all punch list items identified during the Final Inspection.

e. Provide complete release of all claims for labor and material arising out of the Contract.

f. Provide a certified statement signed by the subcontractors, indicating actual amounts paid to the Disadvantaged Business Enterprise (DBE) subcontractors and/or suppliers associated with the project.

g. When applicable per state requirements, return copies of sales tax

completion forms.

h. Manufacturer's certifications for all items incorporated in the work.

i. All required record drawings, as-built drawings or as-constructed drawings.

j. Project Operation and Maintenance (O&M) Manual.

k. Equipment commissioning documentation submitted, if required.

END OF SECTION 90

SECTION 100

CONTRACTOR QUALITY CONTROL PROGRAM

100-01 General. When the specification requires a Contractor Quality Control Program, the Contractor shall establish, provide, and maintain an effective Quality Control Program that details the methods and procedures that will be taken to assure that all materials and completed construction required by this contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified here and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose.

The intent of this section is to enable the Contractor to establish a necessary level of control that will:

a. Adequately provide for the production of acceptable quality materials.

b. Provides sufficient information to assure both the Contractor and the ENGINEER that the specification requirements can be met.

c. Allow the Contractor as much latitude as possible to develop his or her own standard of control.

The Contractor shall be prepared to discuss and present, at the preconstruction conference, their understanding of the quality control requirements. The Contractor shall not begin any construction or production of materials to be incorporated into the completed work until the Quality Control Program has been reviewed and accepted by the ENGINEER. No partial payment will be made for materials subject to specific quality control requirements until the Quality Control Program has been reviewed.

The quality control requirements contained in this section and elsewhere in the contract technical specifications are in addition to and separate from the acceptance testing requirements. Acceptance testing requirements are the responsibility of the ENGINEER.

Paving projects over $ 250,000 shall have a Quality Control (QC)/Quality Assurance (QA) workshop with the ENGINEER, Contractor, subcontractors, testing laboratories, and OWNER's representative and the FAA prior to or at start of construction. The workshop shall address QC and QA requirements of the project specifications. The Contractor shall coordinate with the Airport and the ENGINEER on time and location of the QC/QA workshop.

100-02 Description of Program.

a. General Description. The Contractor shall establish a Quality Control Program to perform quality control inspection and testing of all items of work required by the technical specifications, including those performed by subcontractors. This Quality Control Program shall ensure conformance to applicable specifications and plans with respect to materials, workmanship, construction, finish, and functional performance. The Quality Control Program shall be effective for control of all construction work performed under this Contract and shall specifically include surveillance and tests required by the technical specifications, in addition to other requirements of this section and any other activities deemed necessary by the Contractor to establish an effective level of quality control.

b. Quality Control Program. The Contractor shall describe the Quality Control Program in a written document that shall be reviewed and approved by the ENGINEER prior to the start of any production, construction, or off-site fabrication. The written Quality Control Program shall be submitted to the ENGINEER for review and approval at least 5 calendar days before the Pre-Construction Conference. The Contractor's Quality Control Plan and Quality Control testing laboratory must be approved in writing by the ENGINEER prior to the Notice to Proceed (NTP).

The Quality Control Program shall be organized to address, as a minimum, the following items:

a. Quality control organization
b. Project progress schedule
c. Submittals schedule
d. Inspection requirements
e. Quality control testing plan
f. Documentation of quality control activities
g. Requirements for corrective action when quality control and/or acceptance criteria are not met

The Contractor is encouraged to add any additional elements to the Quality Control Program that is deemed necessary to adequately control all production and/or construction processes required by this contract.

100-03 Quality Control Organization. The Contractor Quality Control Program shall be implemented by the establishment of a separate quality control organization. An organizational chart shall be developed to show all quality control personnel and how these personnel integrate with other management/production and construction functions and personnel.

The organizational chart shall identify all quality control staff by name and

function, and shall indicate the total staff required to implement all elements of the Quality Control Program, including inspection and testing for each item of work. If necessary, different technicians can be used for specific inspection and testing functions for different items of work. If an outside organization or independent testing laboratory is used for implementation of all or part of the Quality Control Program, the personnel assigned shall be subject to the qualification requirements of paragraph 100-03a and 100-03b. The organizational chart shall indicate which personnel are Contractor employees and which are provided by an outside organization.

The quality control organization shall, as a minimum, consist of the following personnel:

a. Program Administrator. The Program Administrator shall be a full-time employee of the Contractor, or a consultant engaged by the Contractor. The Program Administrator shall have a minimum of five (5) years of experience in airport and/or highway construction and shall have had prior quality control experience on a project of comparable size and scope as the contract.

Additional qualifications for the Program Administrator shall include at least one of the following requirements:

(1) Professional ENGINEER with one (1) year of airport paving experience.
(2) ENGINEER-in-training with two (2) years of airport paving experience.
(3) An individual with three (3) years of highway and/or airport paving experience, with a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology or Construction.
(4) Construction materials technician certified at Level III by the National Institute for Certification in Engineering Technologies (NICET).
(5) Highway materials technician certified at Level III by NICET.
(6) Highway construction technician certified at Level III by NICET.
(7) A NICET certified Engineering technician in Civil Engineering Technology with five (5) years of highway and/or airport paving experience.

The Program Administrator shall have full authority to institute any and all actions necessary for the successful implementation of the Quality Control Program to ensure compliance with the contract plans and technical specifications. The Program Administrator shall report directly to a responsible officer of the construction firm. The Program Administrator may supervise the Quality Control Program on more than one project provided that person can be at the job site within two (2) hours after being notified of a problem.

b. Quality Control Technicians. A sufficient number of quality control

technicians necessary to adequately implement the Quality Control Program shall be provided. These personnel shall be either ENGINEERs, engineering technicians, or experienced craftsman with qualifications in the appropriate field equivalent to NICET Level II or higher construction materials technician or highway construction technician and shall have a minimum of two (2) years of experience in their area of expertise.

The quality control technicians shall report directly to the Program Administrator and shall perform the following functions:

(1) Inspection of all materials, construction, plant, and equipment for conformance to the technical specifications, and as required by subsection 100-06.
(2) Performance of all quality control tests as required by the technical specifications and subsection 100-07.
(3) Performance of density tests for the ENGINEER when required by the technical specifications.

Certification at an equivalent level, by a state or nationally recognized organization will be acceptable in lieu of NICET certification.

c. Staffing Levels. The Contractor shall provide sufficient qualified quality control personnel to monitor each work activity at all times. Where material is being produced in a plant for incorporation into the work, separate plant and field technicians shall be provided at each plant and field placement location. The scheduling and coordinating of all inspection and testing must match the type and pace of work activity. The Quality Control Program shall state where different technicians will be required for different work elements.

100-04 Project Progress Schedule. The Contractor shall submit a coordinated construction schedule for all work activities. The schedule shall be prepared as a network diagram in Critical Path Method (CPM), Program Evaluation and Review Technique (PERT), or other format, or as otherwise specified in the contract. As a minimum, it shall provide information on the sequence of work activities, milestone dates, and activity duration.

The Contractor shall maintain the work schedule and provide an update and analysis of the progress schedule on a twice monthly basis, or as otherwise specified in the contract. Submission of the work schedule shall not relieve the Contractor of overall responsibility for scheduling, sequencing, and coordinating all work to comply with the requirements of the contract.

100-05 Submittals Schedule. The Contractor shall submit a detailed listing of all submittals (for example, mix designs, material certifications) and shop drawings required by the technical specifications. The listing can be developed in a spreadsheet format and shall include:

a. Specification item number
b. Item description
c. Description of submittal
d. Specification paragraph requiring submittal
e. Scheduled date of submittal

100-06 Inspection Requirements. Quality control inspection functions shall be organized to provide inspections for all definable features of work, as detailed below. All inspections shall be documented by the Contractor as specified by subsection 100-07.

Inspections shall be performed daily to ensure continuing compliance with contract requirements until completion of the particular feature of work. These shall include the following minimum requirements:

a. During plant operation for material production, quality control test results and periodic inspections shall be used to ensure the quality of aggregates and other mix components, and to adjust and control mix proportioning to meet the approved mix design and other requirements of the technical specifications. All equipment used in proportioning and mixing shall be inspected to ensure its proper operating condition. The Quality Control Program shall detail how these and other quality control functions will be accomplished and used.

b. During field operations, quality control test results and periodic inspections shall be used to ensure the quality of all materials and workmanship. All equipment used in placing, finishing, and compacting shall be inspected to ensure its proper operating condition and to ensure that all such operations are in conformance to the technical specifications and are within the plan dimensions, lines, grades, and tolerances specified. The Program shall document how these and other quality control functions will be accomplished and used.

100-07 Quality Control Testing Plan. As a part of the overall Quality Control Program, the Contractor shall implement a quality control testing plan, as required by the technical specifications. The testing plan shall include the minimum tests and test frequencies required by each technical specification Item, as well as any additional quality control tests that the Contractor deems necessary to adequately control production and/or construction processes.

The testing plan can be developed in a spreadsheet fashion and shall, as a minimum, include the following:

a. Specification item number (for example, P-401)
b. Item description (for example, Plant Mix Bituminous Pavements)

c. Test type (for example, gradation, grade, asphalt content)
d. Test standard (for example, ASTM or American Association of State Highway and Transportation Officials (AASHTO) test number, as applicable)
e. Test frequency (for example, as required by technical specifications or minimum frequency when requirements are not stated)
f. Responsibility (for example, plant technician)
g. Control requirements (for example, target, permissible deviations)

The testing plan shall contain a statistically-based procedure of random sampling for acquiring test samples in accordance with ASTM D 3665. The ENGINEER shall be provided the opportunity to witness quality control sampling and testing.

All quality control test results shall be documented by the Contractor as required by subsection 100-08.

100-08 Documentation. The Contractor shall maintain current quality control records of all inspections and tests performed. These records shall include factual evidence that the required inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejection, etc.; proposed remedial action; and corrective actions taken.

These records must cover both conforming and defective or deficient features, and must include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the contract. Legible copies of these records shall be furnished to the ENGINEER daily. The records shall cover all work placed subsequent to the previously furnished records and shall be verified and signed by the Contractor's Program Administrator.

Specific Contractor quality control records required for the contract shall include, but are not necessarily limited to, the following records:

a. Daily Inspection Reports. Each Contractor quality control technician shall maintain a daily log of all inspections performed for both Contractor and subcontractor operations. These technician's daily reports shall provide factual evidence that continuous quality control inspections have been performed and shall, as a minimum, include the following:

(1) Technical specification item number and description
(2) Compliance with approved submittals
(3) Proper storage of materials and equipment
(4) Proper operation of all equipment
(5) Adherence to plans and technical specifications
(6) Review of quality control tests

(7) Safety inspection.

The daily inspection reports shall identify inspections conducted, results of inspections, location and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed.

The daily inspection reports shall be signed by the responsible quality control technician and the Program Administrator. The ENGINEER shall be provided at least one copy of each daily inspection report on the work day following the day of record.

b. Daily Test Reports. The Contractor shall be responsible for establishing a system that will record all quality control test results. Daily test reports shall document the following information:

(1) Technical specification item number and description
(2) Test designation
(3) Location
(4) Date of test
(5) Control requirements
(6) Test results
(7) Causes for rejection
(8) Recommended remedial actions
(9) Retests

Test results from each day's work period shall be submitted to the ENGINEER prior to the start of the next day's work period. When required by the technical specifications, the Contractor shall maintain statistical quality control charts. The daily test reports shall be signed by the responsible quality control technician and the Program Administrator.

100-09 Corrective Action Requirements. The Quality Control Program shall indicate the appropriate action to be taken when a process is deemed, or believed, to be out of control (out of tolerance) and detail what action will be taken to bring the process into control. The requirements for corrective action shall include both general requirements for operation of the Quality Control Program as a whole, and for individual items of work contained in the technical specifications.

The Quality Control Program shall detail how the results of quality control inspections and tests will be used for determining the need for corrective action and shall contain clear sets of rules to gauge when a process is out of control and the type of correction to be taken to regain process control.

When applicable or required by the technical specifications, the Contractor shall establish and use statistical quality control charts for individual quality control tests. The requirements for corrective action shall be linked to the

control charts.

100-10 Surveillance by the ENGINEER. All items of material and equipment shall be subject to surveillance by the ENGINEER at the point of production, manufacture or shipment to determine if the Contractor, producer, manufacturer or shipper maintains an adequate quality control system in conformance with the requirements detailed here and the applicable technical specifications and plans. In addition, all items of materials, equipment and work in place shall be subject to surveillance by the ENGINEER at the site for the same purpose.

Surveillance by the ENGINEER does not relieve the Contractor of performing quality control inspections of either on-site or off-site Contractor's or subcontractor's work.

100-11 Noncompliance.

a. The ENGINEER will notify the Contractor of any noncompliance with any of the foregoing requirements. The Contractor shall, after receipt of such notice, immediately take corrective action. Any notice, when delivered by the ENGINEER or his or her authorized representative to the Contractor or his or her authorized representative at the site of the work, shall be considered sufficient notice.

b. In cases where quality control activities do not comply with either the Contractor Quality Control Program or the contract provisions, or where the Contractor fails to properly operate and maintain an effective Quality Control Program, as determined by the ENGINEER, the ENGINEER may:

(1) Order the Contractor to replace ineffective or unqualified quality control personnel or subcontractors.
(2) Order the Contractor to stop operations until appropriate corrective actions are taken.

END OF SECTION 100

SECTION 105

MOBILIZATION

105-1 ~~**Description.** This item shall consist of work and operations, but is not limited to, work and operations necessary for the movement of personnel, equipment, material and supplies to and from the project site for work on the project except as provided in the contract as separate pay items.~~ **SEE SUPPLEMENTATL GENERAL CONDITIONS 105-1.**

105-1.1 **Posted Notices.** Prior to commencement of construction activities the Contractor must post the following documents in a prominent and accessible place where they may be easily viewed by all employees of the prime Contractor and by all employees of subcontractors engaged by the prime Contractor: Equal Employment Opportunity (EEO) Poster " Equal Employment Opportunity is the Law" in accordance with the Office of Federal Contract Compliance Programs Executive Order 11246, as amended; Davis Bacon Wage Poster (WH 1321) - DOL "Notice to All Employees" Poster; and Applicable Davis-Bacon Wage Rate Determination. These notices must remain posted until final acceptance of the work by the OWNER.

105-2 **Basis of Measurement and Payment.** Based upon the contract lump sum price for "Mobilization" partial payments will be allowed as follows:

a. With first pay request, 25%.
b. When 25% or more of the original contract is earned, an additional 25%.
c. When 50% or more of the original contract is earned, an additional 40%.
d. After Final Inspection, Staging area clean-up and delivery of all Project Closeout materials as required by 90-11, the final 10%.

END OF SECTION 105

SECTION 110

METHOD OF ESTIMATING PERCENTAGE OF MATERIAL WITHIN SPECIFICATION LIMITS (PWL)

Spreadsheets for PWL calculations are available at the following website: http://www.faa.gov/airports/engineering/design_software/.

110-01 General. When the specifications provide for acceptance of material based on the method of estimating percentage of material within specification limits (PWL), the PWL will be determined in accordance with this section. All test results for a lot will be analyzed statistically to determine the total estimated percent of the lot that is within specification limits. The PWL is computed using the sample average (X) and sample standard deviation (S_n) of the specified number (n) of sublots 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, Q_L for Lower Quality Index and/or Q_U for Upper Quality Index, is computed and the PWL for the lot for the specified n is determined from Table 1. All specification limits specified in the technical sections shall be absolute values. Test results used in the calculations shall be to the significant figure given in the test procedure.

There is some degree of uncertainty (risk) in the measurement for acceptance because only a small fraction of production material (the population) is sampled and tested. This uncertainty exists because all portions of the production material have the same probability to be randomly sampled. The Contractor's risk is the probability that material produced at the acceptable quality level is rejected or subjected to a pay adjustment. The OWNER's risk is the probability that material produced at the rejectable quality level is accepted.

It is the intent of this section to inform the Contractor that, in order to consistently offset the Contractor's risk for material evaluated, production quality (using population average and population standard deviation) must be maintained at the acceptable quality specified or higher. In all cases, it is the responsibility of the Contractor to produce at quality levels that will meet the specified acceptance criteria when sampled and tested at the frequencies specified.

110-02 Method for Computing PWL. The computational sequence for computing PWL is as follows:

a. Divide the lot into n sublots in accordance with the acceptance requirements of the specification.

b. Locate the random sampling position within the sublot in accordance with

the requirements of the specification.

c. 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.

d. Find the sample average (X) for all sublot values within the lot by using the following formula:

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

Where: X = Sample average of all sublot values within a lot
x_1, x_2 = Individual sublot values
n = Number of sublots

e. Find the sample standard deviation (S_n) by use of the following formula:

$$S_n = [(d_1^2 + d_2^2 + d_3^2 + \ldots d_n^2)/(n-1)]^{1/2}$$

Where: S_n = Sample standard deviation of the number of sublot values in the set
d_1, d_2 = Deviations of the individual sublot values x_1, x_2, … from the average value X
that is: $d_1 = (x_1 - X)$, $d_2 = (x_2 - X)$ … $d_n = (x_n - X)$
n = Number of sublots

f. For single sided specification limits (that is, L only), compute the Lower Quality Index Q_L by use of the following formula:

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

Where: L = specification lower tolerance limit

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

g. For double-sided specification limits (that is, L and U), compute the Quality Indexes Q_L and Q_U by use of the following formulas:

$$Q_L = (X - L) / S_n$$
and
$$Q_U = (U - X) / S_n$$

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 Q_L and Q_U, using the column appropriate to the total number (n) of measurements, and determining the percent of material above P_L and percent of material below P_U for each tolerance limit. If the values of Q_L fall between values shown

on the table, use the next higher value of P_L or P_U. Determine the PWL by use of the following formula:

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

Where: P_L = percent within lower specification limit
P_U = 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.

$X = (x_1 + x_2 + x_3 + . . . x_n) / n$
$X = (96.60 + 97.55 + 99.30 + 98.35) / 4$
X = 97.95% density

3. Calculate the standard deviation for the lot.

$S_n = [((96.60 - 97.95)^2 + (97.55 - 97.95)^2 + (99.30 - 97.95)^2 + (98.35 - 97.95)^2)) / (4 - 1)]^{1/2}$
$S_n = [(1.82 + 0.16 + 1.82 + 0.16) / 3]^{1/2}$
$S_n = 1.15$

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

$Q_L = (X - L) / S_n$
$Q_L = (97.95 - 96.30) / 1.15$
$Q_L = 1.4348$

5. Determine PWL by entering Table 1 with Q_L= 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 = 5.00
A-2 = 3.74
A-3 = 2.30
A-4 = 3.25

2. Calculate the average air voids for the lot.

$X = (x_1 + x_2 + x_3 \ldots n) / n$
$X = (5.00 + 3.74 + 2.30 + 3.25) / 4$
$X = 3.57\%$

3. Calculate the standard deviation S_n for the lot.

$S_n = [((3.57 - 5.00)^2 + (3.57 - 3.74)^2 + (3.57 - 2.30)^2 + (3.57 - 3.25)^2) / (4 - 1)]^{1/2}$
$S_n = [(2.04 + 0.03 + 1.62 + 0.10) / 3]^{1/2}$
$S_n = 1.12$

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 $Q_L = 1.41$ 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 $Q_U = 1.29$ and n = 4.

$P_U = 93$

8. Calculate Air Voids PWL

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

EXAMPLE OF OUTLIER CALCULATION (REFERENCE ASTM E178)

Project: Example Project

Test Item: Item P-401, Lot A.

A. Outlier Determination for Mat Density.

1. Density of four random cores taken from Lot A arranged in descending order.

A-3 = 99.30
A-4 = 98.35
A-2 = 97.55
A-1 = 96.60

2. Use n=4 and upper 5% significance level of to find the critical value for test criterion = 1.463.

3. Use average density, standard deviation, and test criterion value to evaluate density measurements.

   a. For measurements greater than the average:

   If (measurement - average)/(standard deviation) is less than test criterion, then the measurement is not considered an outlier

   For A-3, check if (99.30 - 97.95) / 1.15 is greater than 1.463.
   Since 1.174 is less than 1.463, the value is not an outlier.

   b. For measurements less than the average:

   If (average - measurement)/(standard deviation) is less than test criterion, then the measurement is not considered an outlier.

   For A-1, check if (97.95 - 96.60) / 1.15 is greater than 1.463.
   Since 1.435 is less than 1.463, the value is not an outlier.

Note: In this example, a measurement would be considered an outlier if the density were:

Greater than (97.95 + 1.463 × 1.15) = 99.63%

OR

less than (97.95 - 1.463 × 1.15) = 96.27%.

Table 1. Table for Estimating Percent of Lot Within Limits (PWL)

Percent Within Limits (P_L and P_U)	Positive Values of Q (Q_L and Q_U)							
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10
99	1.1541	1.4700	1.6714	1.8008	1.8888	1.9520	1.9994	2.0362
98	1.1524	1.4400	1.6016	1.6982	1.7612	1.8053	1.8379	1.8630
97	1.1496	1.4100	1.5427	1.6181	1.6661	1.6993	1.7235	1.7420
96	1.1456	1.3800	1.4897	1.5497	1.5871	1.6127	1.6313	1.6454
95	1.1405	1.3500	1.4407	1.4887	1.5181	1.5381	1.5525	1.5635
94	1.1342	1.3200	1.3946	1.4329	1.4561	1.4717	1.4829	1.4914
93	1.1269	1.2900	1.3508	1.3810	1.3991	1.4112	1.4199	1.4265
92	1.1184	1.2600	1.3088	1.3323	1.3461	1.3554	1.3620	1.3670
91	1.1089	1.2300	1.2683	1.2860	1.2964	1.3032	1.3081	1.3118
90	1.0982	1.2000	1.2290	1.2419	1.2492	1.2541	1.2576	1.2602
89	1.0864	1.1700	1.1909	1.1995	1.2043	1.2075	1.2098	1.2115
88	1.0736	1.1400	1.1537	1.1587	1.1613	1.1630	1.1643	1.1653
87	1.0597	1.1100	1.1173	1.1192	1.1199	1.1204	1.1208	1.1212
86	1.0448	1.0800	1.0817	1.0808	1.0800	1.0794	1.0791	1.0789
85	1.0288	1.0500	1.0467	1.0435	1.0413	1.0399	1.0389	1.0382
84	1.0119	1.0200	1.0124	1.0071	1.0037	1.0015	1.0000	0.9990
83	0.9939	0.9900	0.9785	0.9715	0.9671	0.9643	0.9624	0.9610
82	0.9749	0.9600	0.9452	0.9367	0.9315	0.9281	0.9258	0.9241
81	0.9550	0.9300	0.9123	0.9025	0.8966	0.8928	0.8901	0.8882
80	0.9342	0.9000	0.8799	0.8690	0.8625	0.8583	0.8554	0.8533
79	0.9124	0.8700	0.8478	0.8360	0.8291	0.8245	0.8214	0.8192
78	0.8897	0.8400	0.8160	0.8036	0.7962	0.7915	0.7882	0.7858
77	0.8662	0.8100	0.7846	0.7716	0.7640	0.7590	0.7556	0.7531
76	0.8417	0.7800	0.7535	0.7401	0.7322	0.7271	0.7236	0.7211
75	0.8165	0.7500	0.7226	0.7089	0.7009	0.6958	0.6922	0.6896

Percent Within Limits (P_L and P_U)	Positive Values of Q (Q_L and Q_U)							
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10
74	0.7904	0.7200	0.6921	0.6781	0.6701	0.6649	0.6613	0.6587
73	0.7636	0.6900	0.6617	0.6477	0.6396	0.6344	0.6308	0.6282
72	0.7360	0.6600	0.6316	0.6176	0.6095	0.6044	0.6008	0.5982
71	0.7077	0.6300	0.6016	0.5878	0.5798	0.5747	0.5712	0.5686
70	0.6787	0.6000	0.5719	0.5582	0.5504	0.5454	0.5419	0.5394
69	0.6490	0.5700	0.5423	0.5290	0.5213	0.5164	0.5130	0.5105
68	0.6187	0.5400	0.5129	0.4999	0.4924	0.4877	0.4844	0.4820
67	0.5878	0.5100	0.4836	0.4710	0.4638	0.4592	0.4560	0.4537
66	0.5563	0.4800	0.4545	0.4424	0.4355	0.4310	0.4280	0.4257
65	0.5242	0.4500	0.4255	0.4139	0.4073	0.4030	0.4001	0.3980
64	0.4916	0.4200	0.3967	0.3856	0.3793	0.3753	0.3725	0.3705
63	0.4586	0.3900	0.3679	0.3575	0.3515	0.3477	0.3451	0.3432
62	0.4251	0.3600	0.3392	0.3295	0.3239	0.3203	0.3179	0.3161
61	0.3911	0.3300	0.3107	0.3016	0.2964	0.2931	0.2908	0.2892
60	0.3568	0.3000	0.2822	0.2738	0.2691	0.2660	0.2639	0.2624
59	0.3222	0.2700	0.2537	0.2461	0.2418	0.2391	0.2372	0.2358
58	0.2872	0.2400	0.2254	0.2186	0.2147	0.2122	0.2105	0.2093
57	0.2519	0.2100	0.1971	0.1911	0.1877	0.1855	0.1840	0.1829
56	0.2164	0.1800	0.1688	0.1636	0.1607	0.1588	0.1575	0.1566
55	0.1806	0.1500	0.1406	0.1363	0.1338	0.1322	0.1312	0.1304
54	0.1447	0.1200	0.1125	0.1090	0.1070	0.1057	0.1049	0.1042
53	0.1087	0.0900	0.0843	0.0817	0.0802	0.0793	0.0786	0.0781
52	0.0725	0.0600	0.0562	0.0544	0.0534	0.0528	0.0524	0.0521
51	0.0363	0.0300	0.0281	0.0272	0.0267	0.0264	0.0262	0.0260
50	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Percent Within Limits (P_L and P_U)	Negative Values of Q (Q_L and Q_U)							
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10
49	-0.0363	-0.0300	-0.0281	-0.0272	-0.0267	-0.0264	-0.0262	-0.0260
48	-0.0725	-0.0600	-0.0562	-0.0544	-0.0534	-0.0528	-0.0524	-0.0521
47	-0.1087	-0.0900	-0.0843	-0.0817	-0.0802	-0.0793	-0.0786	-0.0781
46	-0.1447	-0.1200	-0.1125	-0.1090	-0.1070	-0.1057	-0.1049	-0.1042
45	-0.1806	-0.1500	-0.1406	-0.1363	-0.1338	-0.1322	-0.1312	-0.1304
44	-0.2164	-0.1800	-0.1688	-0.1636	-0.1607	-0.1588	-0.1575	-0.1566
43	-0.2519	-0.2100	-0.1971	-0.1911	-0.1877	-0.1855	-0.1840	-0.1829
42	-0.2872	-0.2400	-0.2254	-0.2186	-0.2147	-0.2122	-0.2105	-0.2093
41	-0.3222	-0.2700	-0.2537	-0.2461	-0.2418	-0.2391	-0.2372	-0.2358
40	-0.3568	-0.3000	-0.2822	-0.2738	-0.2691	-0.2660	-0.2639	-0.2624
39	-0.3911	-0.3300	-0.3107	-0.3016	-0.2964	-0.2931	-0.2908	-0.2892
38	-0.4251	-0.3600	-0.3392	-0.3295	-0.3239	-0.3203	-0.3179	-0.3161
37	-0.4586	-0.3900	-0.3679	-0.3575	-0.3515	-0.3477	-0.3451	-0.3432
36	-0.4916	-0.4200	-0.3967	-0.3856	-0.3793	-0.3753	-0.3725	-0.3705
35	-0.5242	-0.4500	-0.4255	-0.4139	-0.4073	-0.4030	-0.4001	-0.3980
34	-0.5563	-0.4800	-0.4545	-0.4424	-0.4355	-0.4310	-0.4280	-0.4257
33	-0.5878	-0.5100	-0.4836	-0.4710	-0.4638	-0.4592	-0.4560	-0.4537
32	-0.6187	-0.5400	-0.5129	-0.4999	-0.4924	-0.4877	-0.4844	-0.4820
31	-0.6490	-0.5700	-0.5423	-0.5290	-0.5213	-0.5164	-0.5130	-0.5105
30	-0.6787	-0.6000	-0.5719	-0.5582	-0.5504	-0.5454	-0.5419	-0.5394
29	-0.7077	-0.6300	-0.6016	-0.5878	-0.5798	-0.5747	-0.5712	-0.5686
28	-0.7360	-0.6600	-0.6316	-0.6176	-0.6095	-0.6044	-0.6008	-0.5982
27	-0.7636	-0.6900	-0.6617	-0.6477	-0.6396	-0.6344	-0.6308	-0.6282
26	-0.7904	-0.7200	-0.6921	-0.6781	-0.6701	-0.6649	-0.6613	-0.6587
25	-0.8165	-0.7500	-0.7226	-0.7089	-0.7009	-0.6958	-0.6922	-0.6896

Percent Within Limits (P_L and P_U)	Negative Values of Q (Q_L and Q_U)							
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10
24	-0.8417	-0.7800	-0.7535	-0.7401	-0.7322	-0.7271	-0.7236	-0.7211
23	-0.8662	-0.8100	-0.7846	-0.7716	-0.7640	-0.7590	-0.7556	-0.7531
22	-0.8897	-0.8400	-0.8160	-0.8036	-0.7962	-0.7915	-0.7882	-0.7858
21	-0.9124	-0.8700	-0.8478	-0.8360	-0.8291	-0.8245	-0.8214	-0.8192
20	-0.9342	-0.9000	-0.8799	-0.8690	-0.8625	-0.8583	-0.8554	-0.8533
19	-0.9550	-0.9300	-0.9123	-0.9025	-0.8966	-0.8928	-0.8901	-0.8882
18	-0.9749	-0.9600	-0.9452	-0.9367	-0.9315	-0.9281	-0.9258	-0.9241
17	-0.9939	-0.9900	-0.9785	-0.9715	-0.9671	-0.9643	-0.9624	-0.9610
16	-1.0119	-1.0200	-1.0124	-1.0071	-1.0037	-1.0015	-1.0000	-0.9990
15	-1.0288	-1.0500	-1.0467	-1.0435	-1.0413	-1.0399	-1.0389	-1.0382
14	-1.0448	-1.0800	-1.0817	-1.0808	-1.0800	-1.0794	-1.0791	-1.0789
13	-1.0597	-1.1100	-1.1173	-1.1192	-1.1199	-1.1204	-1.1208	-1.1212
12	-1.0736	-1.1400	-1.1537	-1.1587	-1.1613	-1.1630	-1.1643	-1.1653
11	-1.0864	-1.1700	-1.1909	-1.1995	-1.2043	-1.2075	-1.2098	-1.2115
10	-1.0982	-1.2000	-1.2290	-1.2419	-1.2492	-1.2541	-1.2576	-1.2602
9	-1.1089	-1.2300	-1.2683	-1.2860	-1.2964	-1.3032	-1.3081	-1.3118
8	-1.1184	-1.2600	-1.3088	-1.3323	-1.3461	-1.3554	-1.3620	-1.3670
7	-1.1269	-1.2900	-1.3508	-1.3810	-1.3991	-1.4112	-1.4199	-1.4265
6	-1.1342	-1.3200	-1.3946	-1.4329	-1.4561	-1.4717	-1.4829	-1.4914
5	-1.1405	-1.3500	-1.4407	-1.4887	-1.5181	-1.5381	-1.5525	-1.5635
4	-1.1456	-1.3800	-1.4897	-1.5497	-1.5871	-1.6127	-1.6313	-1.6454
3	-1.1496	-1.4100	-1.5427	-1.6181	-1.6661	-1.6993	-1.7235	-1.7420
2	-1.1524	-1.4400	-1.6016	-1.6982	-1.7612	-1.8053	-1.8379	-1.8630
1	-1.1541	-1.4700	-1.6714	-1.8008	-1.8888	-1.9520	-1.9994	-2.0362

END OF SECTION 110

SUPPLEMENTAL GENERAL CONDITIONS

SUPPLEMENTAL GENERAL CONDITIONS

SECTION 10 – DEFINITION OF TERMS.

10-06 **Airport**. Airport means an area of land or water which is used or intended to be used for the landing and takeoff of aircraft; an appurtenant area used or intended to be used for airport buildings or other airport facilities or rights of way; and airport buildings and facilities located in any of these areas, and includes a heliport. For this project, Airport shall refer to the Georgetown County Airport, 129 Airport Road, Georgetown, South Carolina 29440.

10-15 **Contract Time**. The number of calendar days, stated in the proposal, allowed for completion of the contract, including authorized time extensions.

10-20 **Engineer**. The individual, partnership, firm, or corporation duly authorized by the OWNER to be responsible for engineering observation of the contract work and acting directly or through an authorized representative. For this project, ENGINEER shall refer to Talbert & Bright, Inc., 4810 Shelley Drive, Wilmington, North Carolina 28405.

10-26 **Inspector (Resident Project Representative).** An authorized representative of the ENGINEER assigned to observe construction and coordinate all inspections and/or tests of work performed or being performed, or of the materials furnished or being furnished by the Contractor.

10-33 **Owner**. The term "OWNER" shall mean the party of the first part or the contracting agency signatory to the contract. Where the term "OWNER" is capitalized in this document, it shall mean Airport Sponsor only. For this project OWNER shall refer to the Georgetown County, 129 Screven Street, Suite 239, Georgetown, South Carolina 29440.

10-44 **Sponsor**. A Sponsor is defined in 49 USC § 47102(24) as a public agency that submits to the FAA for an AIP grant; or a private Owner of a public-use airport that submits to the FAA an application for an AIP grant for the airport. For this project, Sponsor shall refer to the Georgetown County, 129 Screven Street, Suite 239, Georgetown, South Carolina 29440.

SECTION 20 – PROPOSAL REQUIREMENTS AND CONDITIONS.

20-02 **Qualification of Bidders**. Each bidder shall furnish the OWNER satisfactory evidence of his or her competency to perform the proposed work. Such evidence of competency, unless otherwise specified, shall consist of statements covering the bidder's past experience on similar work, a list of equipment that would be available for the work, and a list of key personnel that would be available. In addition, each bidder shall furnish the OWNER

satisfactory evidence of his or her financial responsibility. Such evidence of financial responsibility, unless otherwise specified, shall consist of a confidential statement or report of the bidder's financial resources and liabilities as of the last calendar year or the bidder's last fiscal year. Such statements or reports shall be certified by a public accountant. At the time of submitting such financial statements or reports, the bidder shall further certify whether his or her financial responsibility is approximately the same as stated or reported by the public accountant. If the bidder's financial responsibility has changed, the bidder shall qualify the public accountant's statement or report to reflect the bidder's true financial condition at the time such qualified statement or report is submitted to the OWNER.

Unless otherwise specified, a bidder may submit evidence that he or she is prequalified with the South Carolina Department of Transportation (SCDOT) and is on the current "bidder's list" of the state in which the proposed work is located. Such evidence of South Carolina Department of Transportation (SCDOT) prequalification may be submitted as evidence of financial responsibility in lieu of the certified statements or reports specified above.

Bidders must also hold a South Carolina General Contractor License with the South Carolina Licensing Board for General Contractors. The License shall be current at the time of bid.

Each bidder shall submit "Evidence of Competency" and "Financial Responsibility" to the Owner at the time of the Bid opening.

SECTION 40 – SCOPE OF WORK.

40-06 Removal of Existing Structures. All existing structures encountered within the established lines, grades, or grading sections shall be removed by the Contractor, unless such existing structures are otherwise specified to be relocated, adjusted up or down, salvaged, abandoned in place, reused in the work or to remain in place.

Should the Contractor encounter an existing structure (above or below ground) in the work for which the disposition is not indicated on the plans, the ENGINEER shall be notified prior to disturbing such structure. The disposition of existing structures so encountered shall be immediately determined by the ENGINEER in accordance with the provisions of the contract.

Except as provided in the subsection 40-07 titled RIGHTS IN AND USE OF MATERIALS FOUND IN WORK of this section, it is intended that all existing materials or structures that may be encountered (within the lines, grades, or grading sections established for completion of the work) shall be used in the

work as otherwise provided for in the contract and shall remain the property of the OWNER when so used in the work.

SECTION 60 – CONTROL OF MATERIALS.

60-01 Source of Supply and Quality Requirements. The materials used in the work shall conform to the requirements of the contract, plans, and specifications. Unless otherwise specified, such materials that are manufactured or processed shall be new (as compared to used or reprocessed).

In order to expedite the inspection and testing of materials, the Contractor shall furnish complete statements to the ENGINEER as to the origin, composition, and manufacture of all materials to be used in the work. Such statements shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.

At the ENGINEER's option, materials may be approved at the source of supply before delivery is stated. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other sources.

The Contractor shall furnish airport lighting equipment that conforms to the requirements of cited materials specifications. In addition, where an FAA specification for airport lighting equipment is cited in the plans or specifications, the Contractor shall furnish such equipment that is:

a. Listed in advisory circular (AC) 150/5345-53D, Airport Lighting Equipment Certification Program, and Addendum that is in effect on the date of advertisement; and,

b. Produced by the manufacturer as listed in the Addendum cited above for the certified equipment part number.

SECTION 70 – LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC.

70-08 Barricades, Warning Signs, and Hazard Markings. The Contractor shall furnish, erect, and maintain all barricades, warning signs, and markings for hazards necessary to protect the public and the work. When used during periods of darkness, such barricades, warning signs, and hazard markings shall be suitably illuminated. Unless otherwise specified, barricades, warning signs, and markings for hazards that are in the air operations area (AOAs) shall be a maximum of 18 inches high. Unless otherwise specified, barricades shall be spaced not more than 4 feet apart. Barricades, warning signs, and

markings shall be paid for under Section PSP-11 of the Project Special Provisions.

For vehicular and pedestrian traffic, the Contractor shall furnish, erect, and maintain barricades, warning signs, lights and other traffic control devices in reasonable conformity with the Manual on Uniform Traffic Control Devices.

When the work requires closing an air operations area of the airport or portion of such area, the Contractor shall furnish, erect, and maintain temporary markings and associated lighting conforming to the requirements of advisory circular (AC) 150/5340-1L, Standards for Airport Markings.

The Contractor shall furnish, erect, and maintain markings and associated lighting of open trenches, excavations, temporary stock piles, and the Contractor's parked construction equipment that may be hazardous to the operation of emergency fire-rescue or maintenance vehicles on the airport in reasonable conformance to AC 150/5370-2G, Operational Safety on Airports During Construction.

The Contractor shall identify each motorized vehicle or piece of construction equipment in reasonable conformance to AC 150/5370-2G.

The Contractor shall furnish and erect all barricades, warning signs, and markings for hazards prior to commencing work that requires such erection and shall maintain the barricades, warning signs, and markings for hazards until their removal is directed by the ENGINEER.

Open-flame type lights shall not be permitted.

70-09 Use of Explosives. Use of explosives will be allowed for this project.

SECTION 80 – EXECUTION AND PROGRESS.

80-04 Limitation of Operations. The Contractor shall control his or her operations and the operations of his or her subcontractors and all suppliers to provide for the free and unobstructed movement of aircraft in the air operations areas (AOA) of the airport.

When the work requires the Contractor to conduct his or her operations within an AOA of the airport, the work shall be coordinated with airport operations (through the ENGINEER) at least 48 hours prior to commencement of such work. The Contractor shall not close an AOA until so authorized by the ENGINEER and until the necessary temporary marking and associated lighting is in place as provided in the subsection 70-08 titled BARRICADES, WARNING SIGNS, AND HAZARD MARKINGS of Section 70.

When the contract work requires the Contractor to work within an AOA of the airport on an intermittent basis (intermittent opening and closing of the AOA), the Contractor shall maintain constant communications as specified; immediately obey all instructions to vacate the AOA; immediately obey all instructions to resume work in such AOA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the AOA until the satisfactory conditions are provided.

Contractor shall be required to conform to safety standards contained in AC 150/5370-2G, Operational Safety on Airports During Construction.

80-07 Determination and Extension of Contract Time. The number of calendar days allowed for completion of the work shall be stated in the proposal and contract and shall be known as the CONTRACT TIME.

Should the contract time require extension for reasons beyond the Contractor's control, it shall be adjusted as follows:

a. Contract Time based on calendar days shall consist of the number of calendar days stated in the contract counting from the effective date of the notice to proceed and including all Saturdays, Sundays, holidays, and non-work days. All calendar days elapsing between the effective dates of the OWNER's orders to suspend and resume all work, due to causes not the fault of the Contractor, shall be excluded.

At the time of final payment, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in the contract time shall not consider either cost of work or the extension of contract time that has been covered by a change order or supplemental agreement. Charges against the contract time will cease as of the date of final acceptance.

If the Contractor finds it impossible for reasons beyond his or her control to complete the work within the contract time as specified, or as extended in accordance with the provisions of this subsection, the Contractor may, at any time prior to the expiration of the contract time as extended, make a written request to the OWNER for an extension of time setting forth the reasons which the Contractor believes will justify the granting of his or her request. Requests for extension of time on calendar day projects, caused by inclement weather, shall be supported with National Weather Bureau data showing the actual amount of inclement weather exceeded what could normally be expected during the contract period. The Contractor's plea that insufficient time was specified is not a valid reason for extension

of time. If the supporting documentation justify the work was delayed because of conditions beyond the control and without the fault of the Contractor, the OWNER may extend the time for completion by a change order that adjusts the contract time or completion date. The extended time for completion shall then be in full force and effect, the same as though it were the original time for completion.

SECTION 105 – MOBILIZATION.

105-1 Description. The work covered by this section consists or preparatory work and operations, for the movement of personnel, subcontractors, equipment, supplies and incidental to the project site; for development, maintenance and restoration of staging area(s); for layout of the work including any surveying required; maintenance, provision, and placement of lighted barricades; and for all other work and operations which must be performed and costs incurred prior to beginning work on the various items on the project site. The item also includes the Contractor's fixed costs through the construction and demobilization period which are not otherwise distributed among the contract items. It is the intent of this specification that all fixed costs for mobilization and demobilization for the Contractor and all subcontractors shall be included in the lump sum bid price for "Mobilization", and no additional payment for fixed costs claimed as a result of adjustment in the work quantities will be allowed, except as provided in Section 40.

END OF SUPPLEMENTAL GENERAL CONDITIONS

PROJECT SPECIAL PROVISIONS

PROJECT SPECIAL PROVISIONS

PSP-1 PRE-BID CONFERENCE

A Pre-Bid Conference will be held for this project at 11:00 am on _____, _____, 2018, at the Georgetown County Airport Conference Room, 129 Airport Road, Georgetown, South Carolina 29440. ***It is strongly recommended that all prospective bidders have a qualified representative at this Pre-Bid Conference, however attendance is not mandatory.***

PSP-2 GENERAL REQUIREMENTS - SCHEDULE OF WORK

It is the intent of the OWNER and these Specifications that the Georgetown County Airport will remain open to air traffic, except for intermittent closures, during the work accomplished under this project. For this reason, ***the Contractor will be required to submit for approval a detailed Schedule of Work to the ENGINEER three days prior to the Preconstruction Conference***. After the ENGINEER approves the progress schedule, the Contractor will be required to follow the approved schedule of work unless deviations therefrom are approved by the ENGINEER.

The Contractor's attention is directed to the following requirements in developing his Schedule of Work:

1. The purpose of the Schedule of Work is to assure a safe area of operation for the Contractor and Airport traffic, to coordinate the efforts of various Contractors, to assure maintenance of traffic on the runway, taxiways, and aprons adjacent to the construction areas, and to assure performance of the construction in an acceptable manner and time frame.

2. The Contractor shall develop a detailed schedule for all work areas to ensure that construction can be completed within the time allotted. Many of the work items will have to be constructed simultaneously.

3. There may be more than one Contractor working for the Georgetown County Airport performing construction simultaneously. The Contractor(s) will be required to coordinate all work with the ENGINEER to minimize conflicts with other Contractors.

4. The Contractor shall make his own estimate of the difficulties involved in arranging the work to comply with the above requirements and shall not claim any added compensation by reason of delay or increased cost due to these requirements.

5. The schedule shall include, but is not limited to, approximate dates and exact time intervals for performing each work task, subschedules for shop drawing submittals, review times, procurement schedules, and delivery dates.

6. The closure of the Apron areas will require a 72 hour notice for coordination with Airport management and tenants.

PSP-3 CONSTRUCTION SEQUENCE, CONTRACT TIME, AND LIQUIDATED DAMAGES

Total Contract time allowed for completion of all work and associated liquidated damages are shown in Table 1. The liquidated damages shown are minimum amounts that will be assessed. All actual cost associated with the Contractor's failure to complete specified work items within the time allotted, will be passed on to the Contractor. Construction sequencing notes are shown to provide Contractor anticipated construction sequence for all schedules. Detailed sequence of constructions have been developed for all schedules of work and are shown on the plans. These lists have been developed as a general guidance and to help the Contractor to understand the operational needs of the Airport and to minimize closure times associated with each schedule of work.

TABLE 1

Work Phase	Contract Time	Allowable Hours of Operation	Liquidated Damages
Apron Expansion	60 Calendar Days	24 Hours per Day	$1,500.00 per Calendar Day
Removal of Sedimentation and Erosion Control Items	3 Calendar Days	24 Hours per Day	$1,500.00 per Calendar Day

PSP-4 NOTAMS

The Airport Management will issue the necessary NOTAMS to reflect hazardous conditions. It is important that NOTAMS be kept current and reflect the actual conditions with respect to construction situations. Active NOTAMS shall be reviewed periodically and revised to reflect the current conditions.

PSP-5 ADJUSTMENT OF CONTRACT TIME

Contract time for this project may be adjusted only by change order, when requested by the Contractor in writing and approved by the ENGINEER and OWNER, for reasons outside of the Contractor's control, as follows:

a. Strikes, lockouts, or other labor actions which delay delivery of critical materials or performance of critical segments of work.

b. Natural disasters affecting the project site.

c. Excessive rainfall during a calendar month, defined as the total number of days with more than 0.1" of rainfall in excess of the normal number of such days for that calendar month. Normal values shall be taken as published in Table 1 in the USDA Soil Survey for Georgetown County, South Carolina.

d. Extreme low temperatures, defined as the average daily temperatures falling below the normal average daily temperature for that date and below the minimum allowable temperature specified for a critical component of the work, for 15 days or more in a calendar month. Average daily temperature and normal average daily temperature values shall be as reported by the National Weather Services, the Southeast Regional Climate Center, or other reliable source provided by the Contractor and acceptable to the ENGINEER.

e. Suspension of the work as ordered by the ENGINEER or OWNER.

f. Delays in critical work by others.

g. Significant additions to the scope of work.

The Contractor shall bear the burden of proof that a delay has been caused by factors outside his control, shall clearly demonstrate how the delay impacts the critical path of the work as shown on his work schedule as last revised, and shall demonstrate that he has made reasonable and prudent efforts to overcome the impact of the delay on the critical path.

Refer also to Section 80 of the General Conditions.

PSP-6 LAYOUT AND SAFETY PLAN AND PHASING PLAN

Layout and Safety Plan and a Phasing Plan drawings have been prepared and included in the Contract Documents. This project involves construction of an Apron Expansion at the Georgetown County Airport. The Airport is open on a 24-hour, seven day per week basis, and is used by a variety of aircraft types, including jets and helicopters. The runway is served by instrument approach and departure procedures which allow aircraft operations during low visibility and low cloud ceiling conditions. The purpose of the Layout and Safety Plan and the Phasing Plan is to establish requirements intended to assure the safety of both the aircraft and construction operations on the Airport. The Contractor shall be responsible for implementation and compliance with the requirements of the Plans.

Inspection - Frequent inspections may be made by the Airport Management during critical phases of the work to ensure that the Contractor is following the recommended safety procedures.

PSP-7 ACCESS ROADS AND PROJECT ACCESS

Access routes to be used under this Contract shall be those designated and approved by the ENGINEER. In general, the Contractor shall confine his equipment and hauling where practical to existing roads and paved areas on the Airport, as shown in the plans. If existing pavement section or road surface is damaged by the Contractor's hauling operations, it shall be repaired to its original condition at the Contractor's expense. Where existing road does not exist, the Contractor will be required to construct and maintain access road to be utilized for the project. The Contractor will be responsible

for determining the materials and construction effort necessary to complete the access road required for the project. Proposed access roads constructed across turfed areas shall be repaired, scarified, seeded, mulched, and fertilized at the Contractor's expense unless otherwise directed. Metal track vehicles will not be permitted to operate on or across existing pavement without protective matting to prevent marring of the pavement surface.

All costs associated with supplying, constructing, repairing, and maintaining access roads, shall be included in the lump sum price bid for Item 'Mobilization'. Airfield pavements used for project access shall be maintained during project construction. Any damage from construction operations shall be repaired by the Contractor. All costs for maintenance and repairs shall be included in the lump sum price for 'Mobilization.'

PSP-8 AIRPORT ENTRY AND DEPARTURE PROCEDURES

The Contractor shall coordinate ingress-egress requirements with the Airport Management and Resident Project Representative. All open gates to secured airport areas shall be monitored by Contractor's personnel to control access to secured areas and shall be closed and locked at the end of each day's operation. Contractor personnel shall not allow any unauthorized personnel to enter through construction gates. The Contractor shall be responsible for securing and/or locking all gates when not in use and at the end of each day's operations. The Contractor will be required to supply a padlock to interlock with existing padlocks at all gates. The Contractor shall be required to provide copies of all keys to the Resident Project Representative and Airport.

All construction vehicles must be cleared for access by the Airport Management and Resident Project Representative. Personal cars shall be parked in staging area. All vehicles operating in active air operation areas shall be lighted or flagged in accordance with FAA Advisory Circular 150/5370-2G. Copies of the advisory circular will be made available upon request.

PSP-9 EMERGENCY VEHICLE ACCESS

The Contractor shall conduct his operations in such a manner as to assure that such operations do not impede access to any area of the airfield at any time for emergency vehicles. The Contractor shall cooperate fully and immediately with any directive issued by Airport Management relative to emergency access.

PSP-10 NIGHTTIME CONSTRUCTION OPERATIONS

Contractor shall be responsible for providing adequate lighting for all work performed at night. All power for such lighting shall come from portable generators or batteries. Adequate lighting will be as determined by the ENGINEER and should be sufficient light to allow safe and continuous operations for all ongoing construction activities. Light provided should allow all equipment operators to see the work and to allow the ENGINEER to provide adequate observation. Lighting shall be directed away from runway approaches aircraft operating areas and vehicular approach paths.

PSP-11 TEMPORARY AVIATION TYPE LIGHTED BARRICADES AND RUNWAY CLOSURE CROSSES

The Contractor is responsible for supplying, erecting, and maintaining temporary aviation type barricades, conforming to the details on the plans and maintained as outlined in Section 70. The Contractor shall inspect lighted barricades on a daily basis to verify if lights are working properly. The barricades shall be supplied with battery powered steady burning beacons with red lenses. The Contractor shall furnish replacement batteries and bulbs as needed over the course of the project. The Contractor shall furnish sand bags or other suitable means as needed to anchor the barricades in place. Aviation type barricades shall define construction areas and shall be maintained, anchored, and relocated by the Contractor as needed.

All costs associated with supplying, erecting, relocating, and maintaining temporary aviation type barricades shall be included in the lump sum bid price for "Mobilization".

PSP-12 CONSTRUCTION LAYOUT AND CONTROL

The ENGINEER shall furnish control points for horizontal control and bench marks for vertical control as shown on the plans. It shall be the Contractor's responsibility to layout the work from these points and to provide all other measurements to ensure positive horizontal and vertical control of the work. All survey work shall be performed under the supervision of a Registered Land Surveyor or a Registered Professional Engineer, in the State of South Carolina and shall be sealed.

The Contractor will be required to reference all and maintain control points and establish temporary bench marks as required. Contractor will be required to reinstall control points as required during the course of the project.

The Contractor shall verify by survey all control points provided for project as shown on plans. Contractor shall provide survey notes from verification survey to ENGINEER for review prior to beginning work.

As described here and contained in the individual specifications, the following topographic surveys shall be performed by the Contractor as required for documentation of grade control, quantities, and for as constructed drawings.

1. Top of Existing Ground.
2. Areas of Undercut.
3. Top of Final Subgrade.
4. Top of Aggregate Base Course.
5. Top of Proposed Final Ground (Required for Project Record Documents).
6. Top of Proposed Bituminous Surface Course (Required for Project Record Documents).
7. The Contractor shall be required to provide an "As-Built" survey drawing for the project. See Requirements in Section PSP-23, Erosion Control and Sedimentation Control Responsibility and Requirements."

The Contractor shall provide the ENGINEER one (1) set of the survey notes or electronic data files and plotted topographic maps for all surveys. The maps shall be plotted at a scale acceptable to the ENGINEER and shall be based on elevation shots taken at intervals not exceeding 50 foot stations or as required in Section 50-06 of the General Conditions of these Specifications. All sections for all surfaces shall be taken at same interval and location based on an established and referenced centerline stationing. Survey notes shall be in a format that is easily read and contain station, offsets, and elevations based on an established baseline. All costs for performing these surveys shall be included in the price bid for the particular item which it pertains.

The Contractor may utilize the existing survey completed for the OWNER as shown on project drawings. The Contractor shall verify the existing survey prior to utilizing the survey. Utilization of this survey does not relieve the Contractor of meeting the final grade requirements.

The Contractor will be allowed to complete initial layout and topographic surveys prior to the Notice to Proceed for beginning construction. The Contractor will be required to schedule the survey work in advance with the ENGINEER, who shall coordinate with the Airport. The Contractor shall provide a minimum 24 hour advance notice. All survey work shall be completed in accordance with the requirements of the Project Safety Plan, local airfield rules, regulations, and directives from Airfield Management. The Contractor shall provide an airfield radio to monitor airfield operations during surveying operations.

PSP-13 PROTECTION OF CABLES, CONTROLS, AND NAVAIDS

1. The Contractor is hereby informed that there are installed on the Airport airfield lighting, and other electric power cables serving other facilities. Such airfield lighting and other electric cables must be fully protected during the entire construction time. Work under this Contract can be accomplished in the vicinity of these facilities and cables only at approved periods of time, which approval is subject to withdrawal at any time because of changes in the weather, emergency conditions on the existing airfield areas, anticipation of emergency conditions, and for any other reason as determined by the ENGINEER acting under the orders and instructions of the Airport Management. Any instructions to this Contractor to clear any given area, at any time, by the ENGINEER or the Airport Management, shall be immediately executed. Construction work will be commenced in the cleared area only when additional instructions are issued by the proper authorities.

2. Power and control cables leading to and from any airfield facilities will be marked in the field by the Contractor, before any work in the general vicinity is started. Thereafter, through the entire time of this construction, they shall be protected from any possible damage, including crossing with unauthorized equipment, etc. All known facilities and buried cables, and the approximate location thereof in the construction area, are shown on the plans.

3. These special provisions intend to make perfectly clear the need for protection of

airfield lighting and other facilities and cables by this Contractor at all times.

4. The Contractor shall immediately repair, with identical material by skilled workmen, any under ground c ables s erving A irport f acilities w hich ar e dam aged by hi s workmen, eq uipment or w ork. P rior a pproval o f t he ENGINEER or o f t he representative des ignated by t he A irport Management m ust be obt ained for t he materials, w orkmen, t ime o f day or ni ght, m ethod o f r epairs, f or a ny t emporary or permanent r epairs t he C ontractor pr oposes to make to any other A irport facilities and cables damaged by this Contractor.

5. The C ontractor s hall be r equired t o field v erify an d l ocate al l ex isting l ighting and electrical duc ts c rossing t axiways pr ior t o beg inning c onstruction operations. The Contractor shall use extreme care when working in the vicinity of these ducts during pavement r emoval and r oot r aking oper ations. A ny dam age t o ex isting duc t or circuits from constriction operations shall be repaired at the Contractor's expense.

PSP-14 PROTECTION OF EXISTING FACILITIES AND UTILITIES

All existing facilities will be carefully protected by the Contractor. Any facilities damaged by t he C ontractor w ill be r epaired i mmediately and r estored to or iginal c ondition. All runway l ights, t axiway l ights, s igns, and c oncrete and pav ement surfaces to r emain exposed s hall b e pr otected dur ing g rading, pav ing, and s eeding and m ulching operations by s uitable m eans. All ai rfield l ighting s ystems s hall b e op erational at the end of each day's work activities. All damage from Contractor's work operations shall be repaired at no cost to the OWNER.

PSP-15 EXISTING AIRFIELD LIGHTING FIXTURES

The Contractor shall exercise care to avoid damage to existing airfield lighting fixtures. The C ontractor w ill be r esponsible for t he prompt r epair or r eplacement of any s uch fixtures damaged by his operations, including all costs thereof. A field survey for light condition shall be made to document conditions prior to beginning construction.

PSP-16 DUST CONTROL

It i s t he i ntent of these s pecifications that t he C ontractor w ill, by w atering, c hemicals, vegetation, or other means, prevent the occurrence of dust, which will be obj ectionable to t he A irport, or t he residents of t he ar ea, or v iolate ex isting l aws or r egulations, or cause hazards to air traffic. Treatment for dust control shall be completed as required or as directed by the ENGINEER.

PSP-17 DEWATERING

The C ontractor m ay enc ounter w et c onditions during c onstruction. All c ost for dewatering is considered incidental to cost of items of work bid upon.

PSP-18 MATERIAL MANIPULATION

The specifications for Item P-152, Excavation and Embankment and Item P-209, Crushed Aggregate Base Course require that these materials be compacted within specific limits of optimum moisture. The wetting or drying of material, including any necessary manipulation to achieve the specified conditions shall be included in the cost of the item bid upon.

PSP-19 DEBRIS DISPOSAL

The Contractor shall dispose of concrete debris, excess or unsuitable soil, base course aggregates from fine grading operations, and other debris off Airport property in a properly permitted location. All costs for offsite disposal shall be included in the related items bid upon.

PSP-20 STOCKPILE/MATERIAL HANDLING REQUIREMENTS

Location of stockpile areas shall be as shown on the plans or coordinated with ENGINEER and approved by the OWNER. Stockpiles shall be placed well away from the edge of excavations. Stockpiles shall be neat in appearance and should be piled to a maximum height of eight feet. The Contractor will be required to manipulate and push up stockpiled materials as required to minimize stockpile ground areas and maintain piles in a neat and orderly fashion. Temporary silt fence shall be installed at the base of the stockpile on the downstream side of all stockpiles.

PSP-21 TEST STRIP FOR BITUMINOUS PAVEMENT

The Contractor will be required to complete a test strip for each pavement type in accordance with requirements of the Specifications. Locations for the test strip will be coordinated with Airport, ENGINEER, and Contractor. The test strip may be completed at any time after mix designs have been approved and after aggregate base course has been placed, compacted, and has passing Quality Assurance test results. Test strip(s) will be paid for in accordance with the requirements of Section P-401 and P-601 of the Specifications.

PSP-22 CLEAN AIR AND WATER POLLUTION CONTROL REQUIREMENTS

Contractors and subcontractors agree:

a. That any facility to be used in the performance of the contract or subcontract or to benefit from the contract is not listed on the Environmental Protection Agency (EPA) List of Violating Facilities;

b. To comply with all the requirements of Section 114 of the Clean Air Act, as amended, 42 U.S.C. 1857 et seq. and Section 308 of the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in Section

114 and Section 308 of the Acts, respectively, and all other regulations and guidelines issued thereunder;

c. That, as a condition for the award of this contract, the Contractor or subcontractor will notify the awarding official of the receipt of any communication from the EPA indicating that a facility to be used for the performance of or benefit from the contract is under consideration to be listed on the EPA List of Violating Facilities;

d. To include or cause to be included in any construction contract or subcontract which exceeds $100,000 the aforementioned criteria and requirements.

PSP-23 EROSION AND SEDIMENTATION CONTROL RESPONSIBILITY AND REQUIREMENTS

The OWNER will obtain Erosion and Sediment Control Plan approval through SCDHEC and the associated coverage under the South Carolina NPDES General Permit for Stormwater Discharges from Construction Sites and Georgetown County Stormwater. The responsibility for complying with the conditions and requirements of the plan approval and general permit, including but not limited to site inspection and record keeping requirements, are hereby assigned to the Contractor. Site inspections and record keeping shall continue until a good stand of grass has been established at the site and the project has been closed out by SCDHEC. The Contractor will be required to provide an "As-Built" survey/drawing for the project, including data and information below. All costs associated with this item shall be included in the item "Mobilization," and no other compensation will be made. The Contractor shall notify the ENGINEER when the project is ready for closeout, and the ENGINEER will request a closeout inspection by SCDHEC.

Erosion control measure shall be inspected daily during active construction. During times when construction is not on-going, erosion control measures shall be inspected weekly and after each rainfall event measuring ½" or more at a minimum.

Needed repairs/replacement shall be made immediately upon discovery or upon notification by the ENGINEER or Resident Project Representative. Cost of all repairs shall be included in items bid upon.

The Contractor will be required to provide an as-built survey for the project as specified below:

As-Built Survey Requirements:

1. The Contractor shall provide an "As-Built" survey drawing prepared and certified by a Licensed South Carolina Public Land Surveyor.

2. In lieu of contours shown over the entire site, spot elevations will be accepted.

3. Include grades/contours/depths for all ditches and basins. The ditch and basin survey shall show contours, top of bank, and the side slopes of the ditch and

basins.

4. Provide elevations and dimensions of all structures, including pipe and orifice sizes, inverts, and diameters, weir elevations and dimensions, riser elevations and dimensions, top of structure elevations and dimensions, and locations and inverts for all pipes.

5. Provide drainage pipes with size, material, length, slope, and invert elevations.

6. Survey shall include cross section elevations at maximum 50 foot intervals. Cross sections shall include ditch bottom elevations, top of bank elevations, and elevations 10 foot each side of top of bank.

7. Provide an AutoCAD digital DWG and PDF file of the as-built drawing on SC State Plan Coordinate System NAD 83 Datum. Drawing shall be signed and sealed by a Registered CAD Surveyor in the State of South Carolina.

PSP-24 BI-WEEKLY PROGRESS MEETING

Bi-weekly Progress Meetings will be held throughout the project. The purpose of these meetings will be scheduling and coordination of the work between Contractors, review of project progress, and discussion of work items and safety items. The Contractor will be required to have a qualified representative at each of these meetings.

PSP-25 SHOP DRAWINGS

The Contractor is responsible for the preparation of detailed shop drawings and data submittals necessary for the fabrication, erection and construction of all parts of the work in conformity with the Contract Documents. ***Six (6) copies of shop drawings shall be submitted to the ENGINEER in accordance with the procedures herein described.***

"Shop Drawings", wherever referred to, shall be defined as drawings, diagrams, illustrations, schedules, catalog cuts, performance charts, brochures, and other data prepared by the Contractor or any Subcontractor, manufacturer, supplier or distributor, which illustrate how specific portions of the work shall be fabricated and/or installed.

Where it is difficult to provide "shop drawing transparencies such as for "catalog cuts", "brochures" or "photographs", the Contractor shall submit a minimum of six (6) copies of such "cuts", "brochures" or "photographs." Additional copies shall be supplied when required by the ENGINEER.

All submissions of shop drawings, brochures and catalog cuts shall be accompanied by a transmittal letter listing the drawings submitted by number and title.

Each shop drawing shall have listed on it all Contract references, drawing numbers, plus shop drawing numbers on related work by other Subcontractors, if available.

Non-reproducible shop drawings shall be submitted with a cover sheet containing all of the information required on reproducible shop drawings.

Shop drawings shall be complete in every detail, including a location plan relating the work to space identification and column numbers. Materials, gauges, method of fastening, size and spacing of fastenings, connections with other work, cutting, fitting, drilling, and any and all other necessary information as per usual trade practice or as required for any specific purpose must be clearly shown.

The Contractor shall check and approve all shop drawings to make sure that they conform to the drawings, specifications, and other Contract requirements, and correct the drawings found to be inaccurate or otherwise in error. The Contractor shall verify all field dimensions and criteria and shall be responsible for the coordination of work by all Subcontractors.

Shop drawings, at the time of submission, shall bear the signature of the Contractor's checker, date and stamp of approval for submission to the ENGINEER as evidence that such drawings and/or details have been reviewed, checked and approved by the Contractor. Drawings submitted without such stamp of approval will be returned to the Contractor unapproved and will require resubmission. In such event, it will be deemed that the Contractor has not complied with the requirements of this subsection and shall bear the risks of delays as if no drawings or details had been submitted. Both sepia and prints must bear Contractor's stamp.

The Contractor, by approving and submitting shop drawings, represents that he has determined and verified all field measurements and quantities, field construction criteria, materials, catalog numbers, and similar data, and that he has reviewed and coordinated the information in the shop drawings with the requirements of the work and the Contract documents.

At the time of submission, the Contractor shall inform the ENGINEER in writing of any deviation in the shop drawings or samples from the requirements of the Contract documents.

The ENGINEER will review and approve shop drawings and samples with reasonable promptness so as to minimize delay, but only for conformance with the design concept of the Contract and with the information given in the Contract documents. The ENGINEER's approval of a separate item shall not indicate approval of an assembly in which the item functions. The ENGINEER will return the shop drawings transparency/sepia to the Contractor for his use and distribution.

The ENGINEER's approval of shop drawings or samples shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract documents unless the Contractor has informed the ENGINEER in writing of such deviation at the time of submission and the ENGINEER has given written approval to the specific deviation, nor shall the ENGINEER's approval relieve the Contractor from responsibility for errors or omissions in the shop drawings or samples.

No materials shall be ordered and no portion of the work requiring shop drawings or sample submission shall be commenced until the submission has been approved by the ENGINEER. All such materials and portions of work shall be in accordance with approved shop drawings and samples.

The Contractor shall, when requested by the ENGINEER in writing, submit additional shop drawings to those required by the technical specifications or special provisions.

The Contractor shall deliver to the ENGINEER three (3) complete sets of all maintenance manuals, parts list, operating instructions and other necessary documents required for all installed materials, equipment, or machinery. Such documents shall be furnished concurrently with the installations of the respective materials, equipment or machinery. All shop drawings submitted by the Contractor and approved by the ENGINEER become part of the Contract documents.

PSP-26 TESTING - GENERAL

All quality acceptance testing required by the Contract specifications for acceptance of the work (except as noted in the individual specification sections and as explained below) will be initiated by the ENGINEER with the full cooperation of the Contractor. Testing will be scheduled after the Contractor confirms to the ENGINEER that an area is ready for testing. An independent testing laboratory will be used on the project, which laboratory technicians will be under the direction of the Resident Project Representative. There is no cost to the Contractor for testing under this heading (except as noted in the individual specifications section and as explained below). **NOTE:** ***The Contractor will be required to pay for all retests of failing quality acceptance tests taken throughout the project which are performed by the testing laboratory after the ENGINEER has been notified by the Contractor that the item is ready for testing.*** Testing to be completed during construction is indicated for each bid item in the individual sections.

The Contractor will be required, at his expense, to furnish proposed job mix formulas for the bituminous pavements (P-401 and P-601) and structural concrete to the ENGINEER for his approval at least five (5) days prior to the proposed date for use. The Contractor may be requested to submit the necessary materials to the designated laboratory for verification and **will be** required to furnish all required test data, graphs, etc., as required and specified in the item specifications. The cost for the materials and delivery of these items shall be included in the unit costs for the applicable items under this Contract.

The Contractor will also be required to furnish a nuclear density gauge for use on this project during paving. This gauge shall be operated by a trained laboratory technician to provide for continuous monitoring of paving operations and their conformance with the specifications. The cost of furnishing the nuclear density gauge and trained laboratory technician shall be borne by the Contractor. The nuclear gauge is to be used by the Contractor as an aid in construction operations; the OWNER will not use nuclear

gauge test results to determine acceptance and/or rejection of the bituminous pavement.

PSP-27 COPIES OF CONSTRUCTION DOCUMENTS

ENGINEER will furnish at no charge to Contractor five (5) complete sets of plans and specifications including cross-sections for Contractor's use during construction. One set shall be maintained as the Project Record Documents. Additional sets of plans and specifications or individual sheets of plans will be furnished to Contractor at the cost of reproduction and postage.

PSP-28 AS CONSTRUCTED DRAWINGS

The Contractor will be required to maintain a set of "as constructed plans" on the project at all times, noting any changes, deviations, etc., with the responsibility to furnish the OWNER, at the completion of the project, a set of as constructed plans. These "as constructed plans" shall be delivered to the ENGINEER prior to final acceptance and payment.

PSP-29 PAY ESTIMATE DOCUMENTATION

The Contractor's attention is directed to various documentation requirements of the project. All documentation must be current as of the date of each partial pay estimate. Delinquent paperwork may result in delays in processing pay estimates. Documentation requirements include, but are not limited to, Certified Pay Rolls (Contractor and Subcontractors), DBE and Subcontractor Payment Reports (see Appendix 'D'), Work Schedule updates, and materials on-hand documentation (Section 90).

PSP-30 FINAL CERTIFICATIONS AND AFFIDAVIT

Prior to the release of final payment, the Contractor shall provide the following certifications and affidavits.

1. Consent of Surety Company to Final Payment.
2. Affidavit of Payment of Debt and Claims.
3. Contractor's Affidavit of Release of Liens.

A sample of the documents is contained in Appendix 'F', Forms, of the specifications.

PSP-31 WARRANTY

A one-year warranty is applicable for all materials and workmanship for the completed project. The warranty includes the establishment and maintenance of a good stand of grass of uniform color and density as required in the specifications.

PSP-32 CONTRACTS AND BONDS

The Contractor's attention is directed to Appendix 'D' which includes the form of the construction contract and performance and payment bonds. The contract form contains numerous important contract provisions including insurance requirements.

PSP-33 ELECTRONIC COPY OF BID FORM

An electronic copy of the bid form will be made available to Contractor's based on a written request. The request shall be made to Talbert & Bright, by e-mail (asmith@tbiilm.com) or by fax at (910) 762-6281, Attention: Al Smith. The bid form spreadsheet will be provided as a Microsoft Excel file without formulas as a courtesy to prospective bidders. The Bidder shall be responsible for printing the completed bid form and including with the bid package submitted. The Bidder assumes any and all risk associated with the use of electronic file in preparing a bid. The spreadsheet will be free of cell formulas. The Bidder is responsible for the accuracy of modifications, cell formulas, links, etc., which the Bidder adds to the spreadsheet. No warranty is made or implied as to suitably, compatibility or accuracy of the file as sent, received, or modified; the Bidder shall be solely responsible for verifying its accuracy relative to hard copy bid forms included in the Project Specifications and in Addenda, and for any computations which may be performed within the spreadsheet, and for printing the spreadsheet and including with the bid documents. The Bidder shall be responsible for making any and all subsequent bid form changes, which may be announced by Addendum.

PSP-34 WATER FOR CONSTRUCTION OPERATIONS

Water for the construction operations for this project shall be paid for by the Contractor. The Contractor will be required to obtain a permit and meter from the Georgetown County Water and Sewer District. The meter shall be installed at a hydrant located inside the fenced airport area. All water utilized for the project shall be obtained from the metered hydrant.

For permit required and meter, contact:

Tommy Kennedy
Georgetown County Water and Sewer District
PO Box 2730
456 Clearwater Drive
Pawley's Island, SC 29585
(843) 546-8408

The Contractor shall be responsible for any cost required for obtaining the permit and meter, and all water required for the project.

The Contractor shall use care when obtaining water for the project from the hydrant. The Contractor will be required to open the hydrant slowly to minimize the pressure

drop in the system.

END OF PROJECT SPECIAL PROVISIONS

TECHNICAL SPECIFICATIONS

ITEM P-101

SURFACE PREPARATION

DESCRIPTION

101-1.1 This item shall consist of removal of existing pavement, milling of existing pavement, and other miscellaneous items. The work shall be accomplished in accordance with these specifications and the applicable drawings.

EQUIPMENT

101-2.1 All equipment shall be specified here and in the following paragraphs or approved by the ENGINEER. The equipment shall not cause damage to the pavement to remain in place.

CONSTRUCTION

101-3.1 **Cold Milling.** Milling shall be performed with a power-operated milling machine or grinder, capable of producing a finished surface that provides a good bond to the new overlay. The milling machine or grinder shall operate without tearing or gouging the under laying surface. The milling machine or grinder shall be equipped with automatic grade and slope controls. All millings shall be removed and disposed off Airport property, unless otherwise specified. If the Contractor mills or grinds deeper or wider than the plans specify, the Contractor shall replace the material that was removed with new material at no additional cost to the OWNER.

a. Transitions. The milling machine shall be capable of cutting a vertical edge without chipping or spalling the edges of the remaining pavement and it shall have a positive method of controlling the depth of cut. The Contractor shall layout the area to be milled with a straightedge in increments of 1 foot widths. Any excessive area that is milled because the Contractor doesn't have the appropriate milling machine, or areas that are damaged because of his negligence, shall not be included in the measurement for payment.

b. Clean-Up. The Contractor shall sweep the milled surface immediately after the milling until all residual aggregate and fines are removed from the pavement surface. Prior to paving, the Contractor shall wet down the milled pavement and thoroughly sweep and/or blow the surface to remove any remaining aggregate or fines.

101-3.2 **Maintenance**. The Contractor shall perform all maintenance work necessary to keep the pavement in a satisfactory condition until the full section is complete and accepted by the ENGINEER. The surface shall be kept clean and free from

foreign material. The pavement shall be properly drained at all times. If cleaning is necessary or if the pavement becomes disturbed, any work repairs necessary shall be performed at the Contractor's expense.

METHOD OF MEASUREMENT

101-4.1 Milling of Existing Pavement (Transition Area). The unit of measure for cold milling shall be per square yard. The location of the cold milling shall be determined and agreed to by the ENGINEER and the Contractor prior to beginning the work. If the initial cut is not sufficient and surface correction is required, the Contractor shall re-mill the area and will be paid only once for the total depth of milling.

BASIS OF PAYMENT

101-5.1 Payment. Payment shall be made at contract unit price for the unit of measurement as specified above. This price shall be full compensation for furnishing all materials and for all preparation, hauling, and placing of the material and for all labor, equipment, tools, and incidentals necessary to complete this item.

Item P 101-5.1	Milling of Existing Pavement (Transition Area) - per Square Yard

END OF ITEM P-101

ITEM P-152

EXCAVATION, SUBGRADE, AND EMBANKMENT

DESCRIPTION

152-1.1 This item covers excavation, disposal, placement, and compaction of all materials within the limits of the work required to construct safety areas, aprons, and intermediate areas as well as other areas for drainage, building construction, parking, or other purposes in accordance with these specifications and in conformity to the dimensions and typical sections shown on the plans.

152-1.2 Classification. All material excavated shall be classified as defined below:

a. Unclassified Excavation. Unclassified excavation shall consist of the excavation and disposal of all material, regardless of its nature **which is not otherwise classified and paid for under one of the following items**.

b. Undercut Excavation. Undercut excavation shall consist of the removal and disposal of deposits or mixtures of soils and organic matter not suitable for foundation material. Undercut shall include materials that will decay or produce subsidence in the embankment. It may consist of decaying stumps, roots, logs, humus, or other material not satisfactory for incorporation in the embankment.

c. Borrow Embankment. Borrow embankment shall consist of approved material required for the construction of embankments or for other portions of the work in excess of the quantity of usable material available from required excavations. Borrow material shall be obtained from areas outside the airport boundaries. The borrow embankment material shall meet the requirements of SM, SP, or SC and exhibit a soaked CBR of 15.

152-1.3 Unsuitable Excavation. Any material containing vegetable or organic matter, such as muck, peat, organic silt, or sod shall be considered unsuitable for use in embankment construction. Material, suitable for topsoil may be used on the embankment slope when approved by the ENGINEER.

CONSTRUCTION METHODS

152-2.1 General. Before beginning excavation, grading, and embankment operations in any area, the area shall be completely cleared.

The suitability of material to be placed in embankments shall be subject to approval by the ENGINEER. All unsuitable material shall be disposed of in waste areas shown on the plans. All waste areas shall be graded to allow

positive drainage of the area and of adjacent areas. The surface elevation of waste areas shall not extend above the surface elevation of adjacent usable areas of the airport, unless specified on the plans or approved by the ENGINEER.

When the Contractor's excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued and the ENGINEER notified per subsection 70-20. At the direction of the ENGINEER, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and allow for their removal. Such excavation will be paid for as extra work.

Those areas outside of the limits of the pavement areas where the top layer of soil material has become compacted by hauling or other Contractor activities shall be scarified and disked to a depth of 4 inches, to loosen and pulverize the soil.

If it is necessary to interrupt existing surface drainage, sewers or underdrainage, conduits, utilities, or similar underground structures, the Contractor shall be responsible for and shall take all necessary precautions to preserve them or provide temporary services. When such facilities are encountered, the Contractor shall notify the ENGINEER, who shall arrange for their removal if necessary. The Contractor, at his or her expense, shall satisfactorily repair or pay the cost of all damage to such facilities or structures that may result from any of the Contractor's operations during the period of the contract.

152-2.2 Excavation. No excavation shall be started until the work has been staked out by the Contractor and the ENGINEER has obtained from the Contractor, the survey notes of the elevations and measurements of the ground surface. All areas to be excavated shall be stripped of vegetation and topsoil. Topsoil shall be stockpiled for future use in areas designated on the plans or by the ENGINEER. All suitable excavated material shall be used in the formation of embankment, subgrade, or other purposes shown on the plans. All unsuitable material shall be disposed of off Airport property.

When the volume of the excavation exceeds that required to construct the embankments to the grades indicated, the excess shall be disposed of off Airport property and used to grade the areas of ultimate development as directed by the ENGINEER. When the volume of excavation is not sufficient for constructing the embankments to the grades indicated, the deficiency shall be obtained from borrow areas located off Airport property.

The grade shall be maintained so that the surface is well drained at all times. When necessary, temporary drains and drainage ditches shall be installed to intercept or divert surface water that may affect the work.

a. **Selective Grading.** When selective grading is indicated on the plans, the more suitable material designated by the ENGINEER shall be used in constructing the embankment or in capping the pavement subgrade. If, at the time of excavation, it is not possible to place this material in its final location, it shall be stockpiled in approved areas so that it can be measured for payment as specified in paragraph 152-3.3.

b. **Undercutting.** Rock, shale, hardpan, loose rock, boulders, or other material unsatisfactory for safety areas, subgrades, roads, shoulders, or any areas intended for turf shall be excavated to a minimum depth of 12 inches below the subgrade or to the depth specified by the ENGINEER. Muck, peat, matted roots, or other yielding material, unsatisfactory for subgrade foundation, shall be removed to the depth specified. Unsuitable materials shall be disposed of off the airport. The cost is incidental to this item. This excavated material shall be paid for at the contract unit price per cubic yard for undercut excavation. The excavated area shall be backfilled with suitable material obtained from the grading operations or borrow areas and compacted to specified densities. The necessary backfill will constitute a part of the embankment. Where rock cuts are made, backfill with select material. Any pockets created in the rock surface shall be drained in accordance with the details shown on the plans.

c. **Overbreak.** Overbreak, including slides, is that portion of any material displaced or loosened beyond the finished work as planned or authorized by the ENGINEER. All overbreak shall be graded or removed by the Contractor and disposed of as directed by the ENGINEER. The ENGINEER shall determine if the displacement of such material was unavoidable and his or her decision shall be final. Payment will not be made for the removal and disposal of overbreak that the ENGINEER determines as avoidable. Unavoidable overbreak will be classified as “Unclassified Excavation.”

d. **Removal of Utilities.** The removal of existing structures and utilities required to permit the orderly progress of work will be accomplished by someone other than the Contractor; for example, the utility unless otherwise shown on the plans. All existing foundations shall be excavated at least 2 feet below the top of subgrade or as indicated on the plans, and the material disposed of as directed by the ENGINEER. All foundations thus excavated shall be backfilled with suitable material and compacted as specified.

e. **Compaction Requirements.** The subgrade under areas to be paved shall be compacted to a depth of 17 inches and to a density of not less than 100 percent of the maximum density as determined by ASTM D1557. The material to be compacted shall be within ±2% of optimum moisture content before being rolled to obtain the prescribed compaction (except for expansive soils).

The in-place field density shall be determined in accordance with ASTM D1556 or ASTM D6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938. Stones or rock fragments larger than 4 inches in their greatest dimension will not be permitted in the top 6 inches of the subgrade. The finished grading operations, conforming to the typical cross-section, shall be completed and maintained at least 1,000 feet ahead of the paving operations or as directed by the ENGINEER.

All loose or protruding rocks on the back slopes of cuts shall be pried loose or otherwise removed to the slope finished grade line. All cut-and-fill slopes shall be uniformly dressed to the slope, cross-section, and alignment shown on the plans or as directed by the ENGINEER.

Blasting shall not be allowed.

f. Proof Rolling. After compaction is completed, the subgrade area shall be proof rolled with a 20 ton Tandem Axle Dual Wheel Dump Truck loaded to the legal limit with tires inflated to 80/100/150 psi in the presence of the ENGINEER. Apply a minimum of 2 coverages, or as specified by the ENGINEER, to all paved areas. A coverage is defined as the application of one tire print over the designated area. Soft areas of subgrade that deflect more than 1 inch or show permanent deformation greater than 1 inch shall be removed and replaced with suitable material or reworked to conform to the moisture content and compaction requirements in accordance with these specifications.

152-2.3 Borrow Embankment. Borrow sources are outside the boundaries of the airport property. It shall be the Contractor's responsibility to locate and obtain the borrow sources, subject to the approval of the ENGINEER. The Contractor shall notify the ENGINEER at least 15 days prior to beginning the excavation so necessary measurements and tests can be made. All borrow pits shall be opened up to expose the various strata of acceptable material to allow obtaining a uniform product. All unsuitable material shall be disposed of by the Contractor. Borrow pits shall be excavated to regular lines to permit accurate measurements, and they shall be drained and left in a neat, presentable condition with all slopes dressed uniformly.

152-2.4 Drainage Excavation. Deleted.

152-2.5 Preparation of Embankment Area. Where an embankment is to be constructed to a height of 4 feet or less, all sod and vegetative matter shall be removed from the surface upon which the embankment is to be placed. The cleared surface shall be broken up by plowing or scarifying to a minimum depth of 6 inches and shall then be compacted as indicated in paragraph 152-2.6.

When the height of fill is greater than 4 feet, sod not required to be removed shall be thoroughly disked and recompacted to the density of the surrounding ground before construction of embankment.

Sloped surfaces steeper than one (1) vertical to four (4) horizontal shall be plowed, stepped, benched, or broken up so that the fill material will bond with the existing material. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 12 inches and compacted as specified for the adjacent fill.

No direct payment shall be made for the work performed under this section. The necessary clearing and grubbing and the quantity of excavation removed will be paid for under the respective items of work.

152-2.6 Formation of Embankments. Embankments shall be formed in successive horizontal layers of not more than 8 inches in loose depth for the full width of the cross-section, unless otherwise approved by the ENGINEER.

The layers shall be placed, to produce a soil structure as shown on the typical cross-section or as directed by the ENGINEER. Materials such as brush, hedge, roots, stumps, grass and other organic matter, shall not be incorporated or buried in the embankment.

Earthwork operations shall be suspended at any time when satisfactory results cannot be obtained because of rain, freezing, or other unsatisfactory weather conditions in the field. Frozen material shall not be placed in the embankment nor shall embankment be placed upon frozen material. Material shall not be placed on surfaces that are muddy, frozen, or contain frost. The Contractor shall drag, blade, or slope the embankment to provide surface drainage at all times.

The material in each layer shall be within ±2% of optimum moisture content before rolling to obtain the prescribed compaction. To achieve a uniform moisture content throughout the layer, the material shall be moistened or aerated as necessary. Samples of all embankment materials for testing, both before and after placement and compaction, will be taken for each 1,000 square yards of material placed per layer. Based on these tests, the Contractor shall make the necessary corrections and adjustments in methods, materials or moisture content to achieve the specified embankment density.

Rolling operations shall be continued until the embankment is compacted to not less than 95% of maximum density for noncohesive soils, and 90% of maximum density for cohesive soils as determined by ASTM D1557. Under all areas to be paved, the embankments shall be compacted to a depth of 17 inches and to a density of not less than 100 percent of the maximum density as determined by ASTM D1557.

On all areas outside of the pavement areas, no compaction will be required on the top 4 inches.

The in-place field density shall be determined in accordance with ASTM D1556 or ASTM 6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D 6938. The ENGINEER's laboratory shall perform all density tests.

Compaction areas shall be kept separate, and no layer shall be covered by another layer until the proper density is obtained.

During construction of the embankment, the Contractor shall route all construction equipment evenly over the entire width of the embankment as each layer is placed. Layer placement shall begin in the deepest portion of the embankment fill. As placement progresses, the layers shall be constructed approximately parallel to the finished pavement grade line.

When rock and other embankment material are excavated at approximately the same time, the rock shall be incorporated into the outer portion of the embankment and the other material shall be incorporated under the future paved areas. Stones or fragmentary rock larger than 4 inches in their greatest dimensions will not be allowed in the top 6 inches of the subgrade. Rockfill shall be brought up in layers as specified or as directed by the ENGINEER and the finer material shall be used to fill the voids with forming a dense, compact mass. Rock or boulders shall not be disposed of outside the excavation or embankment areas, except at places and in the manner designated on the plans or by the ENGINEER.

When the excavated material consists predominantly of rock fragments of such size that the material cannot be placed in layers of the prescribed thickness without crushing, pulverizing or further breaking down the pieces, such material may be placed in the embankment as directed in layers not exceeding 2 feet in thickness. Each layer shall be leveled and smoothed with suitable equipment by distribution of spalls and finer fragments of rock. The layer shall not be constructed above an elevation 4 feet below the finished subgrade.

Payment for compacted borrow embankment will be made under borrow embankment. All costs incidental to placing in layers, compacting, discing, watering, mixing, sloping, and other operations necessary for construction of embankments will be included in the contract price for Borrow Embankment.

152-2.7 Finishing and Protection of Subgrade. After the subgrade is substantially complete, the Contractor shall remove any soft or other unstable material over the full width of the subgrade that will not compact properly. All low areas, holes

or depressions in the subgrade shall be brought to grade with suitable select material. Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade shaped to the lines and grades shown on the plans.

Grading of the subgrade shall be performed so that it will drain readily. The Contractor shall protect the subgrade from damage and limit hauling over the finished subgrade to only traffic essential for construction purposes. All ruts or rough places that develop in the completed subgrade shall be graded and recompacted.

No subbase, base, or surface course shall be placed on the subgrade until the subgrade has been approved by the ENGINEER.

152-2.8 Haul. All hauling will be considered a necessary and incidental part of the work. The Contractor shall include the cost in the contract unit price for the pay of items of work involved. No payment will be made separately or directly for hauling on any part of the work.

152-2.9 Tolerances. In those areas upon which a subbase or base course is to be placed, the top of the subgrade shall be of such smoothness that, when tested with a 12-foot straightedge applied parallel and at right angles to the centerline, it shall not show any deviation in excess of 1/2 inch, or shall not be more than 0.05 feet from true grade as established by grade hubs. Any deviation in excess of these amounts shall be corrected by loosening, adding, or removing materials; reshaping; and recompacting.

On safety areas, intermediate and other designated areas, the surface shall be of such smoothness that it will not vary more than 0.10 feet from true grade as established by grade hubs. Any deviation in excess of this amount shall be corrected by loosening, adding or removing materials, and reshaping.

152-2.10 Topsoil. When topsoil is specified or required as shown on the plans or under Item T-905, it shall be salvaged from stripping or other grading operations. The topsoil shall meet the requirements of Item T-905. If, at the time of excavation or stripping, the topsoil cannot be placed in its final section of finished construction, the material shall be stockpiled at approved locations. Stockpiles shall not be placed within 200 feet of runway pavement or 100 feet of taxiway pavement and shall not be placed on areas that subsequently will require any excavation or embankment fill. If, in the judgment of the ENGINEER, it is practical to place the salvaged topsoil at the time of excavation or stripping, the material shall be placed in its final position without stockpiling or further rehandling.

Upon completion of grading operations, stockpiled topsoil shall be handled and placed as directed, or as required in Item T-905.

No direct payment will be made for topsoil under Item P-152. The quantity removed and placed directly or stockpiled shall be paid for at the contract unit price per cubic yard for "Unclassified Excavation."

When stockpiling of topsoil and later rehandling of such material is directed by the ENGINEER, the material so rehandled shall be paid for at the contract unit price per cubic yard for "Unclassified Excavation".

METHOD OF MEASUREMENT

152-3.1 The quantity of unclassified excavation to be paid for shall be the number of cubic yards measured in its original position. Measurement shall not include the quantity of materials excavated without authorization beyond normal slope lines, or the quantity of material used for purposes other than those directed.

152-3.2 Borrow Embankment shall be paid for on the basis of the number of cubic yards measured in its final position on-site.

152-3.3 Stockpiled material utilized for the project shall be paid for on the basis of the number of cubic yards measured in the stockpiled position as "Unclassified Excavation". Excess soil shall be disposed off Airport property. No measurement will be made for excess soil to be disposed of off Airport property.

152-3.4 For payment specified by the cubic yard, measurement for all excavation or embankment shall be computed by the average end area method. The end area is that bound by the original ground line established by field cross-sections and the final theoretical pay line established by excavation or embankment cross-sections shown on the plans, subject to verification by the ENGINEER. After completion of all excavation or embankment operations and prior to the placing of base or subbase material, the final excavation or embankment may be verified by the ENGINEER by means of field cross-sections taken randomly at intervals not exceeding 500 linear feet.

BASIS OF PAYMENT

152-4.1 "Unclassified Excavation" payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

152-4.2 "Undercut Excavation" payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

152-4.3 "Borrow Embankment" payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials,

labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-152-4.1	Unclassified Excavation - per Cubic Yard
Item P-152-4.2	Undercut Excavation - per Cubic Yard
Item P-152-4.3	Borrow Embankment - per Cubic Yard

TESTING REQUIREMENTS

ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3)
ASTM D6938	Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

END OF ITEM P-152

ITEM P-156

TEMPORARY AIR AND WATER POLLUTION, SOIL EROSION, AND SILTATION CONTROL

DESCRIPTION

156-1.1 This item shall consist of temporary control measures as shown on the plans or as ordered by the ENGINEER during the life of a contract to control water pollution, soil erosion, and siltation through the use of silt fences, berms, dikes, dams, sediment basins, fiber mats, gravel, mulches, grasses, slope drains, and other erosion control devices or methods.

The temporary erosion control measures contained herein shall be coordinated with the permanent erosion control measures specified as part of this contract to the extent practical to assure economical, effective, and continuous erosion control throughout the construction period.

Temporary control may include work outside the construction limits such as borrow pit operations, equipment and material storage sites, waste areas, and temporary plant sites.

Temporary control measures shall be designed, installed and maintained to minimize the creation of wildlife attractants that have the potential to attract hazardous wildlife on or near public-use airports.

MATERIALS

156-2.1 **Grass.** Grass that will not compete with the grasses sown later for permanent cover per Item T-901 shall be a quick-growing species (such as ryegrass, Italian ryegrass, or cereal grasses) suitable to the area providing a temporary cover. Selected grass species shall not create a wildlife attractant. See Item T-901, Seeding.

156-2.2 **Mulches.** Mulches may be hay, straw, fiber mats, netting, bark, wood chips, or other suitable material reasonably clean and free of noxious weeds and deleterious materials per Item T-908, Mulching. Mulches shall not create a wildlife attractant.

156-2.3 **Fertilizer.** Fertilizer shall be a standard commercial grade and shall conform to all Federal and state regulations and to the standards of the Association of Official Agricultural Chemists. See Item T-901, Seeding.

156-2.4 **Silt Fence.** The silt fence shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a

minimum of six months of expected usable construction life. Silt fence shall meet the requirements of ASTM D6461.

156-2.5 Other. All other materials shall meet commercial grade standards and shall be approved by the ENGINEER before being incorporated into the project.

CONSTRUCTION REQUIREMENTS

156-3.1 General. In the event of conflict between these requirements and pollution control laws, rules, or regulations of other Federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply.

The ENGINEER shall be responsible for assuring compliance to the extent that construction practices, construction operations, and construction work are involved.

156-3.2 Schedule. Prior to the start of construction, the Contractor shall submit schedules for accomplishment of temporary and permanent erosion control work for grading; construction; paving; and structures at watercourses. The Contractor shall also submit a proposed method of erosion and dust control on haul roads and borrow pits and a plan for disposal of waste materials. Work shall not be started until the erosion control schedules and methods of operation for the applicable construction have been accepted by the ENGINEER.

156-3.3 Construction Details. The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practicable time as outlined in the accepted schedule. Except where future construction operations will damage slopes, the Contractor shall perform the permanent seeding and mulching and other specified slope protection work in stages, as soon as substantial areas of exposed slopes can be made available. Temporary erosion and pollution control measures will be used to correct conditions that develop during construction that were not foreseen during the design stage; that are needed prior to installation of permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

Where erosion may be a problem, grading operations shall be performed so that and permanent erosion control features can follow immediately if project conditions permit; otherwise, temporary erosion control measures may be required.

The ENGINEER shall limit the area of excavation, borrow, and embankment operations in progress, commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such

permanent control measures current with the accepted schedule. If seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified as directed by the ENGINEER.

The Contractor shall provide immediate permanent or temporary pollution control measures to minimize contamination of adjacent streams or other watercourses, lakes, ponds, or other areas of water impoundment as directed by the ENGINEER. If temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or directed by the ENGINEER, the work shall be performed by the Contractor and the cost shall be incidental to this item.

The ENGINEER may increase or decrease the area of erodible earth material that can be exposed at any time based on an analysis of project conditions.

The erosion control features installed by the Contractor shall be acceptably maintained by the Contractor during the construction period.

Whenever construction equipment must cross watercourses at frequent intervals, temporary structures shall be provided.

Pollutants such as fuels, lubricants, bitumen, raw sewage, wash water from concrete mixing operations, and other harmful materials shall not be discharged into any waterways, impoundments, or into natural or manmade channels.

156-3.4 Installation, Maintenance and Removal of Silt Fences. Silt fences shall extend a minimum of 12 inches into the ground and a maximum of 24 inches above the ground surface. Posts shall be set no more than 6 feet on center. Filter fabric shall be cut from a continuous roll to the length required minimizing joints where possible. When joints are necessary, the fabric shall be spliced at a support post with a minimum 12-inch overlap and securely sealed. A trench shall be excavated approximately 6 inches deep by 6 inches wide on the upslope side of the silt fence. The trench shall be backfilled and the soil compacted over the silt fence fabric. The Contractor shall remove and dispose of silt that accumulates during construction and prior to establishment of permanent erosion control. The fence shall be maintained in good working condition until permanent erosion control is established. Silt fence shall be removed upon approval of the ENGINEER.

METHOD OF MEASUREMENT

156-4.1 Temporary erosion and pollution control work required will be performed as scheduled or directed by the ENGINEER. Completed and accepted work will

be measured as follows:

a. Temporary rock sediment dike (complete and in place) will be measured on a per each basis.

b. Temporary seeding and mulching will be measured by the acre.

c. Temporary silt fence will be measured by the linear foot.

d. Temporary sediment bags, including installation and removal, will be measured on a per each basis.

e. Concrete washout area will be measured on a per each basis.

f. Temporary construction entrance will be measured on a per each basis.

g. Excelsior matting will be measured by the square yard.

156-4.2 Control work performed for protection of construction areas outside the construction limits, such as borrow and waste areas, haul roads, equipment and material storage sites, and temporary plant sites, will not be measured and paid for directly but shall be considered as a subsidiary obligation of the Contractor.

BASIS OF PAYMENT

156-5.1 Accepted quantities of temporary water pollution, soil erosion, and siltation control work ordered by the ENGINEER and measured as provided in paragraph 156-4.1 will be paid for under:

Item P-156-5.1	Temporary Rock Sediment Dike (Complete and In Place) - per Each
Item P-156-5.2	Temporary Seeding and Mulching - per Acre
Item P-156-5.3	Temporary Silt Fence - per Linear Foot
Item P-156-5.4	Temporary Sediment Bags, Including Installation and Removal - per Each
Item P-156-5.5	Concrete Washout Area - per Each
Item P-156-5.6	Temporary Construction Entrance - per Each
Item P-156-5.7	Excelsior Matting - per Square Yard

Where other directed work falls within the specifications for a work item that has a contract price, the units of work shall be measured and paid for at the contract unit price bid for the various items.

Temporary control features not covered by contract items that are ordered by the ENGINEER will be paid for in accordance with Section 90-05 Payment for Extra work.

MATERIAL REQUIREMENTS

ASTM D6461	Standard Specification for Silt Fence Materials
AC 150/5200-33B	Hazardous Wildlife Attractants

END OF ITEM P-156

ITEM P-209

CRUSHED AGGREGATE BASE COURSE

DESCRIPTION

209-1.1 This item consists of a base course composed of crushed aggregate base constructed on a prepared course in accordance with these specifications and in conformity to the dimensions and typical cross-sections shown on the plans.

MATERIALS

209-2.1 Crushed Aggregate Base. Crushed aggregate shall consist of clean, sound, durable particles of crushed stone, or crushed gravel and shall be free from coatings of clay, silt, or ganic material, or other objectionable materials. Aggregates shall contain no clay lumps or balls. Fine aggregate passing the No. 4 sieve shall consist of fines from the coarse aggregate crushing operation. If necessary, fine aggregate may be added to produce the correct gradation. The fine aggregate shall be produced by crushing stone, gravel that meet the coarse aggregate requirements for wear and soundness.

The coarse aggregate portion, defined as the material retained on the No. 4 sieve, shall not have a loss of greater than 45% when tested per ASTM C131. The sodium sulfate soundness loss shall not exceed 12%, or the magnesium sulfate soundness loss shall not exceed 18%, after five cycles, when tested in accordance with ASTM C88. The aggregate shall contain no more than 15%, by weight, of flat, elongated, or flat and elongated particles per ASTM D4791. A flat particle is one having a ratio of width to thickness greater than 3; an elongated particle is one having a ratio of length to width greater than three (3). The aggregate shall have at least 90% by weight of particles with at least two fractured faces and 100% with at least one fractured face per ASTM D5821. The area of each face shall be equal to at least 75% of the smallest mid-sectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces.

a. Sampling and Testing for Initial Aggregate Base Requirements. Samples shall be taken by the Contractor in the presence of the ENGINEER. Material shall meet the requirements in paragraph 209-2.1 and 209-2.2. This sampling and testing will be the basis for approval of the aggregate base quality requirements.

209-2.2 Gradation Requirements. The gradation of the aggregate base material shall meet the requirements of the gradation given in the following table when tested per ASTM C117 and ASTM C136. The gradation shall be well graded from coarse to fine as defined by ASTM D2487 and shall not vary from the lower

limit on one sieve to the high limit on an adjacent sieve or vice versa. The fraction of material passing the No. 200 sieve shall not exceed one-half the fraction passing the No. 40 sieve.

Requirements For Gradation Of Aggregate Base

Sieve Size	Design Range Percentage by Weight	Job Control Grading Band Tolerances for Contractor's Final Gradation Percent
2 inch	100	0
1-1/2 inch	95-100	±5
1 inch	70-95	±8
3/4 inch	55-85	±8
No. 4	30-60	±8
No. 40	10-30	±5
No. 200	0-8	±3

The "Job Control Grading Band Tolerances for Contractor's Final Gradation" in the table shall be applied to "Contractor's Final Gradation" to establish a job control grading band. The full tolerance still applies if application of the tolerances results in a job control grading band outside the design range.

a. Sampling and testing for gradation. Gradation tests shall be performed by the ENGINEER per ASTM C136 and sieve analysis on material passing the No. 200 sieve per ASTM C112. The ENGINEER shall take at least two aggregate base samples per lot to check the final gradation. Sampling shall be per ASTM D75. The lot will be consistent with the lot size used for density. The samples shall be taken from the in-place, un-compacted material in the presence of the ENGINEER. Sampling points and intervals will be designated by the ENGINEER.

CONSTRUCTION METHODS

209-3.1 Preparing Underlying Subgrade and/or Subbase. The underlying subgrade and/or subbase shall be checked and accepted by the ENGINEER before base course placing and spreading operations begin. Re-proof rolling of the subgrade or proof rolling of the subbase in accordance with P-152, at the Contractor's expense, may be required by the ENGINEER if the Contractor fails to ensure proper drainage or protect the subgrade and/or subbase. Any ruts or soft, yielding areas due to improper drainage conditions, hauling, or any other cause, shall be corrected before the base course is placed. To ensure proper drainage, the spreading of the base shall begin along the centerline of the pavement on a crowned section or on the high side of the pavement with a one-way slope.

209-3.2 Production. The aggregate shall be uniformly blended and, when at a satisfactory moisture content per paragraph 209-3.4, the approved material may be transported directly to the spreading equipment.

209-3.3 Placing. The aggregate base material shall be placed on the prepared underlying subgrade and/or subbase and compacted in layers to the thickness shown on the plans. Work shall progress without interruption. The material shall be deposited and spread in lanes in a uniform layer without segregation to such loose depth that, when compacted, the layer shall have the specified thickness. The aggregate base course shall be constructed in layers of uniform thickness of not less than 3 inches nor more than 7 inches of compacted thickness. The aggregate as spread shall be of uniform grading with no pockets of fine or coarse materials. The aggregate, unless otherwise permitted by the ENGINEER, shall not be spread more than 2,000 square yards in advance of the rolling. Any necessary sprinkling shall be kept within these limits. Care shall be taken to prevent cutting into the underlying layer during spreading. No material shall be placed in snow or on a soft, muddy, or frozen course. The aggregate base material shall be spread by spreader boxes or other approved devices. This equipment shall have positive thickness controls that spread the aggregate in the required amount to avoid or minimize the need for hand manipulation. Dumping from vehicles that require re-handling shall not be permitted. Hauling over the uncompacted base course shall not be permitted.

When more than one layer is required, the construction procedure described herein shall apply similarly to each layer.

209-3.4 Compaction. Immediately after completion of the spreading operations, compact each layer of the base course, as specified, with approved compaction equipment. The number, type, and weight of rollers shall be sufficient to compact the material to the required density within the same day that the aggregate is placed on the subgrade. The moisture content of the material during placing operations shall be within ±2 percentage points of the optimum moisture content as determined by ASTM D1556 (Test in accordance with ASTM D4718 if greater than 30% is retained on the 3/4 inch sieve) or ASTM D6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938.

209-3.5 Acceptance Sampling and Testing for Density. Aggregate base course shall be accepted for density on a lot basis. A lot will consist of one day's production if it does not exceed 2,400 square yards. A lot will consist of one-half day's production if a day's production consists of between 2,400 and 4,800 square yards. The ENGINEER shall perform all density tests.

Each lot shall be divided into two equal sublots. One test shall be made for each sublot and shall consist of the average of two random locations for density

determination. Sampling locations will be determined by the ENGINEER on a random basis per ASTM D3665.

Each lot will be accepted for density when the field density is at least 100% of the maximum density of laboratory specimens. The in-place field density shall be determined per ASTM D1556 Test in accordance with ASTM D 4718 if greater than 30% is retained on the 3/4 inch sieve or ASTM D6938 using Procedure A, the direct transmission method, and use ASTM D6938 to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938. The specimens shall be compacted and tested per ASTM D1557. If the specified density is not attained, the entire lot shall be reworked and/or recompacted and two additional random tests made at the Contractor's expense. This procedure shall be followed until the specified density is reached.

209-3.5.1 Acceptance Sampling and Testing for Gradation. Two samples per lot of aggregates to check gradation shall be taken by the ENGINEER. The lot will be consistent with acceptable sampling for density. Sampling locations will be determined by the ENGINEER on a random basis in accordance with statistical procedures contained in ASTM D 3665. The samples shall be taken from the in-place, compacted material. Sampling shall be in accordance with ASTM D 75, and testing shall be in accordance with ASTM C 136 and ASTM C 117. The data from the two gradation samples shall be averaged and compared to the job mix formula gradation requirements. All test holes shall be filled with aggregate base course and recompacted by the Contractor in accordance with these Specifications.

For any of the lots that do not meet the job mix formula gradation requirements, within the acceptable tolerance range, the lot shall be removed and replaced with aggregate meeting the job mix formula or modified in place and remixed at the expense of the contractor. The replaced or modified base course will be retested as required above. All additional retesting will be completed at the Contractor's expense.

209-3.6 Surface Tolerances. After the course has been compacted, the surface shall be tested for smoothness and accuracy of grade and crown. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified to a depth of at least 3 inches, reshaped and recompacted to grade. until the required smoothness and accuracy are obtained and approved by the ENGINEER. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense. The smoothness and accuracy requirements specified here apply only to the top layer when base course is constructed in more than one layer.

a. Smoothness. The finished surface shall not vary more than 3/8 inch when tested with a 12-foot straightedge applied parallel with and at right angles

to the centerline. The straightedge shall be moved continuously at half the length of the 12-foot straightedge for the full length of each line on a 50-foot grid.

b. Accuracy. The grade and crown shall be measured on a 50-foot grid and shall be within +0 and -1/2 inch of the specified grade.

209-3.7 Thickness Control. The thickness of the base course shall be within +0 and -1/2 inch of the specified thickness as determined by depth tests taken by the Contractor in the presence of the ENGINEER. Tests shall be taken at intervals representing no more than 300 square yards per test. Sampling locations will be determined by the ENGINEER per ASTM D3665. Where the thickness is deficient by more than 1/2 inch, the Contractor shall correct such areas at no additional cost by scarifying to a depth of at least 3 inches, adding new material of proper gradation, and the material shall be blended and recompacted to grade. Additional test holes may be required to identify the limits of deficient areas. The Contractor shall replace, at his expense, base material where depth tests have been taken.

209-3.8 Protection. Perform construction when the atmospheric temperature is above 35°F. When the temperature falls below 35°F, protect all completed areas by approved methods against detrimental effects of freezing. Correct completed areas damaged by freezing, rainfall, or other weather conditions to meet specified requirements. When the aggregates contain frozen materials or when the underlying course is frozen or wet, the construction shall be stopped. Hauling equipment may be routed over completed portions of the base course, provided no damage results. Equipment shall be routed over the full width of the base course to avoid rutting or uneven compaction. The ENGINEER will stop all hauling over completed or partially completed base course when, in the ENGINEER's opinion, such hauling is causing damage. Any damage to the base course shall be repaired by the Contractor at the Contractor's expense.

209-3.9 Maintenance. The Contractor shall maintain the base course in a satisfactory condition until the full pavement section is completed and accepted by the ENGINEER. The surface shall be kept clean and free from foreign material and properly drained at all times. Maintenance shall include immediate repairs to any defects and shall be repeated as often as necessary to keep the area intact. Any base course that is not paved over prior to the onset of winter shall be retested to verify that it still complies with the requirements of this specification. Any area of base course that is damaged shall be reworked or replaced as necessary to comply with this specification.

Equipment used in the construction of an adjoining section may be routed over completed base course, if no damage results and the equipment is routed over the full width of the base course to avoid rutting or uneven compaction.

The Contractor shall remove all survey and grade hubs from the base courses prior to placing any bituminous surface course.

METHOD OF MEASUREMENT

209-4.1 The quantity of crushed aggregate base course will be determined by measurement of the number of cubic yards of material actually constructed and accepted by the ENGINEER as complying with the plans and specifications. Base materials shall not be included in any other excavation quantities. On individual depth measurements, thickness more than ½ inch in excess of the design thickness shall be considered as the specified thickness, plus ½ inch in computing the number of cubic yards for payment.

BASIS OF PAYMENT

209-5.1 Payment shall be made at the contract unit price per cubic yard for crushed aggregate base course. This price shall be full compensation for furnishing all materials, for preparing and placing these materials, and for all labor, equipment tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-209-5.1	Crushed Aggregate Base Course - per Cubic Yard

TESTING REQUIREMENTS

ASTM C29	Standard Test Method for Bulk Density (“Unit Weight”) and Voids in Aggregate
ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C117	Standard Test Method for Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM D75	Standard Practice for Sampling Aggregates
ASTM D422	Standard Test Method for Particle-Size Analysis of Soils

ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3)
ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D4718	Standard Practice for Correction of Unit Weight and Water Content for Soils Containing Oversize Particles
ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
ASTM D6938	Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

END OF ITEM P-209

ITEM P-401

HOT MIX ASPHALT (HMA) PAVEMENTS

DESCRIPTION

401-1.1 This item shall consist of pavement courses composed of mineral aggregate and asphalt cement binder (asphalt binder) mixed in a central mixing plant and placed on a prepared course in accordance with these specifications and shall conform to the lines, grades, thicknesses, and typical cross-sections shown on the plans. Each course shall be constructed to the depth, typical section, and elevation required by the plans and shall be rolled, finished, and approved before the placement of the next course.

MATERIALS

401-2.1 Aggregate. Aggregates shall consist of crushed stone, crushed gravel, screenings, natural sand and mineral filler, as required. The aggregates should be free of ferrous sulfides, such as pyrite, that would cause "rust" staining that can bleed through pavement markings. The portion retained on the No. 4 sieve is coarse aggregate. The portion passing the No. 4 sieve and retained on the No. 200 sieve is fine aggregate, and the portion passing the No. 200 sieve is mineral filler.

a. Coarse Aggregate. Coarse aggregate shall consist of sound, tough, durable particles, free from films of matter that would prevent thorough coating and bonding with the bituminous material and free from organic matter and other deleterious substances. The percentage of wear shall not be greater than 40% when tested in accordance with ASTM C131. The sodium sulfate soundness loss shall not exceed 12%, or the magnesium sulfate soundness loss shall not exceed 18%, after five cycles, when tested in accordance with ASTM C88. Clay lumps and friable particles shall not exceed 1.0% when tested in accordance with ASTM C142.

Aggregate shall contain at least 75 percent by weight of individual pieces having two or more fractured faces and 85 percent by weight having at least one fractured face. The area of each face shall be equal to at least 75% of the smallest midsectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces. Fractured faces shall be achieved by crushing.

The aggregate shall not contain more than a total of 8%, by weight, of flat particles, elongated particles, and flat and elongated particles, when tested in accordance with ASTM D4791 with a value of 5:1.

b. Fine aggregate. Fine aggregate shall consist of clean, sound, tough, durable, angular shaped particles produced by crushing stone, or gravel that meets the requirements for wear and soundness specified for coarse aggregate. The aggregate particles shall be free from coatings of clay, silt, or other objectionable matter.

The fine aggregate, including any blended material for the fine aggregate, shall have a plasticity index of not more than six (6) and a liquid limit of not more than 25 when tested in accordance with ASTM D4318.

The soundness loss shall not exceed 10% when sodium sulfate is used or 15% when magnesium sulfate is used, after five cycles, when tested per ASTM C88.

Clay lumps and friable particles shall not exceed 1.0%, by weight, when tested in accordance with ASTM C142.

Natural (non-manufactured) sand may be used to obtain the gradation of the aggregate blend or to improve the workability of the mix. The amount of sand to be added will be adjusted to produce mixtures conforming to requirements of this specification. The fine aggregate shall not contain more than 15% natural sand by weight of total aggregates. If used, the natural sand shall meet the requirements of ASTM D1073 and shall have a plasticity index of not more than six (6) and a liquid limit of not more than 25 when tested in accordance with ASTM D4318.

The aggregate shall have sand equivalent values of 45 or greater when tested in accordance with ASTM D2419.

c. Sampling. ASTM D 75 shall be used in sampling coarse and fine aggregate, and ASTM C183 shall be used in sampling mineral filler.

401-2.2 Mineral filler. If filler, in addition to that naturally present in the aggregate, is necessary, it shall meet the requirements of ASTM D242.

401-2.3 Asphalt cement binder. Asphalt cement binder shall conform to ASTM D6373 Performance Grade (PG) 70-22. A certificate of compliance from the manufacturer shall be included with the mix design submittal.

The supplier's certified test report with test data indicating grade certification for the asphalt binder shall be provided to the ENGINEER for each load at the time of delivery to the mix plant. A certified test report with test data indicating grade certification for the asphalt binder shall also be provided to the ENGINEER for any modification of the asphalt binder after delivery to the mix plant and before use in the HMA.

401-2.4 Preliminary Material Acceptance. Prior to delivery of materials to the job site, the Contractor shall submit certified test reports to the ENGINEER for the following materials:

a. Coarse Aggregate:
(1) Percent of wear
(2) Soundness
(3) Clay lumps and friable particles
(4) Percent fractured faces
(5) Flat and elongated particles

b. Fine Aggregate:
(1) Liquid limit and Plasticity index
(2) Soundness
(3) Clay lumps and friable particles
(4) Percent natural sand
(5) Sand equivalent

c. Mineral Filler.

d. Asphalt Binder. Test results for asphalt binders hall include temperature/viscosity charts for mixing and compaction temperatures.

The certifications shall show the appropriate ASTM tests for each material, the test results, and a statement that the material meets the specification requirement.

The ENGINEER may request samples for testing, prior to and during production, to verify the quality of the materials and to ensure conformance with the applicable specifications.

401-2.5 Anti-Stripping Agent. Any anti-stripping agent or additive if required shall be heat stable, shall not change the asphalt cement viscosity beyond specifications, shall contain no harmful ingredients, shall be added in recommended proportion by approved method, and shall be a material approved by the Department of Transportation of the State in which the project is located.

COMPOSITION

401-3.1 Composition of Mixture. The HMA mix shall be composed of a mixture of well-graded aggregate, filler and anti-strip agent if required, and asphalt binder. The several aggregate fractions shall be sized, handled in separate size groups, and combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF).

401-3.2 Job Mix Formula (JMF). No hot-mixed asphalt (HMA) for payment shall be produced until a JMF has been approved in writing by the ENGINEER. The asphalt mix-design and JMF shall be prepared by an accredited laboratory that meets the requirements of paragraph 401-3.4. The HMA shall be designed using procedures contained in Asphalt Institute MS-2 Mix Design Manual, 7th Edition. Samples shall be prepared at various asphalt contents and compacted using the gyratory compactor in accordance with ASTM D6925.

If material variability exceeds the standard deviations indicated, the JMF and subsequent production targets shall be based on a stability greater than shown in Table 1 and the flow shall be targeted close to the mid-range of the criteria in order to meet the acceptance requirements.

The design criteria in Table 1 are target values necessary to meet the acceptance requirements contained in paragraph 401-5.2b. The criteria is based on a production process which has a material variability with the following standard deviations: Stability = 270 lbs; Flow (0.01 inch) = 0.015 inches; Air Voids = 0.65%.

Tensile strength ratio (TSR) of the composite mixture, as determined by ASTM D4867, shall not be less than 75 when tested at a saturation of 70-80% or an anti-stripping agent shall be added to the HMA, as necessary, to produce a TSR of not less than 75 when tested at a saturation of 70-80%. If an anti-strip agent is required, it shall be provided by the Contractor at no additional cost to the OWNER.

The JMF shall be submitted in writing by the Contractor at least 5 days prior to the scheduled Pre-Paving Conference. The JMF shall be developed within the same construction season using aggregates currently being produced.

The submitted JMF shall be stamped or sealed by the responsible professional ENGINEER of the laboratory and shall include the following items as a minimum:

a. Percent passing each sieve size for total combined gradation, individual gradation of all aggregate stockpiles and per cent by weight of each stockpile used in the job mix formula.
b. Percent of asphalt cement.
c. Asphalt performance grade and type of modifier if used.
d. Number of gyrations.
e. Laboratory mixing temperature.
f. Laboratory compaction temperature.
g. Temperature-viscosity relationship of the PG asphalt cement binder showing acceptable range of mixing and compaction temperatures; and for modified binders include supplier recommended mixing and

compaction temperatures.

h. Plot of the combined gradation on a 0.45 power gradation curve.

i. Graphical plots of air voids, voids in the mineral aggregate, and unit weight versus asphalt content.

j. Specific Gravity and absorption of each aggregate.

k. Percent natural sand.

l. Percent fractured faces.

m. Percent by weight of flat particles**,** elongated particles, and flat and elongated particles (and criteria).

n. Tensile Strength Ratio (TSR).

o. Anti-strip agent (if required).

p. Date the JMF was developed. Mix designs that are not dated or which are from a prior construction season shall not be accepted.

The Contractor shall submit to the ENGINEER the results of verification testing of three (3) asphalt samples prepared at the optimum asphalt content. The average of the results of this testing shall indicate conformance with the JMF requirements specified in Tables 1 and 3.

When the project requires asphalt mixtures of differing aggregate gradations, a separate JMF and the results of JMF verification testing shall be submitted for each mix.

The JMF for each mixture shall be in effect until a modification is approved in writing by the ENGINEER. Should a change in sources of materials be made, a new JMF must be submitted within 15 days and approved by the ENGINEER in writing before the new material is used. After the initial production JMF has been approved by the ENGINEER and a new or modified JMF is required for whatever reason, the subsequent cost of the ENGINEER's approval of the new or modified JMF will be borne by the Contractor. There will be no time extension given or considerations for extra costs associated with the stoppage of production paving or restart of production paving due to the time needed for the ENGINEER to approve the initial, new or modified JMF.

The Marshall Design Criteria applicable to the project shall meet the criteria specified in Table 1.

Table 1. Gyratory Compaction Criteria

Test Property	Value
Number of Compactor GyrationsGyrations	75
Air voids (%)	3.5
Percent voids in mineral aggregate, minimum	See Table 2

Table 2. Minimum Percent Voids In Mineral Aggregate (VMA)

Aggregate (See Table 3)	Minimum VMA
¾ Inch	15%

The mineral aggregate shall be of such size that the percentage composition by weight, as determined by laboratory sieves, will conform to the gradation or gradations specified in Table 3 when tested in accordance with ASTM C136 and ASTM C117.

The gradations in Table 3 represent the limits that shall determine the suitability of aggregate for use from the sources of supply; be well graded from coarse to fine and shall not vary from the low limit on one sieve to the high limit on the adjacent sieve, or vice versa.

Table 3. Aggregate - HMA Pavements

Sieve Size	Percentage by Weight Passing Sieve
1 inch	- -
3/4 inch	100
1/2 inch	79 - 99
3/8 inch	68 - 88
No. 4	48 - 68
No. 8	33 - 53
No. 16	20 - 40
No. 30	14 - 30
No. 50	9 - 21
No. 100	6 - 16
No. 200	3 - 6
Asphalt Percent:	
Stone or gravel	5.0 - 7.5

The aggregate gradations shown are based on aggregates of uniform specific gravity. The percentages passing the various sieves shall be corrected when aggregates of varying specific gravities are used, as indicated in the Asphalt Institute MS-2 Mix Design Manual, 7th Edition.

401-3.3 Reclaimed Asphalt Pavement (RAP). RAP shall not be used.

401-3.4 Job Mix Formula (JMF) Laboratory. The Contractor's laboratory used to

develop the JMF shall be accredited in accordance with ASTM D3666. The laboratory accreditation must be current and listed on the accrediting authority's website. All test methods required for developing the JMF must be listed on the lab accreditation. A copy of the laboratory's current accreditation and accredited test methods shall be submitted to the ENGINEER prior to start of construction.

401-3.5 Test Section. Prior to full production, the Contractor shall prepare and place a quantity of HMA according to the JMF. The amount of HMA shall be sufficient to construct a test section 300 feet long and 20 feet wide, placed in two lanes, with a longitudinal cold joint, and shall be of the same depth specified for the construction of the course which it represents. A cold joint for this test section is an exposed construction joint at least four (4) hours old or whose mat has cooled to less than 160°F. The cold joint must be cut back using the same procedure that will be used during production in accordance with 401-4.13. The underlying grade or pavement structure upon which the test section is to be constructed shall be the same as the remainder of the course represented by the test section. The equipment used in construction of the test section shall be the same type and weight to be used on the remainder of the course represented by the test section.

The test section shall be evaluated for acceptance as a single lot in accordance with the acceptance criteria in paragraph 401-5.1 and 401-5.2. The test section shall be divided into equal sublots. As a minimum the test section shall consist of three (3) sublots.

The test section shall be considered acceptable if (1) mat density, air voids, and joint density are 90% or more within limits, (2) gradation and asphalt content are within the action limits specified in paragraphs 401-6.5a and 5b, and (3) the voids in the mineral aggregate are within the limits of Table 2.

If the initial test section should prove to be unacceptable, the necessary adjustments to the JMF, plant operation, placing procedures, and/or rolling procedures shall be made. A second test section shall then be placed. If the second test section also does not meet specification requirements, both sections shall be removed at the Contractor's expense. Additional test sections, as required, shall be constructed and evaluated for conformance to the specifications. Any additional sections that are not acceptable shall be removed at the Contractor's expense. Full production shall not begin until an acceptable test section has been constructed and accepted in writing by the ENGINEER. Once an acceptable test section has been placed, payment for the initial test section and the section that meets specification requirements shall be made in accordance with paragraph 401-8.1.

Job mix control testing shall be performed by the Contractor at the start of plant production and in conjunction with the calibration of the plant for the

JMF. If aggregates produced by the plant do not satisfy the gradation requirements or produce a mix that meets the JMF, it will be necessary to reevaluate and redesign the mix using plant-produced aggregates. Specimens shall be prepared and the optimum asphalt content determined in the same manner as for the original JMF tests.

Contractor will not be allowed to place the test section until the Contractor Quality Control Program, showing conformance with the requirements of Paragraph 401-6.1, has been approved, in writing, by the ENGINEER.

CONSTRUCTION METHODS

401-4.1 Weather Limitations. The HMA shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than specified in Table 4. The temperature requirements may be waived by the ENGINEER, if requested; however, all other requirements including compaction shall be met.

Table 4. Surface Temperature Limitations of Underlying Course

Mat Thickness	Base Temperature (Minimum)
	°F
3 inches or greater	40
Greater than 2 inchesbut less than 3 inches	45

401-4.2 HMA Plant. Plants used for the preparation of HMA shall conform to the requirements of American Association of State Highway and Transportation Officials (AASHTO) M156 with the following changes:

Requirements for all plants include:

a. Truck Scales. The HMA shall be weighed on approved scales furnished by the Contractor, or on certified public scales at the Contractor's expense. Scales shall be inspected and sealed as often as the ENGINEER deems necessary to assure their accuracy. Scales shall conform to the requirements of the General Provisions, subsection 90-01.

In lieu of scales, and as approved by the ENGINEER, HMA weight may be determined by the use of an electronic weighing system equipped with an automatic printer that weighs the total HMA production and as often thereafter as requested by the ENGINEER.

b. Testing Facilities. The Contractor shall ensure laboratory facilities are provided at the plant for the use of the ENGINEER. The lab shall have

sufficient space and equipment so that both testing representatives (ENGINEER's and Contractor's) can operate efficiently. The lab shall meet the requirements of ASTM D 3666 including all necessary equipment, materials, calibrations, current reference standards to comply with the specifications and a masonry saw with diamond blade for trimming pavement cores and samples.

The plant testing laboratory shall have a floor space area of not less than 200 square feet, with a ceiling height of not less than 7-1/2 feet. The laboratory shall be weather tight, sufficiently heated in cold weather, air-conditioned in hot weather to maintain temperatures for testing purposes of 70°F ±5°F. The plant testing laboratory shall be located on the plant site to provide an unobstructed view, from one of its windows, of the trucks being loaded with the plant mix materials. In addition, the facility shall include the minimum:

(1) Adequate artificial lighting.
(2) Electrical outlets sufficient in number and capacity for operating the required testing equipment and drying samples.
(3) A minimum of two (2) Underwriter's Laboratories approved fire extinguishers of the appropriate types and class.
(4) Work benches for testing.
(5) Desk with chairs and file cabinet.
(6) Sanitary facilities convenient to testing laboratory.
(7) Exhaust fan to outside air.
(8) Sink with running water.

Failure to provide the specified facilities shall be sufficient cause for disapproving HMA plant operations.

Laboratory facilities shall be kept clean, and all equipment shall be maintained in proper working condition. The ENGINEER shall be permitted unrestricted access to inspect the Contractor's laboratory facility and witness quality control activities. The ENGINEER will advise the Contractor in writing of any noted deficiencies concerning the laboratory facility, equipment, supplies, or testing personnel and procedures. When the deficiencies are serious enough to be adversely affecting the test results, the incorporation of the materials into the work shall be suspended immediately and will not be permitted to resume until the deficiencies are satisfactorily corrected.

c. Inspection of Plant. The ENGINEER, or ENGINEER's authorized representative, shall have access, at all times, to all areas of the plant for checking adequacy of equipment; inspecting operation of the plant: verifying weights, proportions, and material properties; and checking the temperatures maintained in the preparation of the mixtures.

d. Storage Bins and Surge Bins. The HMA stored in storage and surge bins shall meet the same requirements as HMA loaded directly into trucks and may be permitted under the following conditions:

(1) Stored in non-insulated bins for a period of time not to exceed three (3) hours.

(2) Stored in insulated bins for a period of time not to exceed eight (8) hours.

If the ENGINEER determines that there is an excessive amount of heat loss, segregation, or oxidation of the HMA due to temporary storage, no temporary storage will be allowed.

401-4.3 Hauling Equipment. Trucks used for hauling HMA shall have tight, clean, and smooth metal beds. To prevent the HMA from sticking to the truck beds, the truck beds shall be lightly coated with a minimum amount of paraffin oil, lime solution, or other material approved by the ENGINEER. Petroleum products shall not be used for coating truck beds. Each truck shall have a suitable cover to protect the mixture from adverse weather. When necessary, to ensure that the mixture will be delivered to the site at the specified temperature, truck beds shall be insulated or heated and covers shall be securely fastened.

401-4.3.1 Material Transfer Vehicle (MTV). Material transfer vehicles are not required.

401-4.4 HMA Pavers. HMA pavers shall be self-propelled with an activated heated screed, capable of spreading and finishing courses of HMA that will meet the specified thickness, smoothness, and grade. The paver shall have sufficient power to propel itself and the hauling equipment without adversely affecting the finished surface.

The paver shall have a receiving hopper of sufficient capacity to permit a uniform spreading operation. The hopper shall be equipped with a distribution system to place the HMA uniformly in front of the screed without segregation. The screed shall effectively produce a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture.

If, during construction, it is found that the spreading and finishing equipment in use leaves tracks or indented areas, or produces other blemishes in the pavement that are not satisfactorily corrected by the scheduled operations, the use of such equipment shall be discontinued and satisfactory equipment shall be provided by the Contractor.

401-4.4.1 Automatic Grade Controls. The HMA paver shall be equipped with a

control system capable of automatically maintaining the specified screed elevation. The control system shall be automatically actuated from either a reference line and/or through a system of mechanical sensors or sensor-directed mechanisms or devices that will maintain the paver screed at a predetermined transverse slope and at the proper elevation to obtain the required surface. The transverse slope controller shall be capable of maintaining the screed at the desired slope within ±0.1%.

The controls shall be capable of working in conjunction with any of the following attachments:

a. Ski-type device of not less than 30 feet in length.
b. Taut string-line (wire) set to grade.
c. Short ski or shoe.
d. Laser control.

401-4.5 Rollers. Rollers of the vibratory, steel wheel, and pneumatic-tired type shall be used. They shall be in good condition, capable of operating at slow speeds to avoid displacement of the HMA. The number, type, and weight of rollers shall be sufficient to compact the HMA to the required density while it is still in a workable condition.

All rollers shall be specifically designed and suitable for compacting HMA concrete and shall be properly used. Rollers that impair the stability of any layer of a pavement structure or underlying soils shall not be used. Depressions in pavement surfaces caused by rollers shall be repaired by the Contractor at their own expense.

The use of equipment that causes crushing of the aggregate will not be permitted.

401-4.6. Density Device. The Contractor shall have on site a density gauge during all paving operations in order to assist in the determination of the optimum rolling pattern, type of roller and frequencies, as well as to monitor the effect of the rolling operations during production paving. The Contractor shall also supply a qualified technician during all paving operations to calibrate the gauge and obtain accurate density readings for all new HMA. These densities shall be supplied to the ENGINEER upon request at any time during construction. No separate payment will be made for supplying the density gauge and technician.

401-4.7 Preparation of Asphalt Binder. The asphalt binder shall be heated in a manner that will avoid local overheating and provide a continuous supply of the asphalt binder to the mixer at a uniform temperature. The temperature of unmodified asphalt binder delivered to the mixer shall be sufficient to provide a suitable viscosity for adequate coating of the aggregate particles, but shall

not exceed 325°F when added to the aggregate. The temperature of modified asphalt binder shall be no more than 350°F when added to the aggregate.

401-4.8 Preparation of Mineral Aggregate. The aggregate for the HMA shall be heated and dried. The maximum temperature and rate of heating shall be such that no damage occurs to the aggregates. The temperature of the aggregate and mineral filler shall not exceed 350°F when the asphalt binder is added. Particular care shall be taken that aggregates high in calcium or magnesium content are not damaged by overheating. The temperature shall not be lower than is required to obtain complete coating and uniform distribution on the aggregate particles and to provide a mixture of satisfactory workability.

401-4.9 Preparation of HMA. The aggregates and the asphalt binder shall be weighed or metered and introduced into the mixer in the amount specified by the JMF. The combined materials shall be mixed until the aggregate obtains a uniform coating of asphalt binder and is thoroughly distributed throughout the mixture. Wet mixing time shall be the shortest time that will produce a satisfactory mixture, but not less than 25 seconds for batch plants. The wet mixing time for all plants shall be established by the Contractor, based on the procedure for determining the percentage of coated particles described in ASTM D2489, for each individual plant and for each type of aggregate used. The wet mixing time will be set to achieve 95 % of coated particles. For continuous mix plants, the minimum mixing time shall be determined by dividing the weight of its contents at operating level by the weight of the mixture delivered per second by the mixer. The moisture content of all HMA upon discharge shall not exceed 0.5%.

401-4.10 Preparation of the Underlying Surface. Immediately before placing the HMA, the underlying course shall be cleaned of all dust and debris. A prime coat and tack coat shall be applied in accordance with Item P-602 and P-603, if shown on the plans.

401-4.11 Laydown Plan, Transporting, Placing, and Finishing. Prior to the placement of the HMA, the Contractor shall prepare a laydown plan for approval by the ENGINEER. This is to minimize the number of cold joints in the pavement. The laydown plan shall include the sequence of paving laydown by stations, width of lanes, temporary ramp locations, and laydown temperature. The laydown plan shall also include estimated time of completion for each portion of the work (that is, milling, paving, rolling, cooling, etc.). Modifications to the laydown plan shall be approved by the ENGINEER.

The HMA shall be transported from the mixing plant to the site in vehicles conforming to the requirements of paragraph 401-4.3. Deliveries shall be scheduled so that placing and compacting of HMA is uniform with minimum

stopping and starting of the paver. Hauling over freshly placed material shall not be permitted until the material has been compacted, as specified, and allowed to cool to atmospheric temperature.

The alignment and elevation of the paver shall be regulated from outside reference lines established for this purpose for the first lift of all pavements. Successive lifts of HMA surface course may be placed using a ski, or laser control per paragraph 401-4.4.1, provided grades of the first lift of HMA surface course meet the tolerances of paragraphs 401-5.2b(6) as verified by a survey. Contractor shall survey each lift of HMA surface course and certify to ENGINEER that every lot of each lift meets the grade tolerances of paragraph 401-5.2b(6) before the next lift can be placed.

The initial placement and compaction of the HMA shall occur at a temperature suitable for obtaining density, surface smoothness, and other specified requirements but not less than 250°F.

Edges of existing HMA pavement abutting the new work shall be saw cut and carefully removed as shown on the drawings and coated with asphalt tack coat before new material is placed against it.

Upon arrival, the HMA shall be placed to the full width by a HMA paver. It shall be struck off in a uniform layer of such depth that, when the work is completed, it shall have the required thickness and conform to the grade and contour indicated. The speed of the paver shall be regulated to eliminate pulling and tearing of the HMA mat. Unless otherwise permitted, placement of the HMA shall begin along the centerline of a crowned section or on the high side of areas with a one-way slope. The HMA shall be placed in consecutive adjacent strips having a minimum width of 12.5 feet except where edge lanes require less width to complete the area. Additional screed sections shall not be attached to widen paver to meet the minimum lane width requirements specified above unless additional auger sections are added to match. The longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least 1 foot; however, the joint in the surface top course shall be at the centerline of crowned pavements. Transverse joints in one course shall be offset by at least 10 feet from transverse joints in the previous course.

Transverse joints in adjacent lanes shall be offset a minimum of 10 feet.

On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the HMA may be spread and luted by hand tools.

Areas of segregation in the surface course, as determined by the ENGINEER, shall be removed and replaced at the Contractor's expense. The area shall be

removed by saw cutting and milling a minimum of 2 inches deep. The area to be removed and replaced shall be a minimum width of the paver and a minimum of 10 feet long.

401-4.12 Compaction of HMA. After placing, the HMA shall be thoroughly and uniformly compacted by power rollers. The surface shall be compacted as soon as possible when the HMA has attained sufficient stability so that the rolling does not cause undue displacement, cracking or shoving. The sequence of rolling operations and the type of rollers used shall be at the discretion of the Contractor. The speed of the roller shall, at all times, be sufficiently slow to avoid displacement of the hot mixture and be effective in compaction. Any displacement occurring as a result of reversing the direction of the roller, or from any other cause, shall be corrected at once.

Sufficient rollers shall be furnished to handle the output of the plant. Rolling shall continue until the surface is of uniform texture, true to grade and cross-section, and the required field density is obtained. To prevent adhesion of the HMA to the roller, the wheels shall be equipped with a scraper and kept properly moistened but excessive water will not be permitted.

In areas not accessible to the roller, the mixture shall be thoroughly compacted with approved power driven tampers. Tampers shall weigh not less than 275 pounds, have a tamping plate width not less than 15 inches, be rated at not less than 4,200 vibrations per minute, and be suitably equipped with a standard tamping plate wetting device.

Any HMA that becomes loose and broken, mixed with dirt, contains check-cracking, or in any way defective shall be removed and replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This work shall be done at the Contractor's expense. Skin patching shall not be allowed.

401-4.13 Joints. The formation of all joints shall be made in such a manner as to ensure a continuous bond between the courses and obtain the required density. All joints shall have the same texture as other sections of the course and meet the requirements for smoothness and grade.

The roller shall not pass over the unprotected end of the freshly laid HMA except when necessary to form a transverse joint. When necessary to form a transverse joint, it shall be made by means of placing a bulkhead or by tapering the course. The tapered edge shall be cut back to its full depth and width on a straight line to expose a vertical face prior to placing the adjacent lane. In both methods, all contact surfaces shall be coated with an asphalt tack coat before placing any fresh HMA against the joint.

Longitudinal joints which have been left exposed for more than four (4) hours;

the surface temperature has cooled to less than 175°F; or are irregular, damaged, uncompacted or otherwise defective shall be cut back 3 inches to 6 inches to expose a clean, sound, uniform vertical surface for the full depth of the course. All cutback material shall be removed from the project. Asphalt tack coat or other product approved by the ENGINEER shall be applied to the clean, dry joint, prior to placing any additional fresh HMA against the joint. Any laitance produced from cutting joints shall be removed by vacuuming and washing. The cost of this work shall be considered incidental to the cost of the HMA.

401-4.14 Saw-Cut Grooving. Deleted.

401-4.15 Diamond Grinding. When required, diamond grinding shall be accomplished by sawing with saw blades impregnated with industrial diamond abrasive. The saw blades shall be assembled in a cutting head mounted on a machine designed specifically for diamond grinding that will produce the required texture and smoothness level without damage to the pavement. The saw blades shall be 1/8-inch wide and there shall be a minimum of 55 to 60 blades per 12 inches of cutting head width; the actual number of blades will be determined by the Contractor and depend on the hardness of the aggregate. Each machine shall be capable of cutting a path at least 3 feet wide. Equipment that causes ravels, aggregate fractures, spalls or disturbance to the pavement will not be permitted. The depth of grinding shall not exceed 1/2 inch and all areas in which diamond grinding has been performed will be subject to the final pavement thickness tolerances specified. Grinding will be tapered in all directions to provide smooth transitions to areas not requiring grinding. Areas that have been ground will be sealed with a P-608 surface treatment as directed by the ENGINEER.

401-4.16 Nighttime Paving Requirements. Nighttime paving operations will not be allowed.

MATERIAL ACCEPTANCE

401-5.1 Acceptance Sampling and Testing. Unless otherwise specified, all acceptance sampling and testing necessary to determine conformance with the requirements specified in this section will be performed by the ENGINEER at no cost to the Contractor except that coring and profilograph testing as required in this section shall be completed and paid for by the Contractor.

Testing organizations performing these tests except profilograph shall be accredited in accordance with ASTM D 3666. The laboratory accreditation must be current and listed on the accrediting authority's website. All test methods required for acceptance sampling and testing must be listed on the lab accreditation. A copy of the laboratory's current accreditation and accredited test methods shall be submitted to the ENGINEER prior to start of

construction. All equipment in Contractor furnished laboratories shall be calibrated by an independent testing organization prior to the start of operations at the Contractor's expense.

a. Hot Mixed Asphalt. Plant-produced HMA shall be tested for air voids on a lot basis. Sampling shall be from material deposited into trucks at the plant or from trucks at the job site. Samples shall be taken in accordance with ASTM D979.

A standard lot shall be equal to one day's production or 2000 tons whichever is smaller. If the day's production is expected to exceed 2000 tons, but less than 4000 tons, the lot size shall be 1/2 day's production. If the day's production exceeds 4000 tons, the lot size shall be an equal sized fraction of the day's production, but shall not exceed 2000 tons.

Where more than one plant is simultaneously producing HMA for the job, the lot sizes shall apply separately for each plant.

(1) Sampling. Each lot will consist of four equal sublots. Sufficient HMA for preparation of test specimens for all testing will be sampled by the ENGINEER on a random basis, in accordance with the procedures contained in ASTM D3665. Samples will be taken in accordance with ASTM D979.

The sample of HMA may be put in a covered metal tin and placed in an oven for not less than 30 minutes nor more than 60 minutes to stabilize to compaction temperature. The compaction temperature of the specimens shall be as specified in the JMF.

(2) Testing. Air voids will be determined by the ENGINEER in accordance with ASTM D3203. One set of laboratory compacted specimens will be prepared for each sublot in accordance with ASTM D6925 at the number of gyrations required by paragraph 401-3.2, Table 1. Each set of laboratory compacted specimens will consist of three test specimens prepared from the same sample.

Prior to testing, the bulk specific gravity of each test specimen shall be measured by the ENGINEER in accordance with ASTM D2726 using the procedure for laboratory-prepared thoroughly dry specimens for use in computing air voids and pavement density.

For air voids determination, the theoretical maximum specific gravity of the mixture shall be measured one time for each sublot in accordance with ASTM D2041. The value used in the air voids computation for each sublot shall be based on theoretical maximum specific gravity measurement for the sublot.

(3) Acceptance. Acceptance of plant produced HMA for air voids shall be determined by the ENGINEER in accordance with the requirements of paragraph 401-5.2b.

b. In-Place HMA. HMA placed in the field shall be tested for mat and joint density on a lot basis. A standard lot shall be equal to one day's production or 2000 tons whichever is smaller. If the day's production is expected to exceed 2000 tons, but less than 4000 tons, the lot size shall be 1/2 day's production. If the day's production exceeds 4000 tons, the lot size shall be an equal sized fraction of the day's production, but shall not exceed 2000 tons.

(1) Mat Density. The lot size shall be the same as that indicated in paragraph 401-5.1a and shall be divided into four equal sublots. One core of finished, compacted HMA shall be taken by the Contractor from each sublot. Core locations will be determined by the ENGINEER on a random basis in accordance with procedures contained in ASTM D3665. Cores for mat density shall not be taken closer than one foot from a transverse or longitudinal joint.

(2) Joint Density. The lot size shall be the total length of longitudinal joints constructed by a lot of HMA as defined in paragraph 401-5.1a. The lot shall be divided into four equal sublots. One core of finished, compacted HMA shall be taken by the Contractor from each sublot. Core locations will be determined by the ENGINEER on a random basis in accordance with procedures contained in ASTM D 3665. All cores for joint density shall be taken centered on the joint. The minimum core diameter for joint density determination shall be 5 inches.

(3) Sampling. Samples shall be neatly cut with a diamond core drill bit. Samples will be taken in accordance with ASTM D979. The minimum diameter of the sample shall be 5 inches. Samples that are clearly defective, as a result of sampling, shall be discarded and another sample taken. The Contractor shall furnish all tools, labor, and materials for cutting samples, cleaning, and filling the cored pavement. Cored pavement shall be cleaned and core holes shall be filled in a manner acceptable to the ENGINEER and within one day after sampling. Laitance produced by the coring operation shall be removed immediately.

The top most lift of HMA shall be completely bonded to the underlying layer. If any of the cores reveal that the surface is not bonded to the layer immediately below the surface then additional cores shall be taken as directed by the ENGINEER in accordance with paragraph

401-5.1b to determine the extent of any delamination. All delaminated areas shall be completely removed by milling to the limits and depth and replaced as directed by the ENGINEER at no additional cost.

(4) Testing. The bulk specific gravity of each cored sample will be measured by the ENGINEER in accordance with ASTM D 2726. Samples will be taken in accordance with ASTM D 979. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each sublot sample by the average bulk specific gravity of all laboratory prepared specimens for the lot, as determined in paragraph 401-5.1a(2). The bulk specific gravity used to determine the joint density at joints formed between different lots shall be the lowest of the bulk specific gravity values from the two different lots.

(5) Acceptance. Acceptance of field placed HMA for mat density will be determined by the ENGINEER in accordance with the requirements of paragraph 401-5.2b(1). Acceptance for joint density will be determined by the ENGINEER in accordance with the requirements of paragraph 401-5.2b(3).

c. Partial Lots. When operational conditions cause a lot to be terminated before the specified number of tests have been made for the lot, or when the Contractor and ENGINEER agree in writing to allow overages or other minor tonnage placements to be considered as partial lots, the following procedure will be used to adjust the lot size and the number of tests for the lot.

The last batch produced where production is halted will be sampled, and its properties shall be considered as representative of the particular sublot from which it was taken. In addition, an agreed to minor placement will be sampled, and its properties shall be considered as representative of the particular sublot from which it was taken. Where three sublots are produced, they shall constitute a lot. Where one or two sublots are produced, they shall be incorporated into the next lot, and the total number of sublots shall be used in the acceptance plan calculation, that is, n = 5 or n = 6, for example. Partial lots at the end of asphalt production on the project shall be included with the previous lot. The lot size for field placed material shall correspond to that of the plant material, except that, in no cases, shall less than three (3) cored samples be obtained, that is, n = 3.

401-5.2 Acceptance Criteria.

a. General. Acceptance will be based on the following characteristics of the HMA and completed pavement as well as the implementation of the Contractor Quality Control Program and test results:

(1) Air voids
(2) Mat density
(3) Joint density
(4) Thickness
(5) Smoothness
(6) Grade

Mat density and air voids will be evaluated for acceptance in accordance with paragraph 401-5.2b(1). Joint density will be evaluated for acceptance in accordance with paragraph 401-5.2b(3).

Thickness will be evaluated by the ENGINEER for compliance in accordance with paragraph 401-5.2b(4). Acceptance for smoothness will be based on the criteria contained in paragraph 401-5.2b(5). Acceptance for grade will be based on the criteria contained in paragraph 401-5.2b(7).

The ENGINEER may at any time, reject and require the Contractor to dispose of any batch of HMA which is rendered unfit for use due to contamination, segregation, incomplete coating of aggregate, or improper mix temperature. Such rejection may be based on only visual inspection or temperature measurements. In the event of such rejection, the Contractor may take a representative sample of the rejected material in the presence of the ENGINEER, and if it can be demonstrated in the laboratory, in the presence of the ENGINEER, that such material was erroneously rejected, payment will be made for the material at the contract unit price.

b. Acceptance Criteria.

(1) Mat Density and Air Voids. Acceptance of each lot of plant produced material for mat density and air voids shall be based on the percentage of material within specification limits (PWL). If the PWL of the lot equals or exceeds 90%, the lot shall be acceptable. Acceptance and payment shall be determined in accordance with paragraph 401-8.1.

(2) Joint Density. Acceptance of each lot of plant produced HMA for joint density shall be based on the PWL. If the PWL of the lot is equal to or exceeds 90 %, the lot shall be considered acceptable. If the PWL is less than 90 %, the Contractor shall evaluate the reason and act accordingly. If the PWL is less than 80 %, the Contractor shall cease operations and until the reason for poor compaction has been determined. If the PWL is less than 71%, the pay factor for the lot used to complete the joint shall be reduced by five (5) percentage points. This lot pay factor reduction shall be incorporated and evaluated in accordance with paragraph 401-8.1.

(3) Thickness. Thickness of each lift of surface course shall be evaluated

by the ENGINEER for compliance to the requirements shown on the plans. Measurements of thickness shall be made by the ENGINEER using the cores extracted for each sublot for density measurement. The maximum allowable deficiency at any point shall not be more than 1/4 inch less than the thickness indicated for the lift. Average thickness of lift, or combined lifts, shall not be less than the indicated thickness. Where the thickness tolerances are not met, the lot or sublot shall be corrected by the Contractor at his expense by removing the deficient area and replacing with new pavement. The Contractor, at his expense, may take additional cores as approved by the ENGINEER to circumscribe the deficient area.

(4) Smoothness. The final surface shall be free from roller marks. After the final rolling, but not later than 24 hours after placement, the surface of each lot shall be tested in both longitudinal and transverse directions for smoothness to reveal all surface irregularities exceeding the tolerances specified. The Contractor shall furnish paving equipment and employ methods that produce a surface for each pavement lot meeting smoothness requirements and the finished surface course of the pavement shall not vary more than 1/4 inch when evaluated with a 12-foot straightedge. When the surface course smoothness exceeds specification tolerances which cannot be corrected by diamond grinding of the surface course, full depth removal and replacement of surface course corrections shall be to the limit of the longitudinal placement. Corrections involving diamond grinding will be subject to the final pavement thickness tolerances specified. The Contractor shall apply a surface treatment per Item P-608 or P-609 to all areas that have been subject to grinding as directed by the ENGINEER.

(a) Transverse Measurements. Transverse measurements will be taken for each lot placed. Transverse measurements will be taken perpendicular to the pavement centerline each 50 feet or more often as determined by the ENGINEER.

(i) Testing shall be continuous across all joints, starting with one-half the length of the straightedge at the edge of pavement section being tested and then moved ahead one-half the length of the straightedge for each successive measurement. Smoothness readings will not be made across grade changes or cross slope transitions; at these transition areas, the straightedge position shall be adjusted to measure surface smoothness and not design grade or cross slope transitions. The amount of surface irregularity shall be determined by placing the freestanding (unleveled) straightedge on the pavement surface and allowing it to rest upon the two highest spots covered by its length, and measuring the maximum gap

between the straightedge and the pavement surface in the area between these two high points. High spots on final surface course greater than 1/4 inch in transverse direction shall be corrected with diamond grinding per paragraph 401-4.15 or by removing and replacing full depth of surface course. Grinding will be tapered in all directions to provide smooth transitions to areas not requiring grinding. The area corrected by grinding should not exceed 10% of the total area and these areas shall be retested after grinding.

(ii) The joint between lots shall be tested separately to facilitate smoothness between lots. The amount of surface irregularity shall be determined by placing the freestanding (unleveled) straightedge on the pavement surface, with half the straightedge on one side of the joint and the other half of the straightedge on the other side of the joint. Measure the maximum gap between the straightedge and the pavement surface in the area between these two high points. One measurement shall be taken at the joint every 50 feet or more often if directed by the ENGINEER. Deviations on final surface course greater than 1/4 inch in transverse direction shall be corrected with diamond grinding per paragraph 401-4.15 or by removing and replacing full depth of surface course. Each measurement shall be recorded and a copy of the data shall be furnished to the ENGINEER at the end of each days testing.

(b) Longitudinal Measurements. Longitudinal measurements will be taken for each lot placed. Longitudinal tests will be parallel to the centerline of paving; at the center of paving lanes when widths of paving lanes are less than 20 feet; and at the third points of paving lanes when widths of paving lanes are 20 ft or greater.

(i) Longitudinal Short Sections. Longitudinal Short Sections are when the longitudinal lot length is less than 200 feet. When approved by the ENGINEER, the first and last 15 feet of the lot can also be considered as short sections for smoothness. The finished surface shall not vary more than 1/4 inch when evaluated with a 12-foot straightedge. Smoothness readings will not be made across grade changes or cross slope transitions; at these transition areas, the straightedge position shall be adjusted to measure surface smoothness and not design grade or cross slope transitions. Testing shall be continuous across all joints, starting with one-half the length of the straightedge at the edge of pavement section being tested and then moved ahead one-half the length of the straightedge for each successive measurement. The amount of surface

irregularity shall be determined by placing the freestanding (unleveled) straightedge on the pavement surface and allowing it to rest upon the two highest spots covered by its length, and measuring the maximum gap between the straightedge and the pavement surface in the area between these two high points. Deviations on final surface course greater than 1/4 inch in longitudinal direction will be corrected with diamond grinding per paragraph 401-4.15 or by removing and replacing full depth of surface course. Grinding will be tapered in all directions to provide smooth transitions to areas not requiring grinding. The area corrected by grinding should not exceed 10% of the total area and these areas shall be retested after grinding.

(5) Grade. Grade shall be evaluated on the first day of placement and then as a minimum, every day to allow adjustments to paving operations if measurements do not meet specification requirements. The Contractor must submit the survey data to the ENGINEER by the following day after measurements have been taken. The finished surface of the pavement shall not vary from the gradeline elevations and cross-sections shown on the plans by more than 1/2 inch. The finished grade of each lot will be determined by running levels at intervals of 50 feet or less longitudinally and all breaks in grade transversely (not to exceed 50 feet) to determine the elevation of the completed pavement. The Contractor shall pay the cost of surveying of the level runs that shall be performed by a licensed surveyor. The documentation, stamped and signed by a licensed surveyor, shall be provided by the Contractor to the ENGINEER. The lot size shall be 2,000 square yards. When more than 15% of all the measurements within a lot are outside the specified tolerance, or if any one shot within the lot deviates 3/4 inch or more from planned grade, the Contractor shall remove the deficient area to the depth of the final course plus 1/2 inch of pavement and replace with new material. Skin patching shall not be permitted. Isolated high points may be ground off provided the course thickness complies with the thickness specified on the plans. The surface of the ground pavement shall have a texture consisting of grooves between 0.090 and 0.130 inches wide. The peaks and ridges shall be approximately 1/32 inch higher than the bottom of the grooves. The pavement shall be left in a clean condition. The removal of all of the slurry resulting from the grinding operation shall be continuous The grinding operation should be controlled so the residue from the operation does not flow across other lanes of pavement. High point grinding will be limited to 15 square yards. Areas in excess of 15 square yards will require removal and replacement of the pavement in accordance with the limitations noted above. The Contractor shall apply a surface treatment per P-608 to all areas that have been subject

to grinding.

c. Percentage of material within specification limits (PWL). The PWL shall be determined in accordance with procedures specified in Section 110 of the General Provisions. The specification tolerance limits (L) for lower and (U) for upper are contained in Table 5.

Table 5. Gyratory Acceptance Limits for Air Voids and Density

TEST PROPERTY		
Number of Compactor Gyrations	75 gyrations	
	Specification	
	L	U
Air Voids Total Mix (%)	2	5
Mat Density (%)	96.3	101.3
Joint Density (%)	93.3	- -

d. Outliers. All individual tests for mat density and air voids shall be checked for outliers (test criterion) in accordance with ASTM E 178, at a significance level of 5%. Outliers shall be discarded, and the PWL shall be determined using the remaining test values.The criteria in Table 5 is based on production processes which have a variability with the following standard deviations: Surface Course Mat Density (%), 1.30; Joint Density (%), 2.1.

The Contractor should note that (1) 90 PWL is achieved when consistently producing a surface course with an average mat density of at least 98% with 1.30% or less variability and (2) 90 PWL is achieved when consistently producing joints with an average joint density of at least 96% with 2.1% or less variability.

401-5.3 Resampling Pavement for Mat Density.

a. General. Resampling of a lot of pavement will only be allowed for mat density, and then, only if the Contractor requests same, in writing, within 48 hours after receiving the written test results from the ENGINEER. A retest will consist of all the sampling and testing procedures contained in paragraphs 401-5.1b and 401-5.2b(1). Only one resampling per lot will be

permitted.

(1) A redefined PWL shall be calculated for the resampled lot. The number of tests used to calculate the redefined PWL shall include the initial tests made for that lot plus the retests.

(2) The cost for resampling and retesting shall be borne by the Contractor.

b. Payment for resampled lots. The redefined PWL for a resampled lot shall be used to calculate the payment for that lot in accordance with Table 6.

c. Outliers. Check for outliers in accordance with ASTM E 178, at a significance level of 5%.

CONTRACTOR QUALITY CONTROL

401-6.1 General. The Contractor shall develop a Quality Control Program in accordance with Section 100 of the General Provisions. The program shall address all elements that affect the quality of the pavement including, but not limited to:

a. Mix design
b. Aggregate grading
c. Quality of materials
d. Stockpile management
e. Proportioning
f. Mixing and transportation
g. Placing and finishing
h. Joints
i. Compaction
j. Surface smoothness
k. Personnel
l. Laydown plan

The Contractor shall perform quality control sampling, testing, and inspection during all phases of the work and shall perform them at a rate sufficient to ensure that the work conforms to the contract requirements, and at minimum test frequencies required by paragraph 401-6.3 and Section 100 of the General Provisions. As a part of the process for approving the Contractor's plan, the ENGINEER may require the Contractor's technician to perform testing of samples to demonstrate an acceptable level of performance.

No partial payment will be made for materials that are subject to specific quality control requirements without an approved plan.

401-6.2 Contractor Testing Laboratory. The lab shall meet the requirements of ASTM D 3666 including all necessary equipment, materials, and current reference standards to comply with the specifications.

401-6.3 Quality Control Testing. The Contractor shall perform all quality control tests necessary to control the production and construction processes applicable to these specifications and as set forth in the approved Quality Control Program. The testing program shall include, but not necessarily be limited to, tests for the control of asphalt content, aggregate gradation, temperatures, aggregate moisture, field compaction, and surface smoothness. A Quality Control Testing Plan shall be developed as part of the Quality Control Program.

a. Asphalt Content. A minimum of two asphalt content tests shall be performed per lot in accordance with ASTM D6307 or ASTM D2172 if the correction factor in ASTM D6307 is greater than 1.0. The asphalt content for the lot will be determined by averaging the test results.

b. Gradation. Aggregate gradations shall be determined a minimum of twice per lot from mechanical analysis of extracted aggregate in accordance with ASTM D5444, ASTM C136, and ASTM C117.

c. Moisture Content of Aggregate. The moisture content of aggregate used for production shall be determined a minimum of once per lot in accordance with ASTM C566.

d. d. Moisture Content of HMA. The moisture content shall be determined once per lot in accordance with ASTM D1461.

e. Temperatures. Temperatures shall be checked, at least four times per lot, at necessary locations to determine the temperatures of the dryer, the asphalt binder in the storage tank, the HMA at the plant, and the HMA at the job site.

f. In-Place Density Monitoring. The Contractor shall conduct any necessary testing to ensure that the specified density is being achieved. A nuclear gauge may be used to monitor the pavement density in accordance with ASTM D2950.

g. Additional Testing. Any additional testing that the Contractor deems necessary to control the process may be performed at the Contractor's option.

h. Monitoring. The ENGINEER reserves the right to monitor any or all of the above testing.

401-6.4 Sampling. When directed by the ENGINEER, the Contractor shall sample

and test any material that appears inconsistent with similar material being sampled, unless such material is voluntarily removed and replaced or deficiencies corrected by the Contractor. All sampling shall be in accordance with standard procedures specified.

401-6.5 Control Charts. The Contractor shall maintain linear control charts both for individual measurements and range (that is, difference between highest and lowest measurements) for aggregate gradation, asphalt content, and VMA. The VMA for each sublot will be calculated and monitored by the Quality Control laboratory.

Control charts shall be posted in a location satisfactory to the ENGINEER and shall be kept current. As a minimum, the control charts shall identify the project number, the contract item number, the test number, each test parameter, the Action and Suspension Limits applicable to each test parameter, and the Contractor's test results. The Contractor shall use the control charts as part of a process control system for identifying potential problems and assignable causes before they occur. If the Contractor's projected data during production indicates a problem and the Contractor is not taking satisfactory corrective action, the ENGINEER may suspend production or acceptance of the material.

a. Individual Measurements. Control charts for individual measurements shall be established to maintain process control within tolerance for aggregate gradation, asphalt content, and VMA. The control charts shall use the job mix formula target values as indicators of central tendency for the following test parameters with associated Action and Suspension Limits:

Control Chart Limits For Individual Measurements		
Sieve	**Action Limit**	**Suspension Limit**
3/4 inch	±6%	±9%
1/2 inch	±6%	±9%
3/8 inch	±6%	±9%
No. 4	±6%	±9%
No. 16	±5%	±7.5%
No. 50	±3%	±4.5%
No. 200	±2%	±3%
Asphalt Content	±0.45%	±0.70%
VMA	-1.00%	-1.50%

b. Range. Control charts for range shall be established to control process variability for the test parameters and Suspension Limits listed below. The

range shall be computed for each lot as the difference between the two test results for each control parameter. The Suspension Limits specified below are based on a sample size of n = 2. Should the Contractor elect to perform more than two tests per lot, the Suspension Limits shall be adjusted by multiplying the Suspension Limit by 1.18 for n = 3 and by 1.27 for n = 4.

Control Chart Limits Based On Range (Based On n = 2)	
Sieve	**Suspension Limit**
1/2 inch	11%
3/8 inch	11%
No. 4	11%
No. 16	9%
No. 50	6%
No. 200	3.5%
Asphalt Content	0.8%

c. Corrective Action. The Contractor Quality Control Program shall indicate that appropriate action shall be taken when the process is believed to be out of tolerance. The Plan shall contain sets of rules to gauge when a process is out of control and detail what action will be taken to bring the process into control. As a minimum, a process shall be deemed out of control and production stopped and corrective action taken, if:

(1) One point falls outside the Suspension Limit line for individual measurements or range; or

(2) Two points in a row fall outside the Action Limit line for individual measurements.

401-6.6 Quality Control Reports. The Contractor shall maintain records and shall submit reports of quality control activities daily, in accordance with the Contractor Quality Control Program described in General Provisions, Section 100.

METHOD OF MEASUREMENT

401-7.1 Measurement. HMA shall be measured by the number of tons of HMA used in the accepted work. Recorded batch weights or truck scale weights will be used to determine the basis for the tonnage.

BASIS OF PAYMENT

401-8.1 Payment. Payment for a lot of HMA meeting all acceptance criteria as

specified in paragraph 401-5.2 shall be made based on results of tests for mat density and air voids. Payment for acceptable lots shall be adjusted according to paragraph 401-8.1a for mat density and air voids subject to the limitation that:

a. The total project payment for plant mix bituminous concrete pavement shall not exceed 100 percent of the product of the contract unit price and the total number of tons of HMA used in the accepted work (See Note 1 under Table 6).

b. The price shall be compensation for furnishing all materials, for all preparation, mixing, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

c. Basis of Adjusted Payment. The pay factor for each individual lot shall be calculated in accordance with Table 6. A pay factor shall be calculated for both mat density and air voids. The lot pay factor shall be the higher of the two values when calculations for both mat density and air voids are 100% or higher. The lot pay factor shall be the product of the two values when only one of the calculations for either mat density or air voids is 100% or higher. The lot pay factor shall be the lower of the two values when calculations for both mat density and air voids are less than 100%. If PWL for joint density is less than 71 percent then the lot pay factor shall be reduced by 5% but be no higher than 95%.

For each lot accepted, the adjusted contract unit price shall be the product of the lot pay factor for the lot and the contract unit price. Payment shall be subject to the total project payment limitation specified in paragraph 401-8.1. Payment in excess of 100% for accepted lots of HMA shall be used to offset payment for accepted lots of bituminous concrete pavement that achieve a lot pay factor less than 100%.

Table 6. Price Adjustment Schedule[1]

Percentage of Material Within Specification Limits (PWL)	Lot Pay Factor (Percent of Contract Unit Price)
96 – 100	106
90 – 95	PWL + 10
75 – 89	0.5 PWL + 55
55 – 74	1.4 PWL – 12
Below 55	Reject [2]

[1] Although it is theoretically possible to achieve a pay factor of 106% for each lot, actual payment above 100% shall be subject to the total project payment limitation specified in paragraph 401-8.1.

[2] The lot shall be removed and replaced. However, the ENGINEER may

decide to allow the rejected lot to remain. In that case, if the ENGINEER and Contractor agree in writing that the lot shall not be removed, it shall be paid for at 50% of the contract unit price and the total project payment shall be reduced by the amount withheld for the rejected lot.

401-8.1.1. Payment. Payment will be made under:

Item P-401-8.1.1 Bituminous Surface Course - per Ton

TESTING REQUIREMENTS

ASTM C29	Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate
ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C117	Standard Test Method for Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C127	Standard Test Method for Density, Relative Density (Specific Gravity) and Absorption of Coarse Aggregate
ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C183	Standard Practice for Sampling and the Amount of Testing of Hydraulic Cement
ASTM C566	Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying
ASTM D75	Standard Practice for Sampling Aggregates
ASTM D979	Standard Practice for Sampling Bituminous Paving Mixtures
ASTM D1073	Standard Specification for Fine Aggregate for Bituminous Paving Mixtures
ASTM D2172	Standard Test Method for Quantitative Extraction of

	Bitumen from Bituminous Paving Mixtures
ASTM D1461	Standard Test Method for Moisture or Volatile Distillates in Bituminous Paving Mixtures
ASTM D2041	Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM D2489	Standard Practice for Estimating Degree of Particle Coating of Bituminous-Aggregate Mixtures
ASTM D2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
ASTM D2950	Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods
ASTM D3203	Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
ASTM D4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D4867	Standard Test Method for Effect of Moisture on Asphalt Concrete Paving Mixtures
ASTM D5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate

ASTM D6084	Standard Test Method for Elastic Recovery of Bituminous Materials by Ductilometer
ASTM D6307	Standard Test Method for Asphalt Content of Hot Mix Asphalt by Ignition Method
ASTM D6926	Standard Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
ASTM D6925	Standard Test Method for Preparation and Determination of the Relative Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor
ASTM E11	Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves
ASTM E178	Standard Practice for Dealing with Outlying Observations
ASTM E1274	Standard Test Method for Measuring Pavement Roughness Using a Profilograph
AASHTO T030	Standard Method of Test for Mechanical Analysis of Extracted Aggregate
AASHTO T110	Standard Method of Test for Moisture or Volatile Distillates in Hot Mix Asphalt (HMA)
AASHTO T275	Standard Method of Test for Bulk Specific Gravity (Gmb) of Compacted Hot Mix Asphalt (HMA) Using Paraffin-Coated Specimens
AASHTO M156	Standard Specification for Requirements for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures.
AASHTO T329	Standard Method of Test for Moisture Content of Hot Mix Asphalt (HMA) by Oven Method
Asphalt Institute Handbook MS-26,	Asphalt Binder
Asphalt Institute MS-2	Mix Design Manual, 7th Edition

MATERIAL REQUIREMENTS

ASTM D242	Standard Specification for Mineral Filler for Bituminous Paving Mixtures
ASTM D946	Standard Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction
ASTM D3381	Standard Specification for Viscosity-Graded Asphalt Cement for Use in Pavement Construction
ASTM D4552	Standard Practice for Classifying Hot-Mix Recycling Agents
ASTM D6373	Standard Specification for Performance Graded Asphalt Binder

END OF ITEM P-401

ITEM P-601

FUEL-RESISTANT HOT MIX ASPHALT (HMA) PAVEMENT

DESCRIPTION

601-1.1 This item shall consist of surface courses composed of mineral aggregate, fuel-resistant asphalt binder, and additives mixed in a central mixing plant and placed as a hot mix asphalt pavement in accordance with these specifications and shall conform to the lines, grades, thicknesses, and typical cross-sections shown on the plans. This mix is to be used only as a surface course. The purpose of this fuel-resistant HMA is to provide a fuel-resistant surface where pavements are subjected to fuel spills. The minimum course thickness shall be one inch.

MATERIALS

601-2.1 **Aggregate**. Aggregates shall consist of crushed stone or crushed gravel with or without natural sand or other inert finely divided mineral aggregate. The portion of combined materials retained on the No. 4 sieve is coarse aggregate. The portion of combined materials passing the No. 4 sieve and retained on the No. 200 sieve is fine aggregate, and the portion passing the No. 200 sieve is mineral filler.

a. Coarse Aggregate. Coarse aggregate shall consist of sound, tough, durable particles, free from adherent films of matter that would prevent thorough coating and bonding with the bituminous material and be free from organic matter and other deleterious substances. The percentage of wear shall not be greater than 40% when tested in accordance with ASTM C131. The sodium sulfate soundness loss shall not exceed 10%, or the magnesium sulfate soundness loss shall not exceed 13%, after five cycles, when tested in accordance with ASTM C88.

Aggregate shall contain at least 70% by weight of individual pieces having two or more fractured faces and 85% by weight having at least one fractured face. The area of each face shall be equal to at least 75% of the smallest midsection area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces. Fractured faces shall be achieved by crushing.

The aggregate shall not contain more than a total of 8%, by weight, of flat particles, elongated particles, and flat and elongated particles, when tested in accordance with ASTM D4791 with a value of 5:1.

b. Fine Aggregate. Fine aggregate shall consist of clean, sound, durable,

angular shaped particles produced by crushing stone, slag, or gravel that meets the requirements for wear and soundness specified for coarse aggregate. The aggregate particles shall be free from coatings of clay, silt, or other objectionable matter and shall contain no clay balls. The fine aggregate, including any blended material for the fine aggregate, shall have a plasticity index of not more than six (6) and a liquid limit of not more than 25 when tested in accordance with ASTM D4318. Natural (non-manufactured) sand may be used to obtain the gradation of the aggregate blend or to improve the workability of the mix. The amount of sand to be added will be adjusted to produce mixtures conforming to requirements of this specification. The fine aggregates shall not contain more than 20% natural sand by weight of total aggregates.

The aggregate shall have sand equivalent values of 35 or greater when tested in accordance with ASTM D2419.

c. Sampling. ASTM D 75 shall be used in sampling coarse and fine aggregate, and ASTM C183 shall be used in sampling mineral filler.

601-2.2 Mineral Filler. If filler, in addition to that naturally present in the aggregate, is necessary, it shall meet the requirements of ASTM D242.

601-2.3 Asphalt Binder. Asphalt binder shall conform to the following requirements of ASTM D6373 for performance grade (PG) 82-22 with the changes annotated below:

- The original asphalt binder shall be tested according to ASTM D6084. Elastic Recovery at 25°C and shall be a minimum of 85%.

- The original asphalt binder shall be tested according to ASTM D7173 and meet the maximum temperature difference of 40°F when using the ASTM D36 Ring-and-Ball apparatus.

- The HMA specimens prepared with the PG 82-22 asphalt binder must also meet the fuel resistance requirements in Table 1 when tested in accordance with paragraph 601-3.3. After passing the requirements of Table 1, the grade of the asphalt binder shall be identified as PG 82-22FR.

The Contractor shall furnish vendor's certified test reports for each lot of bituminous material shipped to the project. The vendor's certified test report for the bituminous material can be used for acceptance or tested independently by the ENGINEER.

601-2.4 Preliminary Material Acceptance. Prior to delivery of materials to the job site, the Contractor shall submit certified test reports to the ENGINEER for the

following materials:

a. **Coarse Aggregate.**
   (1) Percent of wear.
   (2) Soundness.
   (3) Unit weight of slag.
b. **Fine Aggregate.**
   (1) Liquid limit.
   (2) Plasticity index.
   (3) Sand equivalent.
c. **Mineral Filler.**
d. **Bituminous Material.** The certification(s) shall show the appropriate ASTM test(s) for each material, the test results, and a statement that the material meets the specification requirement.

The ENGINEER may request samples for testing, prior to and during production, to verify the quality of the materials and to ensure conformance with the applicable specifications.

COMPOSITION

601-3.1 Composition of Mixture. The bituminous plant mix shall be composed of a mixture of well-graded aggregate, filler and anti-strip agent if required, and bituminous material.

The several aggregate fractions shall be sized, handled in separate size groups, and combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF).

601-3.2 Job Mix Formula (JMF). No bituminous mixture for payment shall be produced until a job mix formula has been approved in writing by the ENGINEER. The bituminous mixture shall be designed using procedures contained in the Asphalt Institute MS-2 Mix Design Manual, 7th Edition.

The design criteria in Table 1 are target values necessary to meet the acceptance requirements contained in paragraph 601-5.2b. The criteria are based on a production process which has a material variability with the following standard deviations:

Stability (lbs) = 270
Air Voids (%) = 0.65

If material variability exceeds the standard deviations indicated, the job mix formula and subsequent production targets shall be based on stability greater than shown in Table 1, and the air voids shall be targeted close to the mid-range of the criteria in order to meet the acceptance requirements.

Table 1. Marshall Design Criteria

Test Properties	All Aircraft
Number of blows	50
Stability, lbs – minimum	2150
Air Voids (%)[1]	2.5 ±0.2
% voids in mineral aggregate (VMA) – minimum	14
% weight loss by fuel immersion – maximum [2]	2.5

[1] If the water absorption of the combined aggregates in the mix exceeds 1.7% (ASTM C127 and ASTM C128) then the mix must be short term aged in accordance with American Association of State Highway and Transportation Officials (AASHTO) PP-2 – Section 7.2. The short term aged material will then be used for the Marshall specimens and the maximum specific gravity test (ASTM D2041).

[2] Tested in accordance with procedures outlined in paragraph 601-3.3.

The use of hydrated lime as an anti-strip agent will be required for all hot mix asphalt produced for the project. The application rate of hydrated lime shall be a minimum of 1% by weight of the mix. The Contractor shall submit test results indicating the amount of anti-strip agent necessary to have a minimum Tensile Strength Ratio (TSR) value of 80 after five (5) cycles with freeze and thaw tests in accordance with ASTM D4867 or AASHTO T283. The anti-stripping agent will be provided by the Contractor at no additional cost.

The job mix formula shall be submitted in writing by the Contractor to the ENGINEER at least 14 days prior to the start of paving operations for the test section, paragraph 601-3.5, and shall include as a minimum:

a. Percent passing each sieve
b. Percent of asphalt cement.
c. Asphalt grade.
d. Number of blows of hammer compaction per side of molded specimen.
e. Laboratory mixing temperature.
f. Laboratory Compaction temperature.
g. Recommended range of temperature for field mixing and compaction.
h. Plot of the combined gradation on the 0.45 power gradation curve.
i. Graphical plots of stability, flow, air voids, voids in the mineral aggregate, and unit weight versus asphalt content.
j. Percent natural sand.
k. Percent fractured faces.
l. Percent by weight of flat particles, elongated particles, and flat and

elongated particles.

m. Tensile Strength Ratio (TSR).

n. Anti-strip agent (hydrated lime).

o. Date the job mix formula was developed.

The Contractor shall submit to the ENGINEER the results of verification testing of three (3) asphalt samples prepared at the optimum asphalt content. The average of the results of this testing shall indicate conformance with the job mix formula requirements specified in Tables 1 and 2.

When the project requires asphalt mixtures of differing aggregate gradations, a separate job mix formula and the results of job mix formula verification testing must be submitted for each mix.

The job mix formula for each mixture shall be in effect until a modification is approved in writing by the ENGINEER. Should a change in sources of materials be made, a new job mix formula must be approved by the ENGINEER before the new material is used.

The mineral aggregate shall be of such size that the percentage composition by weight, as determined by laboratory screens, will conform to the gradation or gradations specified in Table 2 when tested in accordance with ASTM C136 and ASTM C117.

The gradations in Table 2 represent the limits which shall determine the suitability of aggregate for use from the sources of supply. The aggregate, as selected (and used in the JMF), shall have a gradation within the limits designated in Table 2 and shall not vary from the low limit on one sieve to the high limit on the adjacent sieve, or vice versa, but shall be well graded from coarse to fine.

Deviations from the final approved mix design for bitumen content and gradation of aggregates shall be within the action limits for individual measurements as specified in paragraph 601-6.5a. The limits still will apply if they fall outside the master grading band in Table 2. The maximum size aggregate used shall not be more than one-half of the thickness of the course being constructed.

Table 2. Aggregate Bituminous Pavement

Sieve Size	12.5 mm mix* % passing by weight
1/2 inch	100
3/8 inch	79-99
No. 4	58-78
No. 8	39-59

Table 2. Aggregate Bituminous Pavement

Sieve Size	12.5 mm mix* % passing by weight
No. 16	26-46
No. 30	19-35
No. 50	12-24
No. 100	7-17
No. 200	3-6
Asphalt Percent	
Stone or gravel	5.5-8.0

*This mix is to be used only as a surface course. The minimum coarse thickness shall be one inch and the maximum coarse thickness shall not exceed 2 inches.

The aggregate gradations shown are based on aggregates of uniform specific gravity. The percentages passing the various sieves shall be corrected when aggregates of varying specific gravities are used, as indicated in the Asphalt Institute MS-2 Mix Design Manual, 7th Edition.

601-3.3 Testing Requirement for HMA Resistance to Fuel. Procedures for testing HMA resistance to fuel shall be as follows:

a. Prepare three test specimens in accordance with the Mix Design requirements at optimum binder content and 2.5 ±0.7% air voids.

b. Determine the percent air voids in each specimen, if any do not meet the requirements above discard and replace them. Dry the specimens under a fan at room temperature 68°F - 80°F for a minimum of 24 hours.

c. Totally immerse the sample in kerosene[1] at room temperature 68°F - 80°F for 2.0 minutes. (Suspending the sample with metal insect screen in a one gallon (4 liters) paint can has been found to be satisfactory.)

d. After submersing for 2.0 minutes ±30 sec, remove the sample and immediately surface dry it with a clean paper towel. Then immediately determine the weight in air to the nearest 0.1 grams. Report this as weight "A" (weight before).

e. Resubmerse the sample in kerosene for 24 hours.

f. After 24 hours ±10 minutes carefully remove the sample from the kerosene and suspension container and place it on an absorptive cloth or

[1] Kerosene shall meet the requirements of Federal Specification VV-K-211.

paper towel. Dry the specimen under a fan at room temperature for 24 hours.

g. After drying for 24 hours ± 10 minutes weigh the sample in air to the nearest 0.1 grams. Report this as weight "B" (weight after immersion).

h. Calculations:

% of weight loss by fuel immersion = (A – B / A) × 100
Where: A = Weight before
B = Weight after

Note: Plant production tolerances for air voids are 2.5% ± 0.7% and flow requirements for this material are waived.

601-3.4 Recycled Asphalt Concrete. No reclaimed asphalt pavement (RAP) shall be permitted in this mix.

601-3.5 Test Section. Prior to full production, the Contractor shall prepare and place a quantity of bituminous mixture according to the job mix formula. The amount of mixture should be sufficient to construct a test section 300 feet long and 20 feet (minimum) wide placed in two lanes, with a longitudinal cold joint, and shall be of the same depth specified for the construction of the course which it represents. A cold joint is an exposed construction joint at least four (4) hours old or whose mat has cooled to less than 160°F. The underlying grade or pavement structure upon which the test section is to be constructed shall be the same as the remainder of the course represented by the test section. The equipment used in construction of the test section shall be the same type and weight to be used on the remainder of the course represented by the test section.

Three random samples shall be taken at the plant and tested for stability and air voids in accordance with paragraph 601-5.1a(2). Two random samples of mixture shall be taken at the plant and tested for aggregate gradation and asphalt content in accordance with paragraphs 601-6.3a and 3b and evaluated in accordance with paragraphs 601-6.5a and 5b. Three randomly selected cores shall be taken from the finished pavement mat, and three from the longitudinal joint, and tested in accordance with paragraph 601-5.1b(4). Random sampling shall be in accordance with procedures contained in ASTM D3665.

Mat density and air voids shall be evaluated in accordance with paragraph 601-5.2b(1). Stability shall be evaluated in accordance with paragraph 601-5.2b(2).

Joint density shall be evaluated in accordance with paragraph 601-5.2b(3).

Voids in the mineral aggregate (VMA), for each plant sample, shall be computed in accordance with procedures contained in Asphalt Institute MS-2 Mix Design Manual, 7th Edition. The test section shall be considered acceptable if (1) stability, mat density, air voids, and joint density are 90% or more within limits, (2) gradation and asphalt content are within the action limits specified in paragraph 601-6.5a, and (3) the voids in the mineral aggregate is in accordance with Table 1, paragraph 601-3.2.

If the initial test section should prove to be unacceptable, the necessary adjustments to the job mix formula, plant operation, placing procedures, and/or rolling procedures shall be made. A second test section shall then be placed. If the second test section also does not meet specification requirements, both sections shall be removed at the Contractor's expense.

Additional test sections, as required, shall be constructed and evaluated for conformance to the specifications. Any additional sections that are not acceptable shall be removed at the Contractor's expense. Full production shall not begin until a satisfactory section has been constructed and accepted by the ENGINEER. The initial test section, whether acceptable or unacceptable, and any subsequent section that meets specification requirements shall be paid for in accordance with paragraph 601-8.1.

Job mix control testing shall be performed by the Contractor at the start of plant production and in conjunction with the calibration of the plant for the job mix formula. It should be recognized that the aggregates produced by the plant may not satisfy the gradation requirements or produce a mix that exactly meets the JMF. In those instances, it will be necessary to reevaluate and redesign the mix using plant-produced aggregates. Specimens should be prepared and the optimum bitumen content determined in the same manner as for the original design tests.

Contractor will not be allowed to place the test section until the Contractor Quality Control Program, showing conformance with the requirements of paragraph 601-6.1, has been approved, in writing, by the ENGINEER.

601-3.6 Job Mix Formula (JMF) Laboratory. The Contractor's laboratory used to develop the job mix formula shall meet the requirements of ASTM D 3666. The laboratory accreditation must be current and listed on the accrediting authority's website. All test methods required for developing the JMF must be listed on the lab accreditation. A copy of the laboratory's current accreditation and accredited test methods shall be submitted to the ENGINEER prior to start of construction.

CONSTRUCTION METHODS

601-4.1 Weather Limitations. The bituminous mixture shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than specified in Table 3. The temperature requirements may be waived by the ENGINEER, if requested; however, all other requirements including compaction shall be met.

Table 3. Base Temperature Limitations

Mat Thickness	Base Temperature
	Degrees F
Greater than 1 inch but less than 3 inch	45
1 inch or less	50

601-4.2 Bituminous Mixing Plant. Plants used for the preparation of bituminous mixtures shall conform to the requirements of ASTM D2995 with the following changes:

a. Requirements for all plants.

(1) Truck Scales. The bituminous mixture shall be weighed on approved scales furnished by the Contractor, or on certified public scales at the Contractor's expense. Scales shall be inspected and sealed as often as the ENGINEER deems necessary to assure their accuracy. Scales shall conform to the requirements of the General Provisions, subsection 90-01.

In lieu of scales, and as approved by the ENGINEER, asphalt mixture weights may be determined by the use of an electronic weighing system equipped with an automatic printer that weighs the total paving mixture. Contractor must furnish calibration certification of the weighing system prior to mix production and as often thereafter as requested by the ENGINEER.

(2) Testing Facilities. The Contractor shall provide laboratory facilities at the plant for the use of the ENGINEER's acceptance testing and the Contractor's quality control testing in accordance with paragraph 601-6.2.

(3) Inspection of Plant. The ENGINEER, or ENGINEER's authorized representative, shall have access, at all times, to all areas of the plant for checking adequacy of equipment; inspecting operation of the plant: verifying weights, proportions, and material properties; and checking the temperatures maintained in the preparation of the mixtures.

(4) Storage Bins and Surge Bins. Use of surge and storage bins for temporary storage of hot bituminous mixtures will be permitted as follows:

(a) The bituminous mixture may be stored in surge bins for a period of time not to exceed three (3) hours.

(b) The bituminous mixture may be stored in insulated storage bins for a period of time not to exceed eight (8) hours.

The bins shall be such that mix drawn from them meets the same requirements as mix loaded directly into trucks.

If the ENGINEER determines that there is an excessive amount of heat loss, segregation, or oxidation of the mixture due to temporary storage, no temporary storage will be allowed.

601-4.3 Hauling Equipment. Trucks used for hauling bituminous mixtures shall have tight, clean, and smooth metal beds. To prevent the mixture from adhering to them, the truck beds shall be lightly coated with a minimum amount of paraffin oil, lime solution, or other approved material. Petroleum products shall not be used for coating truck beds. Each truck shall have a suitable cover to protect the mixture from adverse weather. When necessary, to ensure that the mixture will be delivered to the site at the specified temperature, truck beds shall be insulated or heated and covers shall be securely fastened.

601-4.4 Bituminous Pavers. Bituminous pavers shall be self-propelled with an activated heated screed, capable of spreading and finishing courses of bituminous plant mix material that will meet the specified thickness, smoothness, and grade. The paver shall have sufficient power to propel itself and the hauling equipment without adversely affecting the finished surface.

The paver shall have a receiving hopper of sufficient capacity to permit a uniform spreading operation. The hopper shall be equipped with a distribution system to place the mixture uniformly in front of the screed without segregation. The screed shall effectively produce a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture.

If, during construction, it is found that the spreading and finishing equipment in use leaves tracks or indented areas, or produces other blemishes in the pavement that are not satisfactorily corrected by the scheduled operations, the use of such equipment shall be discontinued and satisfactory equipment shall be provided by the Contractor.

601-4.4.1 Automatic Grade Controls. The HMA paver shall be equipped with a

control system capable of automatically maintaining the specified screed elevation. The control system shall be automatically actuated from either a reference line and/or through a system of mechanical sensors or sensor-directed mechanisms or devices that will maintain the paver screed at a predetermined transverse slope and at the proper elevation to obtain the required surface. The transverse slope controller shall be capable of maintaining the screed at the desired slope within ±0.1%.

The controls shall be capable of working in conjunction with any of the following attachments:

a. Ski-type device of not less than 30 feet in length.
b. Taut stringline (wire) set to grade.
c. Short ski or shoe.
d. Laser control.

601-4.5 Rollers. Rollers of the vibratory and/or steel wheel type shall be used. They shall be in good condition, capable of operating at slow speeds to avoid displacement of the bituminous mixture. The number, type, and weight of rollers shall be sufficient to compact the mixture to the required density while it is still in a workable condition.

All rollers shall be specifically designed and suitable for compacting hot mix bituminous concrete and shall be properly used. Rollers that impair the stability of any layer of a pavement structure or underlying soils shall not be used. Depressions in pavement surfaces caused by rollers shall be repaired by the Contractor at their own expense.

The use of equipment that causes crushing of the aggregate will not be permitted.

601-4.6 Preparation of Bituminous Material. The bituminous material shall be heated in a manner that will avoid local overheating and provide a continuous supply of the bituminous material to the mixer at a uniform temperature. The temperature of the bituminous material delivered to the mixer shall be sufficient to provide a suitable viscosity for adequate coating of the aggregate particles, but shall not exceed 350°F, unless otherwise required by the manufacturer.

601-4.7 Preparation of Mineral Aggregate. The aggregate for the mixture shall be heated and dried prior to introduction into the mixer. The maximum temperature and rate of heating shall be such that no damage occurs to the aggregates. The temperature of the aggregate and mineral filler shall not exceed 350°F when the asphalt is added. Particular care shall be taken that aggregates high in calcium or magnesium content are not damaged by overheating. The temperature shall not be lower than is required to obtain

complete coating and uniform distribution on the aggregate particles and to provide a mixture of satisfactory workability.

601-4.8 Preparation of Bituminous Mixture. The aggregates and the bituminous material shall be weighed or metered and introduced into the mixer in the amount specified by the job mix formula.

The combined materials shall be mixed until the aggregate obtains a uniform coating of bitumen and is thoroughly distributed throughout the mixture. Wet mixing time shall be the shortest time that will produce a satisfactory mixture, but not less than 25 seconds for batch plants. The wet mixing time for all plants shall be established by the Contractor, based on the procedure for determining the percentage of coated particles described in ASTM D2489, for each individual plant and for each type of aggregate used. The wet mixing time will be set to achieve 95% of coated particles. For continuous mix plants, the minimum mixing time shall be determined by dividing the weight of its contents at operating level by the weight of the mixture delivered per second by the mixer. The moisture content of all bituminous mixtures upon discharge shall not exceed 0.5%.

601-4.9 Preparation of the Underlying Surface. Immediately before placing the bituminous mixture, the underlying course shall be cleaned of all dust and debris. A prime coat or tack coat shall be applied in accordance with Item P-602 or Item P-603, if required by the contract specifications.

601-4.10 Laydown Plan, Transporting, Placing, and Finishing. Prior to the placement of the bituminous mixture, the Contractor shall prepare a laydown plan for approval by the ENGINEER. This is to minimize the number of cold joints in the pavement. The laydown plan shall include the sequence of paving laydown by stations, width of lanes, temporary ramp location(s), and laydown temperature. The laydown plan shall also include estimated time of completion for each portion of the work (i.e., milling, paving, rolling, cooling, etc.). Modifications to the laydown plan shall be approved by the ENGINEER.

The bituminous mixture shall be transported from the mixing plant to the site in vehicles conforming to the requirements of paragraph 601-4.3. Deliveries shall be scheduled so that placing and compacting of mixture is uniform with minimum stopping and starting of the paver. Hauling over freshly placed material shall not be permitted until the material has been compacted, as specified, and allowed to cool to atmospheric temperature.

The mix shall be placed and compacted at a temperature suitable for obtaining density, surface smoothness, and other specified requirements but not less than 275°F. Edges of existing bituminous pavement abutting the new work shall be saw cut and carefully removed as shown on the drawings and painted with bituminous tack coat before new material is placed against it.

Upon arrival, the mixture shall be placed to the full width by a bituminous paver. It shall be struck off in a uniform layer of such depth that, when the work is completed, it shall have the required thickness and conform to the grade and contour indicated. The speed of the paver shall be regulated to eliminate pulling and tearing of the bituminous mat. Unless otherwise permitted, placement of the mixture shall begin along the centerline of a crowned section or on the high side of areas with a one-way slope. The mixture shall be placed in consecutive adjacent strips having a minimum width of 12 feet except where edge lanes require less width to complete the area. Additional screed sections shall not be attached to widen paver to meet the minimum lane width requirements specified above unless additional auger sections are added to match. The longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least one foot; however, the joint in the surface top course shall be at the centerline of crowned pavements. Transverse joints in one course shall be offset by at least 10 feet from transverse joints in the previous course.

Transverse joints in adjacent lanes shall be offset a minimum of 10 feet.

On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the mixture may be spread and luted by hand tools. Areas of segregation in the surface course, as determined by the ENGINEER, shall be removed and replaced at the Contractor's expense. The area shall be removed by saw cutting and milling a minimum of 2 inches deep. The area to be removed and replaced shall be a minimum width of the paver and a minimum of 10 feet long.

601-4.11 Compaction of Mixture. After placing, the mixture shall be thoroughly and uniformly compacted by rolling. The surface shall be compacted as soon as possible when the mixture has attained sufficient stability so that the rolling does not cause undue displacement, cracking or shoving. The sequence of rolling operations and the type of rollers used shall be at the discretion of the Contractor. The speed of the roller shall, at all times, be sufficiently slow to avoid displacement of the hot mixture and be effective in compaction. Any displacement occurring as a result of reversing the direction of the roller, or from any other cause, shall be corrected at once.

Sufficient rollers shall be furnished to handle the output of the plant. Rolling shall continue until the surface is of uniform texture, true to grade and cross-section, and the required field density is obtained.

To prevent adhesion of the mixture to the roller, the wheels shall be equipped with a scraper and kept properly moistened but excessive water will not be permitted.

In areas not accessible to the roller, the mixture shall be thoroughly compacted with approved hand tampers.

Any mixture that becomes loose and broken, mixed with dirt, contains check-cracking, or in any way defective shall be removed and replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This work shall be done at the Contractor's expense. Skin patching shall not be allowed.

601-4.12 Joints. The formation of all joints shall be made in such a manner as to ensure a continuous bond between the courses and obtain the required density. All joints shall have the same texture as other sections of the course and meet the requirements for smoothness and grade.

The roller shall not pass over the unprotected end of the freshly laid mixture except when necessary to form a transverse joint. When necessary to form a transverse joint, it shall be made by means of placing a bulkhead or by tapering the course. The tapered edge shall be cut back to its full depth and width on a straight line to expose a vertical face prior to placing the adjacent lane. In both methods, all contact surfaces shall be given a tack coat of bituminous material before placing any fresh mixture against the joint.

Longitudinal joints which are irregular, damaged, uncompacted, or otherwise defective shall be cut back to expose a clean, sound surface for the full depth of the course. All contact surfaces shall be cleaned and dry and given a tack coat of bituminous material prior to placing any fresh mixture against the joint. The cost of this work and tack coat shall be considered incidental to the cost of the bituminous course.

MATERIAL ACCEPTANCE

601-5.1 Acceptance Sampling and Testing. Unless otherwise specified, all acceptance sampling and testing necessary to determine conformance with the requirements specified in this section will be performed by the ENGINEER at no cost to the Contractor except that coring as required in this section shall be completed and paid for by the Contractor. Testing organizations performing these tests shall meet the requirements of ASTM D 3666. All equipment in Contractor furnished laboratories shall be calibrated by an independent testing organization prior to the start of operations at the Contractor's expense.

a. Plant-Produced Material. Plant-produced material shall be tested for stability and air voids on a lot basis. Sampling shall be from material deposited into trucks at the plant or from trucks at the job site. Samples shall be taken in accordance with ASTM D 979. A standard lot shall be equal to one day's production or 2000 tons whichever is smaller. If the

day's production is expected to exceed 2 000 tons, but less than 4 000 tons, the lot size shall be 1 /2 day's production. If the day's production exceeds 40 00 tons, the lot size shall be an equal-sized fraction of the day's production but shall not exceed 2000 tons.

Where more than one plant is simultaneously producing material for the job, the lot sizes shall apply separately for each plant.

(1) Sampling. Each lot will consist of four equal sublots. Sufficient material for preparation of test specimens for all testing will be sampled by the ENGINEER on a random basis, in accordance with the procedures contained in ASTM D 3665. One set of laboratory compacted specimens will be prepared for each sublot in accordance with ASTM D6926, at the number of blows required by paragraph 601-3.2, Table 1. Each set of laboratory compacted specimens will consist of three test portions prepared from the same sample increment.

The sample of bituminous mixture may be put in a covered metal tin and placed in an oven for not less than 30 minutes or more than 60 minutes to stabilize to compaction temperature. The compaction temperature of the specimens shall be as specified in the job mix formula. When absorptive aggregates are used, the hold times shall be increased to not less than 60 minutes and not more than 90 minutes.

(2) Testing. Sample specimens shall be tested for stability in accordance with ASTM D6927. Air voids will be determined by the ENGINEER in accordance with ASTM D3203. Prior to testing, the bulk specific gravity of each test specimen shall be measured by the ENGINEER in accordance with ASTM D 2726 using the procedure for laboratory-prepared thoroughly dry specimens, for use in computing plant produced air voids.

For plant produced air voids and percent field-placed pavement density determinations, the theoretical maximum specific gravity of the mixture shall be measured for each lot in accordance with ASTM D2041. The value used in the plant produced air voids and percent field placed pavement density computations for each sublot shall be the average of a minimum of two maximum specific gravity measurements for each lot.

The stability and plant produced air voids for each sublot shall be computed by averaging the results of all test specimens representing that sublot.

(3) Acceptance. Acceptance of plant produced material for stability and air voids shall be determined by the ENGINEER in accordance with the

requirements of paragraph 601-5.2b.

b. Field Placed Material. Material placed in the field shall be tested for mat and joint density on a lot basis.

(1) Mat Density. The lot size shall be the same as that indicated in paragraph 601-5.1a and shall be divided into four equal sublots. One 6-inch diameter core of finished, compacted materials shall be taken by the Contractor from each sublot. Core locations will be determined by the ENGINEER on a random basis in accordance with procedures contained in ASTM D3665. Cores shall not be taken closer than one foot from a transverse or longitudinal joint.

(2) Joint Density. The lot size shall be the total length of longitudinal joints constructed by a lot of material as defined in paragraph 601-5.1a. The lot shall be divided into four equal sublots. One 6-inch diameter core of finished, compacted materials shall be taken by the Contractor from each sublot. Core locations will be determined by the ENGINEER on a random basis in accordance with procedures contained in ASTM D3665. All coring shall be centered on the joint.

(3) Sampling. Samples shall be neatly cut with a core drill. The cutting edge of the core drill bit shall be of hardened steel or other suitable material with diamond chips embedded in the metal cutting edge. Samples that are clearly defective, as a result of sampling, shall be discarded and another sample taken. The Contractor shall furnish all tools, labor, and materials for cutting samples, cleaning, and filling the cored pavement. Cored pavement shall be cleaned and core holes shall be filled in a manner acceptable to the ENGINEER and within one day after sampling.

(4) Testing. The bulk specific gravity of each cored sample will be measured by the ENGINEER in accordance with ASTM D2726. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each sublot sample by the maximum theoretical specific gravity for the lot, as determined in paragraph 601-5.1a(2). The maximum theoretical specific gravity used to determine the joint density at joints formed between different lots shall be the lower of the specific gravity values from the two different lots.

(5) Acceptance. Acceptance of field placed material for mat density will be determined by the ENGINEER in accordance with the requirements of paragraph 601-5.2b(1). Acceptance for joint density will be determined in accordance with the requirements of paragraph 601-5.2b(3).

c. Partial Lots - Plant Produced Material. When operational conditions cause a lot to be terminated before the specified number of tests have been made for the lot, or when the Contractor and ENGINEER agree in writing to allow overages or other minor tonnage placements to be considered as partial lots, the following procedure will be used to adjust the lot size and the number of tests for the lot.

The last batch produced where production is halted will be sampled, and its properties shall be considered as representative of the particular sublot from which it was taken. Where three sublots are produced, they shall constitute a lot. Where one or two sublots are produced, they shall be incorporated into the next lot and the total number of sublots shall be used in the acceptance plan calculation, i.e., n = 5 or n = 6, for example.

d. Partial Lots - Field Placed Material. The lot size for field placed material shall correspond to that of the plant produced material, except that in no case shall less than three (3) cored samples be obtained, i.e., n = 3.

601-5.2 Acceptance Criteria.

a. General. Acceptance will be based on the following characteristics of the bituminous mixture and completed pavement as well as the implementation of the Contractor Quality Control Program and test results:

(1) Stability
(2) Air voids
(3) Mat density
(4) Joint density
(5) Thickness
(6) Smoothness
(7) Grade

Mat density and air voids will be evaluated for acceptance in accordance with paragraph 601-5.2b(1). Stability will be evaluated for acceptance in accordance with paragraph 601-5.2b(2). Joint density will be evaluated for acceptance in accordance with paragraph 601-5.2b(3). Thickness will be evaluated by the ENGINEER for compliance in accordance with paragraph 601-5.2b(4). Acceptance for smoothness will be based on the criteria contained in paragraph 601-5.2b(5). Acceptance for grade will be based on the criteria contained in paragraph 601-5.2b(6).

The ENGINEER may at any time, not withstanding previous plant acceptance, reject and require the Contractor to dispose of any batch of bituminous mixture which is rendered unfit for use due to contamination, segregation, incomplete coating of aggregate, or improper mix

temperature. Such rejection may be based on only visual inspection or temperature measurements. In the event of such rejection, the Contractor may take a representative sample of the rejected material in the presence of the ENGINEER and, if it can be demonstrated in the laboratory, in the presence of the ENGINEER, that such material was erroneously rejected, payment will be made for the material at the contract unit price.

b. Acceptance Criteria.

(1) Mat Density and Air Voids. Acceptance of each lot of plant produced material for mat density and air voids shall be based on the percentage of material within specification limits (PWL). If the PWL of the lot equals or exceeds 90%, the lot shall be acceptable. Acceptance and payment shall be determined in accordance with paragraph 601-8.1.

(2) Stability. Acceptance of each lot of plant produced material for stability shall be based on the PWL. If the PWL of the lot equals or exceeds 90%, the lot shall be acceptable. If the PWL is less than 90%, the Contractor shall determine the reason and take corrective action. If the PWL is below 80%, the Contractor must stop production until the reason for poor stability and/or flow has been determined and adjustments to the mix are made.

(3) Joint Density. Acceptance of each lot of plant produced material for joint density shall be based on the PWL. If the PWL of the lot is equal to or exceeds 90%, the lot shall be considered acceptable. If the PWL is less than 90%, the Contractor shall evaluate the reason and act accordingly. If the PWL is less than 80%, the Contractor shall cease operations until the reason for poor compaction has been determined. If the PWL is less than 71%, the pay factor for the lot used to complete the joint shall be reduced by five (5) percentage points. This lot pay factor reduction shall be incorporated and evaluated in accordance with paragraph 601-8.1.

(4) Thickness. Thickness of each lift of surface course shall be evaluated by the ENGINEER for compliance to the requirements shown on the plans. Measurements of thickness shall be made by the ENGINEER using the cores extracted for each sublot for density measurement. The maximum allowable deficiency at any point shall not be more than 1/4 inch less than the thickness indicated for the lift. Average thickness of lift, or combined lifts, shall not be less than the indicated thickness. Where the thickness tolerances are not met, the lot or sublot shall be corrected by the Contractor at his expense by removing the deficient area and replacing with new pavement. The Contractor at his expense, may take additional cores as approved by the ENGINEER to circumscribe the deficient area.

(5) Smoothness. The finished surfaces of the pavement shall not vary more than 1/4 inch for the surface course. Each lot shall be evaluated with a 12-foot straightedge. The lot size shall be 2,000 square yards. Measurements will be made perpendicular and parallel to the centerline at distances not to exceed 50 feet. When more than 15% of all measurements within a lot exceed the specified tolerance, the Contractor shall remove the deficient area and replace with new material. Sufficient material shall be removed to allow at least one inch of asphalt concrete to be placed. Skin patching shall not be permitted. High points may be ground off.

(6) Grade. The finished surface of the pavement shall not vary from the gradeline elevations and cross-sections shown on the plans by more than 1/2 inch. The finished grade of each lot will be determined by running levels at intervals of 50 feet or less longitudinally and transversely to determine the elevation of the completed pavement. The lot size shall be 2,000 square yards. When more than 15% of all the measurements within a lot are outside the specified tolerance, the Contractor shall remove the deficient area and replace with new material. Sufficient material shall be removed to allow at least one inch of asphalt concrete to be placed. Skin patching for correcting low areas shall not be permitted. High points may be ground off.

c. Percentage of Material Within Specification Limits (PWL). The PWL shall be determined in accordance with procedures specified in Section 110 of the General Provisions. The specification tolerance limits (L) for lower and (U) for upper are contained in Table 5.

Table 5. Marshall Acceptance Limits for Stability, Air Voids, Density

Test Property	**Pavements designed for aircraft gross weights of 60,000 lbs or more or tire pressures of 100 psi or more**	
Number of blows	50	
	Specification tolerance limits	
	L	U
Stability, minimum, lbs	2150	-
Air voids total mix, %	1.5	3.5
Surface course mat	96.0	98.0
Joint density, %	92.0	-

d. Outliers. All individual tests for mat density and air voids shall be checked for outliers (test criterion) in accordance with ASTM E 178, at a significance level of 5%. Outliers shall be discarded, and the PWL shall be determined using the remaining test values.

601-5.3 Resampling Pavement for Mat Density.

a. General. Resampling of a lot of pavement will only be allowed for mat density, and then, only if the Contractor requests same, in writing, within 48 hours after receiving the written test results from the ENGINEER. A retest will consist of all the sampling and testing procedures contained in paragraphs 601-5.1b and 601-5.2b(1). Only one resampling per lot will be permitted.

(1) A redefined PWL shall be calculated for the resampled lot. The number of tests used to calculate the redefined PWL shall include the initial tests made for that lot plus the retests.

(2) The cost for resampling and retesting shall be borne by the Contractor.

b. Payment for Resampled Lots. The redefined PWL for a resampled lot shall be used to calculate the payment for that lot in accordance with Table 5.

c. Outliers. Check for outliers in accordance with ASTM E 178, at a significance level of 5%.

CONTRACTOR QUALITY CONTROL

601-6.1 General. The Contractor shall develop a Quality Control Program in accordance with Section 100 of the General Provisions. The program shall address all elements that affect the quality of the pavement including, but not limited to:

a. Mix design
b. Aggregate grading
c. Quality of materials
d. Stockpile management
e. Proportioning
f. Mixing and transportation
g. Placing and finishing
h. Joints
i. Compaction
j. Surface smoothness
k. Personnel
l. Laydown plan

The Contractor shall perform quality control sampling, testing, and inspection during all phases of the work and shall perform them at a rate sufficient to ensure that the work conforms to the contract requirements, and at minimum

test frequencies required by paragraph 601-6.3 and Section 100, General Provisions. As a part of the process for approving the Contractor's plan, the ENGINEER may require the Contractor's technician to perform testing of samples to demonstrate an acceptable level of performance.

No partial payment will be made for materials that are subject to specific quality control requirements without an approved plan.

601-6.2 Testing Laboratory. The Contractor shall provide a fully equipped asphalt laboratory located at the plant or job site. It shall be available for joint use by the Contractor for quality control testing and by the ENGINEER for acceptance testing and must have adequate equipment for the performance of the tests required by these specifications. The ENGINEER shall have priority in use of the equipment necessary for acceptance testing.

The effective working area of the laboratory shall be a minimum of 150 square feet with a ceiling height of not less than 7.5 feet. Lighting shall be adequate to illuminate all working areas. It shall be equipped with heating and air conditioning units to maintain a temperature of 70°F ±5°F.

Laboratory facilities shall be kept clean and all equipment shall be maintained in proper working condition. The ENGINEER shall be permitted unrestricted access to inspect the Contractor's laboratory facility and witness quality control activities. The ENGINEER will advise the Contractor in writing of any noted deficiencies concerning the laboratory facility, equipment, supplies, or testing personnel and procedures. When the deficiencies are serious enough to be adversely affecting test results, the incorporation of the materials into the work shall be suspended immediately and will not be permitted to resume until the deficiencies are satisfactorily corrected.

601-6.3 Quality Control Testing. The Contractor shall perform all quality control tests necessary to control the production and construction processes applicable to these specifications and as set forth in the approved Quality Control Program. The testing program shall include, but not necessarily be limited to, tests for the control of asphalt content, aggregate gradation, temperatures, aggregate moisture, field compaction, and surface smoothness. A Quality Control Testing Plan shall be developed as part of the Quality Control Program.

a. Asphalt Content. A minimum of two tests shall be performed per lot in accordance with ASTM D 6307 or ASTM D2172 for determination of asphalt content. The weight of ash portion of the test, as described in ASTM D2172, shall be determined as part of the first test performed at the beginning of plant production; and as part of every tenth test performed thereafter, for the duration of plan production. The last weight of ash value obtained shall be used in the calculation of the asphalt content for the mixture. The asphalt content for the lot will be determined by averaging

the test results.

The use of the nuclear method for determining asphalt content in accordance with ASTM D4125 is permitted, provided that it is calibrated for the specific mix being used.

b. Gradation. Aggregate gradations shall be determined a minimum of twice per lot from mechanical analysis of extracted aggregate in accordance with ASTM D5444 and ASTM C136 (Dry Sieve). When asphalt content is determined by the nuclear method, aggregate gradations shall be determined from hot bin samples on batch plants, or from the cold feed on drum mix or continuous mix plants, and tested in accordance with ASTM C136 (dry sieve) using actual batch weights to determine the combined aggregate gradation of the mixture.

c. Moisture Content of Aggregate. The moisture content of aggregate used for production shall be determined a minimum of once per lot in accordance with ASTM C566.

d. Moisture Content of Mixture. The moisture content of the mixture shall be determined once per lot in accordance with ASTM D1461.

e. Temperatures. Temperatures shall be checked, at least four times per lot, at necessary locations to determine the temperatures of the dryer, the bitumen in the storage tank, the mixture at the plant, and the mixture at the job site.

f. In-Place Density Monitoring. The Contractor shall conduct any necessary testing to ensure that the specified density is being achieved. A nuclear gauge may be used to monitor the pavement density in accordance with ASTM D2950.

g. Additional Testing. Any additional testing that the Contractor deems necessary to control the process may be performed at the Contractor's option.

h. Monitoring. The ENGINEER reserves the right to monitor any or all of the above testing.

601-6.4 Sampling. When directed by the ENGINEER, the Contractor shall sample and test any material that appears inconsistent with similar material being sampled, unless such material is voluntarily removed and replaced or deficiencies corrected by the Contractor. All sampling shall be in accordance with standard procedures specified.

601-6.5 Control Charts. The Contractor shall maintain linear control charts both for

individual measurements and range (i.e., difference between highest and lowest measurements) for aggregate gradation and asphalt content.

Control charts shall be posted in a location satisfactory to the ENGINEER and shall be kept current. As a minimum, the control charts shall identify the project number, the contract item number, the test number, each test parameter, the Action and Suspension Limits applicable to each test parameter, and the Contractor's test results. The Contractor shall use the control charts as part of a process control system for identifying potential problems and assignable causes before they occur. If the Contractor's projected data during production indicates a problem and the Contractor is not taking satisfactory corrective action, the ENGINEER may suspend production or acceptance of the material.

a. Individual Measurements. Control charts for individual measurements shall be established to maintain process control within tolerance for aggregate gradation and asphalt content. The control charts shall use the job mix formula target values as indicators of central tendency for the following test parameters with associated Action and Suspension Limits:

Control chart limits for individual measurements (based on n=2)		
Sieve	Action limit	Suspension limit
3/4 inch	0%	0%
1/2 inch	±6%	±9%
3/8 inch	±6%	±9%
No. 4	±6%	±9%
No. 16	±5%	±7.5%
No. 50	±3%	±4.5%
No. 200	±2%	±3%
Asphalt	±0.45%	±0.70%

b. Range. Control charts for range shall be established to control process variability for the test parameters and Suspension Limits listed below. The range shall be computed for each lot as the difference between the two test results for each control parameter. The Suspension Limits specified below are based on a sample size of n = 2. Should the Contractor elect to perform more than two tests per lot, the Suspension Limits shall be adjusted by multiplying the Suspension Limit by 1.18 for n = 3 and by 1.27 for n = 4.

Control chart limits based on range (based on n=2)	
Sieve	Suspension Limit

Control chart limits based on range (based on n=2)	
Sieve	Suspension Limit
1/2 inch	11%
3/8 inch	11%
No. 4	11%
No. 16	9%
No. 50	6%
No. 200	3.5%
Asphalt content %	0.8%

c. Corrective Action. The Contractor Quality Control Program shall indicate that appropriate action shall be taken when the process is believed to be out of tolerance. The Plan shall contain sets of rules to gauge when a process is out of control and detail what action will be taken to bring the process into control. As a minimum, a process shall be deemed out of control and production stopped and corrective action taken, if:

(1) one point falls outside the Suspension Limit line for individual measurements or range; or

(2) two points in a row fall outside the Action Limit line for individual measurements.

601-6.6 Quality Control Reports. The Contractor shall maintain records and shall submit reports of quality control activities daily, in accordance with the Contractor Quality Control Program described in General Provisions, Section 100.

METHOD OF MEASUREMENT

601-7.1 Measurement. Plant mix bituminous concrete pavement shall be measured by the number of tons of bituminous mixture used in the accepted work. Recorded batch weights or truck scale weights will be used to determine the basis for the tonnage.

BASIS OF PAYMENT

601-8.1 Payment. Payment for an accepted lot of bituminous concrete pavement shall be made at the contract unit price per ton for the P-601 Fuel-Resistant Bituminous Surface Course and adjusted according to paragraph 601-8.1a. The total project payment for plant mix bituminous concrete pavement shall not exceed 100% of the product of the contract unit price and the total number of tons of bituminous surface mixture used in the accepted work. This price shall be full compensation for furnishing all materials, for all preparation,

mixing, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the items.

a. Basis of Adjusted Payment. The pay factor for each individual lot shall be calculated in accordance with Table 5. A pay factor shall be calculated for both mat density and air voids. The lot pay factor shall be the higher of the two values when calculations for both mat density and air voids are 100% or higher. The lot pay factor shall be the product of the two values when only one of the calculations for either mat density or air voids is 100% or higher. The lot pay factor shall be the lower of the two values when calculations for both mat density and air voids are less than 100%.

Table 5. Price adjustment schedule

Percentage of material within the specification limit (PWL)	Percent of Contract Unit Price to be Paid
96-100	106[1]
90-95	PWL + 10
75-89 0.5	PWL + 55.0
55-74 1.4	PWL - 12.0
Below 55	Reject[2]

[1] Although it is theoretically possible to achieve a pay factor of 106% for each lot, actual payment above 100 % shall be subject to the total payment limitation specified in paragraph 601-8.1, and the total project payment limitation shall be reduced by the amount withheld for the rejected lot.

[2] The lots shall be removed and replaced. However, the ENGINEER and OWNER may decide to accept the deficient lot. In that case, if the ENGINEER and OWNER decide that the lot shall not be removed, it will be paid for at 50% of the contract price.

For each lot accepted, the adjusted contract unit price shall be the product of the lot pay factor for the lot and the contract unit price. Payment shall be subject to the total project payment limitation specified in paragraph 601-8.1. Payment in excess of 100% for accepted lots of bituminous concrete pavement shall be used to offset payment for accepted lots of bituminous concrete pavement that achieve a lot factor less than 100%.

b. Payment. Payment will be made under:

Item P-601-8.1 Fuel-Resistant Bituminous Surface Course - per Ton

TESTING REQUIREMENTS

ASTM C29 Standard Test Method for Bulk Density (“Unit Weight”)

	and Voids in Aggregate
ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C117	Standard Test Method for Materials Finer than 75-µm (No.200) Sieve in Mineral Aggregates by Washing
ASTM C127	Standard Test Method for Density, Relative Density (Specific Gravity) and Absorption of Coarse Aggregate
ASTM C128	Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate
ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C183	Standard Practice for Sampling and the Amount of Testing of Hydraulic Cement
ASTM C566	Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying
ASTM D36	Standard Test Method for Softening Point of Bitumen (Ring-and-Ball Apparatus)
ASTM D75	Standard Practice for Sampling Aggregates
ASTM D979	Standard Practice for Sampling Bituminous Paving Mixtures
ASTM D1073	Standard Specification for Fine Aggregate for Bituminous Paving Mixtures
ASTM D1461	Standard Test Method for Moisture or Volatile Distillates in Bituminous Paving Mixtures
ASTM D2041	Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures

ASTM D2172	Standard Test Method for Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM D2489	Standard Practice for Estimating Degree of Particle Coating of Bituminous-Aggregate Mixtures
ASTM D2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
ASTM D2950	Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods
ASTM D3203	Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
ASTM D4125	Standard Test Methods for Asphalt Content of Bituminous Mixtures by the Nuclear Method
ASTM D4318	Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D4867	Standard Test Method for Effect of Moisture on Asphalt Concrete Paving Mixtures
ASTM D5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
ASTM D6084	Standard Test Method for Elastic Recovery of Bituminous Materials by Ductilometer

ASTM D6926	Standard Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
ASTM D6927	Standard Test Method for Marshall Stability and Flow of Bituminous Mixtures
ASTM D6307	Standard Test Method for Asphalt Content of Hot-Mix Asphalt by Ignition Method
ASTM D7173	Standard Practice for Determining the Separation Tendency of Polymer from Polymer Modified Asphalt
ASTM E11	Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves
ASTM E178	Standard Practice for Dealing with Outlying Observations
ASTM E1274	Standard Test Method for Measuring Pavement Roughness Using a Profilograph
AASHTO T030	Standard Method of Test for Mechanical Analysis of Extracted Aggregate
AASHTO T110	Standard Method of Test for Moisture or Volatile Distillates in Hot Mix Asphalt (HMA)
AASHTO T283	Standard Method of Test for Resistance of Compacted Hot Mix Asphalt (HMA) to Moisture-Induced Damage
Asphalt Institute MS-2	Mix Design Manual, 7th Edition

MATERIAL REQUIREMENTS

ASTM D242	Standard Specification for Mineral Filler for Bituminous Paving Mixtures
ASTM D946	Standard Specification for Penetration Graded Asphalt Cement for Use in Pavement Construction
ASTM D2995	Standard Practice for Estimating Application Rate of Bituminous Distributors
ASTM D3381	Standard Specification for Viscosity-Graded Asphalt

	Cement for Use in Pavement Construction
ASTM D4552	Standard Practice for Classifying Hot-Mix Recycling Agents
ASTM D6373	Standard Specification for Performance Graded Asphalt Binder
AASHTO M320	Standard Specification for Performance-Graded Asphalt Binder
FED SPEC VV-K-211	Kerosene

END OF ITEM P-601

ITEM P-602

BITUMINOUS PRIME COAT

DESCRIPTION

602-1.1 This item shall consist of an application of bituminous material on the prepared base course in accordance with these specifications and in reasonably close conformity to the lines shown on the plans.

MATERIALS

602-2.1 Bituminous Material. The bituminous material shall be an emulsified asphalt indicated in ASTM D3628 as a bituminous application for prime coat appropriate to local conditions or as designated by the ENGINEER.

CONSTRUCTION METHODS

602-3.1 Weather Limitations. The prime coat shall be applied only when the existing surface is dry; the atmospheric temperature is 50 °F or above, and the temperature has not been below 35°F for the 12 hours prior to application; and when the weather is not foggy or rainy. The temperature requirements may be waived when directed by the ENGINEER.

602-3.2 Equipment. The equipment shall include a self-powered pressure bituminous material distributor and equipment for heating bituminous material.

Provide a distributor with pneumatic tires of such size and number that the load produced on the base surface does not exceed 65.0 psi of tire width to prevent rutting, shoving or otherwise damaging the base, surface or other layers in the pavement structure. Design and equip the distributor to spray the bituminous material in a uniform coverage at the specified temperature, at readily determined and controlled rates from 0.05 to 2.0 gallons per square yard, with a pressure range of 25 to 75 psi and with an allowable variation from the specified rate of not more than ±5%, and at variable widths. Include with the distributor equipment a separate power unit for the bitumen pump, full-circulation spray bars, tachometer, pressure gauges, volume-measuring devices, adequate heaters for heating of materials to the proper application temperature, a thermometer for reading the temperature of tank contents, and a hand hose attachment suitable for applying bituminous material manually to areas inaccessible to the distributor. Equip the distributor to circulate and agitate the bituminous material during the heating process. If the distributor is not equipped with an operable quick shutoff valve, the prime operations shall be started and stopped on building paper. The Contractor shall remove blotting sand prior to asphalt concrete lay down operations at no additional expense to the OWNER.

A power broom and power blower suitable for cleaning the surfaces to which the bituminous coat is to be applied shall be provided.

602-3.3 Application of Bituminous Material. Immediately before applying the prime coat, the full width of the surface to be primed shall be swept with a power broom to remove all loose dirt and other objectionable material.

The bituminous material shall be uniformly applied with a bituminous distributor at the rate of 0.15 to 0.30 gallons per square yard depending on the base course surface texture. The type of bituminous material and application rate shall be approved by the ENGINEER prior to application.

Following application of the bituminous material and prior to application of the succeeding layer of pavement, allow the bituminous coat to cure and to obtain evaporation of any volatiles or moisture. Maintain the coated surface until the succeeding layer of pavement is placed, by protecting the surface against damage and by repairing and recoating deficient areas. Allow the prime coat to cure without being disturbed for a period of at least 48 hours or longer, as may be necessary to attain penetration into the treated course. Furnish and spread enough sand to effectively blot up and cure excess bituminous material. Keep traffic off surfaces freshly treated with bituminous material. Provide sufficient warning signs and barricades so that traffic will not travel over freshly treated surfaces.

602-3.4 Trial Applications. Before providing the complete bituminous prime coat, the Contractor shall apply three lengths of at least 100 feet for the full width of the distributor bar to evaluate the amount of bituminous material that can be satisfactorily applied with the equipment. Apply three different trial application rates of bituminous materials within the application range specified in paragraph 602-3.3. Other trial applications will be made using various amounts of material as deemed necessary by the ENGINEER.

602-3.5 Bituminous Material Contractor's Responsibility. The Contractor shall provide a statement of source and character of the proposed bituminous material which must be submitted to and approved by the ENGINEER before any shipment of bituminous materials to the project. The Contractor shall furnish vendor's certified test reports for each carload, or equivalent, of bituminous material shipped to the project. The test reports shall be provided to and approved by the ENGINEER before the bituminous material is applied. If the bituminous material does not meet the specifications, it shall be replaced at the Contractor's expense. Furnishing the vendor's certified test report for the bituminous material shall not be interpreted as basis for final acceptance.

602-3.6 Freight and Weigh Bills. The Contractor shall submit waybills and delivery tickets during the progress of the work. Before the final estimate is allowed, file with the ENGINEER certified waybills and certified delivery tickets for all bituminous materials used in the construction of the pavement covered by the

contract. Do not remove bituminous material from storage until the initial outage and temperature measurements have been taken. The delivery or storage units will not be released until the final outage has been taken.

METHOD OF MEASUREMENT

602-4.1 The bituminous material for prime coat shall be measured by the gallon. Volume shall be corrected to the volume at 60°F in accordance with ASTM D1250. The bituminous material paid for will be the measured quantities used in the accepted work, provided that the measured quantities are not 10% over the specified application rate. Any amount of bituminous material more than 10% over the specified application rate for each application will be deducted from the measured quantities, except for irregular areas where hand spraying of the bituminous material is necessary. Water added to emulsified asphalt will not be measured for payment.

BASIS OF PAYMENT

602-5.1 Payment shall be made at the contract unit price per gallon for bituminous prime coat. This price shall be full compensation for furnishing all materials and for all preparation, delivering, and applying the materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

Payment will be made under:

Item P-602-5.1	Bituminous Prime Coat - per Gallon

TESTING REQUIREMENTS

ASTM D1250	Standard Guide for Use of the Petroleum Measurement Tables

MATERIAL REQUIREMENTS

ASTM D977	Standard Specification for Emulsified Asphalt
ASTM D2028	Standard Specification for Cutback Asphalt (Rapid-Curing Type)
ASTM D2397	Standard Specification for Cationic Emulsified Asphalt
ASTM D3628	Standard Practice for Selection and Use of Emulsified Asphalts

END OF ITEM P-602

ITEM P-603

BITUMINOUS TACK COAT

DESCRIPTION

603-1.1 This item shall consist of preparing and treating a bituminous or concrete surface with bituminous material in accordance with these specifications and in reasonably close conformity to the lines shown on the plans.

MATERIALS

603-2.1 Bituminous Materials. The bituminous material shall be an emulsified asphalt indicated in ASTM D3628 as a bituminous application for tack coat appropriate to local conditions or as designated by the ENGINEER.

CONSTRUCTION METHODS

603-3.1 Weather Limitations. The tack coat shall be applied only when the existing surface is dry and the atmospheric temperature is 50°F or above; the temperature has not been below 35°F for the 12 hours prior to application; and when the weather is not foggy or rainy. The temperature requirements may be waived when directed by the ENGINEER.

603-3.2 Equipment. The Contractor shall provide equipment for heating and applying the bituminous material.

Provide a distributor with pneumatic tires of such size and number that the load produced on the base surface does not exceed 65.0 psi of tire width to prevent rutting, shoving or otherwise damaging the base, surface or other layers in the pavement structure. Design and equip the distributor to spray the bituminous material in a uniform coverage at the specified temperature, at readily determined and controlled rates from 0.05 to 2.0 gallons per square yard, with a pressure range of 25 to 75 psi and with an allowable variation from the specified rate of not more than ±5%, and at variable widths. Include with the distributor equipment a separate power unit for the bitumen pump, full-circulation spray bars, tachometer, pressure gauges, volume-measuring devices, adequate heaters for heating of materials to the proper application temperature, a thermometer for reading the temperature of tank contents, and a hand hose attachment suitable for applying bituminous material manually to areas inaccessible to the distributor. Equip the distributor to circulate and agitate the bituminous material during the heating process. If the distributor is not equipped with an operable quick shutoff valve, the tack operations shall be started and stopped on building paper. The Contractor shall remove blotting sand prior to asphalt concrete lay down operations at no additional expense to the OWNER.

A power broom and/or power blower suitable for cleaning the surfaces to which the bituminous tack coat is to be applied shall be provided.

603-3.3 Application of Bituminous Material. Immediately before applying the tack coat, the full width of surface to be treated shall be swept with a power broom and/or power blower to remove all loose dirt and other objectionable material.

Emulsified asphalt shall be diluted by the addition of water when directed by the ENGINEER and shall be applied a sufficient time in advance of the paver to ensure that all water has evaporated before the overlying mixture is placed on the tacked surface.

The bituminous material including vehicle shall be uniformly applied with a bituminous distributor at the rate of 0.05 to 0.10 gallons per square yard depending on the condition of the existing surface. The type of bituminous material and application rate shall be approved by the ENGINEER prior to application.

After application of the tack coat, the surface shall be allowed to cure without being disturbed for the period of time necessary to permit drying and setting of the tack coat. This period shall be determined by the ENGINEER. The Contractor shall protect the tack coat and maintain the surface until the next course has been placed.

603-3.4 Bituminous Material Contractor's Responsibility. The Contractor shall provide a statement of source and character of the proposed bituminous material which must be submitted and approved by the ENGINEER before any shipment of bituminous materials to the project.

The Contractor shall furnish the vendor's certified test reports for each carload, or equivalent, of bituminous material shipped to the project. The tests reports shall be provided to and approved by the ENGINEER before the bituminous material is applied. If the bituminous material does not meet the specifications, it shall be replaced at the Contractor's expense. Furnishing the vendor's certified test report for the bituminous material shall not be interpreted as a basis for final acceptance.

603-3.5 Freight and Weigh Bills The Contractor shall submit waybills and delivery tickets, during progress of the work. Before the final statement is allowed, file with the ENGINEER certified waybills and certified delivery tickets for all bituminous materials used in the construction of the pavement covered by the contract. Do not remove bituminous material from storage until the initial outage and temperature measurements have been taken. The delivery or storage units will not be released until the final outage has been taken.

METHOD OF MEASUREMENT

603-4.1 The bituminous material for tack coat shall be measured by the gallon. Volume shall be corrected to the volume at 60°F in accordance with ASTM D1250. The bituminous material paid for will be the measured quantities used in the accepted work, provided that the measured quantities are not 10% over the specified application rate. Any amount of bituminous material more than 10% over the specified application rate for each application will be deducted from the measured quantities, except for irregular areas where hand spraying of the bituminous material is necessary. Water added to emulsified asphalt will not be measured for payment.

BASIS OF PAYMENT

603.5-1 Payment shall be made at the contract unit price per gallon of bituminous material. This price shall be full compensation for furnishing all materials, for all preparation, delivery, and application of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-603-5.1	Bituminous Tack Coat - per Gallon

MATERIAL REQUIREMENTS

ASTM D633	Standard Volume Correction Table for Road Tar
ASTM D977	Standard Specification for Emulsified Asphalt
ASTM D1250	Standard Guide for Use of the Petroleum Measurement Tables
ASTM D2028	Standard Specification for Cutback Asphalt (Rapid-Curing Type)
ASTM D2397	Standard Specification for Cationic Emulsified Asphalt
ASTM D3628	Standard Practice for Selection and Use of Emulsified Asphalts

END ITEM P-603

ITEM P-610

STRUCTURAL PORTLAND CEMENT CONCRETE

DESCRIPTION

610-1.1 This item shall consist of plain and reinforced structural portland cement concrete (PCC), prepared and constructed in accordance with these specifications, at the locations and of the form and dimensions shown on the plans. This specification shall be used for all structural and miscellaneous concrete including signage bases.

MATERIALS

610-2.1 General. Only approved materials, conforming to the requirements of these specifications, shall be used in the work. Materials may be subject to inspection and tests at any time during their preparation or use. The source of all materials shall be approved by the ENGINEER before delivery or use in the work. Representative preliminary samples of the materials shall be submitted by the Contractor, when required, for examination and test. Materials shall be stored and handled to ensure preservation of their quality and fitness for use and shall be located to facilitate prompt inspection. All equipment for handling and transporting materials and concrete must be clean before any material or concrete is placed in them.

The use of pit-run aggregates shall not be permitted unless the pit-run aggregate has been screened and washed, and all fine and coarse aggregates stored separately and kept clean. The mixing of different aggregates from different sources in one storage stockpile or alternating batches of different aggregates shall not be permitted.

a. Reactivity. Fine and Coarse aggregates to be used in all concrete shall be evaluated and tested by the Contractor for alkali-aggregate reactivity in accordance with both ASTM C 1260 and C 1567. Aggregate and mix proportion reactivity tests shall be performed for each project.

(1) Coarse and fine aggregate shall be tested separately in accordance with ASTM C 1260. The aggregate shall be considered innocuous if the expansion of test specimens, tested in accordance with ASTM C1260, does not exceed 0.10% at 28 days (30 days from casting).

(2) Combined coarse and fine aggregate shall be tested in accordance with ASTM C1567, modified for combined aggregates, using the proposed mixture design proportions of aggregates, cementitious materials, and/or specific reactivity reducing chemicals. If lithium nitrate is proposed for use with or without supplementary cementitious materials,

the aggregates shall be tested in accordance with Corps of ENGINEERs (COE) CRD C662. If lithium nitrate admixture is used, it shall be nominal 30% ±0.5% weight lithium nitrate in water.

(3) If the expansion of the proposed combined materials test specimens, tested in accordance with ASTM C 1567, modified for combined aggregates, or COE CRD C662, does not exceed 0.10% at 28 days, the proposed combined materials will be accepted. If the expansion of the proposed combined materials test specimens is greater than 0.10% at 28 days, the aggregates will not be accepted unless adjustments to the combined materials mixture can reduce the expansion to less than 0.10% at 28 days, or new aggregates shall be evaluated and tested.

610-2.2 Coarse Aggregate. The coarse aggregate for concrete shall meet the requirements of ASTM C33. Crushed stone aggregate shall have a durability factor, as determined by ASTM C 666, greater than or equal to 95. The ENGINEER may consider and reserve final approval of other State classification procedures addressing aggregate durability.

Coarse aggregate shall be well graded from coarse to fine and shall meet the following gradation shown in the table below when tested per ASTM C136.

Gradation For Coarse Aggregate

Sieve Designation (square openings)	Percentage by Weight Passing Sieves						
	2"	1-1/2"	1"	3/4"	1/2"	3/8"	No. 4
No. 4 to 3/4 in.			100	90-100		20-55	0-10
No. 4 to 1 in.		100	90-100		25-60		0-10
No. 4 to 1-1/2 in.	100	95-100		35-70		10-30	0-5

610-2.2.1 Aggregate Susceptibility to Durability (D) Cracking. Aggregates that have a history of D-cracking shall not be used.

610-2.3 Fine Aggregate. The fine aggregate for concrete shall meet the requirements of ASTM C33.

The fine aggregate shall be well graded from fine to coarse and shall meet the requirements of the table below when tested in accordance with ASTM C136:

Gradation For Fine Aggregate

Sieve Designation (square openings)	Percentage by Weight Passing Sieves
3/8 inch	100
No. 4	95-100

Gradation For Fine Aggregate

Sieve Designation (square openings)	Percentage by Weight Passing Sieves
No. 16	45-80
No. 30	25-55
No. 50	10-30
No. 100	2-10

Blending will be permitted, if necessary, to meet the gradation requirements for fine aggregate. Fine aggregate deficient in the percentage of material passing the No. 50 mesh sieve may be accepted, if the deficiency does not exceed 5% and is remedied by the addition of pozzolanic or cementitious materials other than Portland cement, as specified in paragraph 610-2.6, Admixtures, in sufficient quantity to produce the required workability as approved by the ENGINEER.

610-2.4 Cement. Cement shall conform to the requirements of ASTM C150 Type I, II, or III.

If aggregates are deemed innocuous when tested in accordance with paragraph 610-2.1.a.1 and accepted in accordance with paragraph 610-2.1.a.3, higher equivalent alkali content in the cement may be allowed if approved by the ENGINEER and FAA. If cement becomes partially set or contains lumps of caked cement, it shall be rejected. Cement salvaged from discarded or used bags shall not be used.

The Contractor shall furnish vendors' certified test reports for each carload, or equivalent, of cement shipped to the project. The report shall be delivered to the ENGINEER before use of the cement is granted. All test reports shall be subject to verification by testing sample materials received for use on the project.

610-2.5 Water. The water used in concrete shall be fresh, clean and potable; free from injurious amounts of oils, acids, alkalies, salts, organic materials or other substances deleterious to concrete.

610-2.6 Admixtures. The Contractor shall submit certificates indicating that the material to be furnished meets all of the requirements indicated below. In addition, the ENGINEER may require the Contractor to submit complete test data from an approved laboratory showing that the material to be furnished meets all of the requirements of the cited specifications. Subsequent tests may be made of samples taken by the ENGINEER from the supply of the material being furnished or proposed for use on the work to determine whether the admixture is uniform in quality with that approved.

a. Air-Entraining Admixtures. Air-entraining admixtures shall meet the requirements of ASTM C260 and shall consistently entrain the air content in the specified ranges under field conditions. The air-entrainment agent and any water reducer admixture shall be compatible.

b. Water-reducing Admixtures. Water-reducing admixture shall meet the requirements of ASTM C494, Type A, B, or D. ASTM C494, Type F and G high range water reducing admixtures and ASTM C 1017 flowable admixtures shall not be used.

c. Other Chemical Admixtures. The use of set retarding, and set-accelerating admixtures shall be approved by the ENGINEER. Retarding shall meet the requirements of ASTM C494, Type A, B, or D and set-accelerating shall meet the requirements of ASTM C494, Type C. Calcium chloride and admixtures containing calcium chloride shall not be used.

610-2.7 Premolded Joint Material. Premolded joint material for expansion joints shall meet the requirements of ASTM D1751 or ASTM D1752.

610-2.8 Joint Filler. The filler for joints shall meet the requirements as specified on the project plans.

610-2.9 Steel Reinforcement. Reinforcing shall consist of reinforcing steel conforming to the requirements of ASTM A615 - Grade 60 or welded steel wire fabric conforming to the requirements of ASTM A1064.

610-2.10 Materials for Curing Concrete. Curing materials shall conform to one of the following specifications.

Waterproof paper	ASTM C171
Clear or white Polyethylene Sheeting	ASTM C171
White-pigmented Liquid Membrane-Forming Compound, Type 2, Class B	ASTM C309

CONSTRUCTION METHODS

610-3.1 General. The Contractor shall furnish all labor, materials, and services necessary for, and incidental to, the completion of all work as shown on the drawings and specified here. All machinery and equipment used by the Contractor on the work, shall be of sufficient size to meet the requirements of the work. All work shall be subject to the inspection and approval of the ENGINEER.

610-3.2 Concrete Composition. The concrete shall develop a compressive strength of 3,000 psi in 28 days, unless designated otherwise, as determined by test cylinders made in accordance with ASTM C31 and tested in accordance with

ASTM C39. The concrete shall contain not less than 470 pounds of cement per cubic yard. The concrete shall contain 5% of entrained air, ±1%, as determined by ASTM C231 and shall have a slump of not more than 4 inches as determined by ASTM C143.

610-3.3 Acceptance Sampling and Testing. Concrete for each structure will be accepted on the basis of the compressive strength specified in paragraph 610-3.2. The concrete shall be sampled in accordance with ASTM C172. Concrete cylindrical compressive strength specimens shall be made in accordance with ASTM C31 and tested in accordance with ASTM C39. The Contractor shall cure and store the test specimens under such conditions as directed by the ENGINEER. The ENGINEER will make the actual tests on the specimens at no expense to the Contractor.

610-3.4 Qualifications for Concrete Testing Service. Perform concrete testing by an approved laboratory and inspection service experienced in sampling and testing concrete. Testing agency must meet the requirements of ASTM C1077 or ASTM E329.

610-3.5 Proportioning and Measuring Devices. When package cement is used, the quantity for each batch shall be equal to one or more whole sacks of cement. The aggregates shall be measured separately by weight. If aggregates are delivered to the mixer in batch trucks, the exact amount for each mixer charge shall be contained in each batch compartment. Weighing boxes or hoppers shall be approved by the ENGINEER and shall provide means of regulating the flow of aggregates into the batch boxes to the required, exact weight of aggregates is obtained.

610-3.6 Consistency. The consistency of the concrete shall be determined by the slump test specified in ASTM C143.

610-3.7 Mixing. Concrete may be mixed at the construction site, at a central point, or wholly or in part in truck mixers. The concrete shall be mixed and delivered in accordance with the requirements of ASTM C94.

610-3.8 Mixing Conditions. The concrete shall be mixed only in quantities required for immediate use. Concrete shall not be mixed while the air temperature is below 40°F without permission of the ENGINEER. If permission is granted for mixing under such conditions, aggregates or water, or both, shall be heated and the concrete shall be placed at a temperature not less than 50°F nor more than 100°F. The Contractor shall be held responsible for any defective work, resulting from freezing or injury in any manner during placing and curing, and shall replace such work at his expense.

Retempering of concrete by adding water or any other material shall not be permitted.

The rate of delivery of concrete to the job shall be sufficient to allow uninterrupted placement of the concrete.

610-3.9 Forms. Concrete shall not be placed until all the forms and reinforcements have been inspected and approved by the ENGINEER. Forms shall be of suitable material and shall be of the type, size, shape, quality, and strength to build the structure as shown on the plans. The forms shall be true to line and grade and shall be mortar-tight and sufficiently rigid to prevent displacement and sagging between supports. The surfaces of forms shall be smooth and free from irregularities, dents, sags, and holes. The Contractor shall be responsible for their adequacy.

The internal form ties shall be arranged so no metal will show in the concrete surface or discolor the surface when exposed to weathering when the forms are removed. All forms shall be wetted with water or with a non-staining mineral oil, which shall be applied immediately before the concrete is placed. Forms shall be constructed so they can be removed without injuring the concrete or concrete surface. The forms shall not be removed until at least 30 hours after concrete placement for vertical faces, walls, slender columns, and similar structures. Forms supported by falsework under slabs, beams, girders, arches, and similar construction shall not be removed until tests indicate the concrete has developed at least 60% of the design strength.

610-3.10 Placing Reinforcement. All reinforcement shall be accurately placed, as shown on the plans, and shall be firmly held in position during concrete placement. Bars shall be fastened together at intersections. The reinforcement shall be supported by approved metal chairs. Shop drawings, lists, and bending details shall be supplied by the Contractor when required.

610-3.11 Embedded Items. Before placing concrete, all embedded items shall be firmly and securely fastened in place as indicated. All embedded items shall be clean and free from coating, rust, scale, oil, or any foreign matter. The concrete shall be spaded and consolidated around and against embedded items. The embedding of wood shall not be allowed.

610-3.12 Placing Concrete. All concrete shall be placed during daylight hours, unless otherwise approved. The concrete shall not be placed until the depth and condition of foundations, the adequacy of forms and falsework, and the placing of the steel reinforcing have been approved by the ENGINEER. Concrete shall be placed as soon as practical after mixing, but in no case later than one (1) hour after water has been added to the mix. The method and manner of placing shall avoid segregation and displacement of the reinforcement. Troughs, pipes, and chutes shall be used as an aid in placing concrete when necessary. The concrete shall not be dropped from a height of more than 5 feet. Concrete shall be deposited as nearly as practical in its final position to avoid segregation due

to rehandling or flowing. Do not subject concrete to procedures which cause segregation. Concrete shall be placed on clean, damp surfaces, free from running water, or on a properly consolidated soil foundation.

610-3.13 Vibration. Vibration shall follow the guidelines in American Concrete Institute (ACI) Committee 309, Guide for Consolidation of Concrete. Where bars meeting ASTM A775 or A934 are used, the vibrators shall be equipped with rubber or non-metallic vibrator heads. Furnish a spare, working, vibrator on the job site whenever concrete is placed. Consolidate concrete slabs greater than 4 inches in depth with high frequency mechanical vibrating equipment supplemented by hand spading and tamping. Consolidate concrete slabs 4 inches or less in depth by wood tampers, spading, and settling with a heavy leveling straightedge. Operate internal vibrators with vibratory element submerged in the concrete, with a minimum frequency of not less than 6000 cycles per minute when submerged. Do not use vibrators to transport the concrete in the forms. Penetrate the previously placed lift with the vibrator when more than one lift is required. Use external vibrators on the exterior surface of the forms when internal vibrators do not provide adequate consolidation of the concrete. Vibrators shall be manipulated to work the concrete thoroughly around the reinforcement and embedded fixtures and into corners and angles of the forms. The vibration at any point shall be of sufficient duration to accomplish compaction but shall not be prolonged to where segregation occurs. Concrete deposited under water shall be carefully placed in a compact mass in its final position by means of a tremie or other approved method and shall not be disturbed after placement.

610-3.14 Construction Joints. If the placement of concrete is suspended, necessary provisions shall be made for joining future work before the placed concrete takes its initial set. For the proper bonding of old and new concrete, provisions shall be made for grooves, steps, reinforcing bars or other devices as specified. The work shall be arranged so that a section begun on any day shall be finished during daylight of the same day. Before depositing new concrete on or against concrete that has hardened, the surface of the hardened concrete shall be cleaned by a heavy steel broom, roughened slightly, wetted, and covered with a neat coating of cement paste or grout.

610-3.15 Expansion Joints. Expansion joints shall be constructed at such points and dimensions as indicated on the drawings. The premolded filler shall be cut to the same shape as the surfaces being joined. The filler shall be fixed firmly against the surface of the concrete already in place so that it will not be displaced when concrete is deposited against it.

610-3.16 Defective Work. Any defective work discovered after the forms have been removed, which in the opinion of the ENGINEER cannot be repaired satisfactorily, shall be immediately removed and replaced at the expense of the Contractor. Defective work shall include deficient dimensions, or bulged,

uneven, or honeycomb on the surface of the concrete.

610-3.17 Surface Finish. All exposed concrete surfaces shall be true, smooth, and free from open or rough areas, depressions, or projections. All concrete horizontal plane surfaces shall be brought flush to the proper elevation with the finished top surface struck-off with a straightedge and floated. Mortar finishing shall not be permitted, nor shall dry cement or sand-cement mortar be spread over the concrete during the finishing of horizontal plane surfaces.

The surface finish of exposed concrete shall be a rubbed finish. If forms can be removed while the concrete is still green, the surface shall be wetted and then rubbed with a wooden float until all irregularities are removed. If the concrete has hardened before being rubbed, a carborundum stone shall be used to finish the surface. When approved, the finishing can be done with a finishing machine.

610-3.18 Curing and Protection. All concrete shall be properly cured and protected by the Contractor. The concrete shall be protected from the weather, flowing water, and from defacement of any nature during the project. The concrete shall be cured by covering with an approved material as soon as it has sufficiently hardened. Water-absorptive coverings shall be thoroughly saturated when placed and kept saturated for at least three (3) days following concrete placement. All curing mats or blankets shall be sufficiently weighted or tied down to keep the concrete surface covered and to prevent the surface from being exposed to air currents. Wooden forms shall be kept wet at all times until removed to prevent opening of joints and drying out of the concrete. Traffic shall not be allowed on concrete surfaces for seven (7) days after the concrete has been placed.

610-3.19 Drains or Ducts. Drainage pipes, conduits, and ducts that are to be encased in concrete shall be installed by the Contractor before the concrete is placed. The pipe shall be held rigidly so that it will not be displaced or moved during the placing of the concrete.

610-3.20 Cold Weather Placing. When concrete is placed at temperatures below 40°F, the Contractor shall provide satisfactory methods and means to protect the mix from injury by freezing. The aggregates, or water, or both, shall be heated to place the concrete at temperatures between 50°F and 100°F.

Calcium chloride may be incorporated in the mixing water when directed by the ENGINEER. Not more than 2 pounds of Type 1 nor more than 1.6 pounds of Type 2 shall be added per bag of cement. After the concrete has been placed, the Contractor shall provide sufficient protection such as cover, canvas, framework, heating apparatus, etc., to enclose and protect the structure and maintain the temperature of the mix at not less than 50°F until at least 60% of the designed strength has been attained.

610-3.21 Hot Weather Placing. Concrete shall be properly placed and finished with procedures previously submitted. The concrete-placing temperature shall not exceed 90°F when measured in accordance with ASTM C1064. Cooling of the mixing water and aggregates, or both, may be required to obtain an adequate placing temperature. A retarder meeting the requirements of paragraph 610-2.6 may be used to facilitate placing and finishing. Steel forms and reinforcement shall be cooled prior to concrete placement when steel temperatures are greater than 120°F. Conveying and placing equipment shall be cooled if necessary to maintain proper concrete-placing temperature. Submit the proposed materials and methods for review and approval by the ENGINEER, if concrete is to be placed under hot weather conditions.

610-3.22 Filling Joints. All joints that require filling shall be thoroughly cleaned, and any excess mortar or concrete shall be cut out with proper tools. Joint filling shall not start until after final curing and shall be done only when the concrete is completely dry. The cleaning and filling shall be done with proper equipment to obtain a neat looking joint free from excess filler.

METHOD OF MEASUREMENT

610-4.1 There will be no direct measurement for payment for any work covered by this item. The cost of any structural concerte used shall be included in the bid item to which it pertains. These prices shall be full compensation for furnishing all materials and for all preparation, delivery, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

TESTING REQUIREMENTS

ASTM C31	Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C138	Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
ASTM C143	Standard Test Method for Slump of Hydraulic-Cement Concrete
ASTM C231	Standard Test Method for Air Content of Freshly Mixed

	Concrete by the Pressure Method
ASTM C666	Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing
ASTM C1017	Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete
ASTM C1064	Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete
ASTM C1077	Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
ASTM C1260	Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
ASTM C1567	Standard Test Method for Determining the Potential Alkali-Silica Reactivity of Combinations of Cementitious Materials and Aggregates (Accelerated Mortar-Bar Method)
ASTM E329	Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
U.S. Army Corps of ENGINEERs (USACE) Concrete Research Division (CRD) C662	Determining the Potential Alkali-Silica Reactivity of Combinations of Cementitious Materials, Lithium Nitrate Admixture and Aggregate (Accelerated Mortar-Bar Method)

MATERIAL REQUIREMENTS

ASTM A184	Standard Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement
ASTM A185	Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete
ASTM A615	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A704	Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement

ASTM A706	Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
ASTM A775	Standard Specification for Epoxy-Coated Steel Reinforcing Bars
ASTM A934	Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars
ASTM A1064	Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
ASTM C33	Standard Specification for Concrete Aggregates
ASTM C94	Standard Specification for Ready-Mixed Concrete
ASTM C150	Standard Specification for Portland Cement
ASTM C171	Standard Specification for Sheet Materials for Curing Concrete
ASTM C172	Standard Practice for Sampling Freshly Mixed Concrete
ASTM C260	Standard Specification for Air-Entraining Admixtures for Concrete
ASTM C309	Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C494	Standard Specification for Chemical Admixtures for Concrete
ASTM C595	Standard Specification for Blended Hydraulic Cements
ASTM C618	Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM D1751	Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Asphalt Types)
ASTM D1752	Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction

ACI 305R	Hot Weather Concreting
ACI 306R	Cold Weather Concreting
ACI 309R	Guide for Consolidation of Concrete

END OF ITEM P-610

ITEM P-620

RUNWAY AND TAXIWAY MARKING

DESCRIPTION

620-1.1 This item shall consist of the preparation and painting of numbers, markings, and stripes on the surface of taxiways and aprons, in accordance with these specifications and at the locations shown on the plans, or as directed by the ENGINEER. The terms “paint” and “marking material” as well as “painting” and “application of markings” are interchangeable throughout this specification.

MATERIALS

620-2.1 Materials Acceptance. The Contractor shall furnish manufacturer’s certified test reports for materials shipped to the project. The certified test reports shall include a statement that the materials meet the specification requirements. The reports can be used for material acceptance or the ENGINEER may perform verification testing. The reports shall not be interpreted as a basis for payment. The Contractor shall notify the ENGINEER upon arrival of a shipment of materials to the site. All material shall arrive in sealed containers 55 gallons or smaller for inspection by the ENGINEER. Material shall not be loaded into the equipment until inspected by the ENGINEER.

620-2.2 Marking Materials. Paint shall be waterborne in accordance with the requirements of paragraph 620-2.2a. Paint shall be furnished in white (37925) and yellow (33538 or 33655) in accordance with Federal Standard No. 595.

a. Waterborne. Paint shall meet the requirements of Federal Specification TT-P-1952E, Type I or Type II. The non-volatile portion of the vehicle for all paint types shall be composed of a 100% acrylic polymer as determined by infrared spectral analysis.

620-2.3 Reflective Media. Glass beads shall meet the requirements for Federal Specification TT-B-1325D, Type III, Gradation A. Glass beads shall be treated with all compatible coupling agents recommended by the manufacturers of the paint and reflective media to ensure adhesion and embedment.

CONSTRUCTION METHODS

620-3.1 Weather Limitations. The painting shall be performed only when the surface is dry and when the surface temperature is at least 45°F and rising and the pavement surface temperature is at least 5°F above the dew point or meets the manufacturer’s recommendations. Markings shall not be applied when the pavement temperature is greater than 130°F. Markings shall not be applied when the wind speed exceeds 10 mph unless windscreens are used to shroud the material guns.

620-3.2 Equipment. Equipment shall include the apparatus necessary to properly clean the existing surface, a mechanical marking machine, a bead dispensing machine, and such auxiliary hand-painting equipment as may be necessary to satisfactorily complete the job.

The mechanical marker shall be an atomizing spray-type or airless-type marking machine suitable for application of traffic paint. It shall produce an even and uniform film thickness at the required coverage and shall apply markings of uniform cross-sections and clear-cut edges without running or spattering and without over spray.

620-3.3 Preparation of Surface. Immediately before application of the paint, the surface shall be dry and free from dirt, grease, oil, laitance, or other foreign material that would reduce the bond between the paint and the pavement. The area to be painted shall be cleaned by waterblasting or by other methods as required to remove all contaminants without damage to the pavement surface. Use of any chemicals or impact abrasives during surface preparation shall be approved in advance by the ENGINEER. After the cleaning operations, sweeping, blowing, or rinsing with pressurized water shall be performed to ensure the surface is clean and free of grit or other debris left from the cleaning process.

At least 24 hours prior to remarking existing markings, the existing markings must be removed such that 75% of the existing markings are removed with low (3,500-10,000 psi) waterblaster. After waterblasting, the surface shall be cleaned of all residue or debris either with sweeping or blowing with compressed air or both.

Prior to the initial application of markings, the Contractor shall certify in writing that the surface has been prepared in accordance with the paint manufacturer's requirements, that the application equipment is appropriate for the type of marking paint and that environmental conditions are appropriate for the material being applied. This certification along with a copy of the paint manufacturer's surface preparation and application requirements must be submitted and approved by the ENGINEER prior to the initial application of markings.

620-3.4 Layout of Markings. The proposed markings shall be laid out in advance of the paint application. The locations of markings to receive glass beads shall be shown on the plans.

620-3.5 Application. Paint shall be applied at the locations and to the dimensions and spacing shown on the plans. Paint shall not be applied until the layout and condition of the surface has been approved by the ENGINEER. The edges of the markings shall not vary from a straight line more than 1/2 inch in 50 feet, and marking dimensions and spacings shall be within the following tolerances:

Dimension and Spacing	Tolerance
36 inch or less	±1/2 inch
greater than 36 inch to 6 feet	±1 inch
greater than 6 feet to 60 feet	±2 inch
greater than 60 feet	±3 inch

The paint shall be mixed in accordance with the manufacturer's instructions and applied to the pavement with a marking machine at the rate shown in Table 1. The addition of thinner will not be permitted. A period of 2 days or as recommended by the paint manufacturer shall elapse between placement of a bituminous surface course or seal coat and application of the paint.

Prior to the initial application of markings, the Contractor shall certify in writing that the surface has been prepared in accordance with the paint manufacturer's requirements, that the application equipment is appropriate for the marking paint and that environmental conditions are appropriate for the material being applied. This certification along with a copy of the paint manufactures application and surface preparation requirements must be submitted to the ENGINEER prior to the initial application of markings.

620-3.6 Test Strip. Prior to the full application of airfield markings, the Contractor shall produce a test strip in the presence of the ENGINEER. The test strip shall include the application of a minimum of 5 gallons of paint and application of 50 pounds of Type III glass beads. The test strip shall be used to establish thickness/darkness standard for all markings. The test strip shall cover no more than the maximum area prescribed in Table 1 (e.g., for 5 gallons of waterborne paint shall cover no more than 575 square feet.

Table 1. Application Rates For Paint And Glass Beads
(See Note regarding Red and Pink Paint)

Paint Type	Paint Square feet per Gallon, ft^2/gal	Glass Beads, Type III Pounds per Gallon of Paint lb/gal
Waterborne Type I or II (Final Application)	115 ft^2/gal max	10 lb/gal min

Glass beads shall be distributed upon the marked areas at the locations shown on the plans to receive glass beads immediately after application of the paint. A dispenser shall be furnished that is properly designed for attachment to the marking machine and suitable for dispensing glass beads. Glass beads shall be applied at the rate shown in Table 1. Glass beads shall not be applied to black paint or green paint. Glass beads shall adhere to the cured paint or all

marking operations shall cease until corrections are made. Different bead types shall not be mixed. Regular monitoring of glass bead embedment should be performed.

All emptied containers shall be returned to the paint storage area for checking by the ENGINEER. The containers shall not be removed from the airport or destroyed until authorized by the ENGINEER.

620-3.7 Application-Preformed Thermoplastic Airport Pavement Markings. Deleted.

620-3.8 Protection and Cleanup. After application of the markings, all markings shall be protected from damage until dry. All surfaces shall be protected from excess moisture and/or rain and from disfiguration by spatter, splashes, spillage, or drippings. The Contractor shall remove from the work area all debris, waste, loose or unadhered reflective media, and by-products generated by the surface preparation and application operations to the satisfaction of the ENGINEER. The Contractor shall dispose of these wastes in strict compliance with all applicable state, local, and Federal environmental statutes and regulations.

620-3.9 Marking Removal. Existing markings shall be removed as shown on the plans. High pressure water, cold planning, or sand blasting may be used. Any method selected to be used shall not cause significant damage to the pavement. The Contractor will be required to provide submittal designating removal method. Contractor shall be required to demonstrate that marking removal can be competed without causing significant damage to the pavement surface. All waste from marking removal operations shall be disposed of off Airport property at a properly permitted location.

METHOD OF MEASUREMENT

620-4.1 The quantity of apron markings to be paid for shall be the number of square feet of marking performed in accordance with the specifications and accepted by the ENGINEER.

BASIS OF PAYMENT

620-5.1 Payment shall be made at the respective contract price per square foot for apron markings for reflective media**.** This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-620-5.1 Apron Marking (Final Application) - per Square Foot

Item P-620-5.2 Marking Removal - per Square Foot

MATERIAL REQUIREMENTS

FED SPEC TT-B-1325D	Beads (Glass Spheres) Retro-Reflective
American Association of State Highway and Transportation Officials (AASHTO) M247	Standard Specification for Glass Beads Used in Pavement Markings
FED SPEC TT-P-1952E	Paint, Traffic and Airfield Marking, Waterborne
FED STD 595	Colors used in Government Procurement
AC 150/5340-1L	Standards for Airport Markings

END OF ITEM P-620

ITEM T-901

SEEDING

DESCRIPTION

901-1.1 This item shall consist of soil preparation, seeding, fertilizing, and liming the areas shown on the plans or as directed by the Engineer in accordance with these specifications.

MATERIALS

901-2.1 **Seed.** The species and application rates of grass, legume, and cover-crop seed furnished shall be those stipulated herein. Seeds shall conform to the requirements of Federal Specification JJJ-S-181, Federal Specification, Seeds, Agricultural.

Seed shall be furnished separately or in mixtures in standard containers labeled in conformance with the Agricultural Marketing Service (AMS) Seed Act and applicable state seed laws with the seed name, lot number, net weight, percentages of purity and of germination and hard seed, and percentage of maximum weed seed content clearly marked for each kind of seed. The Contractor shall furnish the Engineer duplicate signed copies of a statement by the vendor certifying that each lot of seed has been tested by a recognized laboratory for seed testing within six (6) months of date of delivery. This statement shall include: name and address of laboratory, date of test, lot number for each kind of seed, and the results of tests as to name, percentages of purity and of germination, and percentage of weed content for each kind of seed furnished, and, in case of a mixture, the proportions of each kind of seed. Wet, moldy, or otherwise damaged seed will be rejected.

Seeds shall be applied as follows:

Permanent Seed Mixes

Seed Mixture	Minimum Seed Purity %	Minimum Germination %	Rate of Application lb/acre	Seeding Dates
Common Bermudagrass (Hulled)	80%	70%	70	March 1 - July 31
Common Bermudagrass (Unhulled)	80%	70%	70	August 1 - February 28
Rye (Grain)	80%	70%	120	

Temporary Seed Mixtures

Rye (Grain)	76%	70%	120	August 1 - February 28
Common Bermudagrass (Hulled)	80%	7%	70	March 1 - July 31

901-2.2 Lime. Lime shall be ground limestone containing not less than 85% of total carbonates, and shall be ground to such fineness that 90% will pass through a No. 20 mesh sieve and 50% will pass through a No. 100 mesh sieve. Coarser material will be acceptable, providing the rates of application are increased to provide not less than the minimum quantities and depth specified in the special provisions on the basis of the two sieve requirements above. Dolomitic lime or a high magnesium lime shall contain at least 10% of magnesium oxide. Lime shall be applied at the rate of 4,000 pounds per acre. All liming materials shall conform to the requirements of ASTM C602.

901-2.3 Fertilizer. Fertilizer shall be standard commercial fertilizers supplied separately or in mixtures containing the percentages of total nitrogen, available phosphoric acid, and water-soluble potash. They shall be applied at the rate and to the depth specified, and shall meet the requirements of applicable state laws. They shall be furnished in standard containers with name, weight, and guaranteed analysis of contents clearly marked thereon. No cyanamide compounds or hydrated lime shall be permitted in mixed fertilizers.

The fertilizers may be supplied in one of the following forms:

a. A dry, free-flowing fertilizer suitable for application by a common fertilizer spreader;

b. A finely-ground fertilizer soluble in water, suitable for application by power sprayers; or

c. A granular or pellet form suitable for application by blower equipment.

Fertilizers shall be commercial fertilizers and shall be spread at the rate recommended by the manufacturer. For rye grass use as a starter fertilizer such as 18-24-6. For bermudagrass, usa a turf grade fertilizer with a ration of 3-1-2 or 4-1-2. Fertilizer shall be spread at the rate of 1,000 pounds per acre.

901-2.4 Soil for Repairs. The soil for fill and topsoiling of areas to be repaired shall be at least of equal quality to that which exists in areas adjacent to the area to be repaired. The soil shall be relatively free from large stones, roots, stumps, or other materials that will interfere with subsequent sowing of seed, compacting, and establishing turf, and shall be approved by the Engineer before being placed.

CONSTRUCTION METHODS

901-3.1 Advance Preparation and Cleanup. After grading of areas has been completed and before applying fertilizer and ground limestone, areas to be seeded shall be raked or otherwise cleared of stones larger than 2 inches in any diameter, sticks, stumps, and other debris that might interfere with sowing of seed, growth of grasses, or subsequent maintenance of grass-covered areas. If any damage by erosion or other causes has occurred after the completion of grading and before beginning the application of fertilizer and ground limestone, the Contractor shall repair such damage include filling gullies, smoothing irregularities, and repairing other incidental damage.

An area to be seeded shall be considered a satisfactory seedbed without additional treatment if it has recently been thoroughly loosened and worked to a depth of not less than 5 inches as a result of grading operations and, if immediately prior to seeding, the top 3 inches of soil is loose, friable, reasonably free from large clods, rocks, large roots, or other undesirable matter, and if shaped to the required grade.

When the area to be seeded is sparsely sodded, weedy, barren and unworked, or packed and hard, any grass and weeds shall first be cut or otherwise satisfactorily disposed of, and the soil then scarified or otherwise loosened to a depth not less than 5 inches. Clods shall be broken and the top 3 inches of soil shall be worked into a satisfactory seedbed by discing, or by use of cultipackers, rollers, drags, harrows, or other appropriate means.

901-3.2 Dry Application Method.

a. Liming. Lime shall be applied separately and prior to the application of any fertilizer or seed and only on seedbeds that have previously been prepared as described above. The lime shall then be worked into the top 3 inches of soil after which the seedbed shall again be properly graded and dressed to a smooth finish.

b. Fertilizing. Following advance preparations and cleanup fertilizer shall be uniformly spread at the rate that will provide not less than the minimum quantity stated in paragraph 901-2.3.

c. Seeding. Grass seed shall be sown at the rate specified in paragraph 901-2.1 immediately after fertilizing. The fertilizer and seed shall be raked within the depth range stated in the special provisions. Seeds of legumes, either alone or in mixtures, shall be inoculated before mixing or sowing, in accordance with the instructions of the manufacturer of the inoculant. When seeding is required at other than the seasons shown on the plans or in the special provisions, a cover crop shall be sown by the same methods

required for grass and legume seeding.

d. Rolling. After the seed has been properly covered, the seedbed shall be immediately compacted by means of an approved lawn roller, weighing 40 to 65 pounds per foot of width for clay soil (or any soil having a tendency to pack), and weighing 150 to 200 pounds per foot of width for sandy or light soils.

901-3.3 Wet Application Method.

a. General. The Contractor may elect to apply seed and fertilizer (and lime, if required) by spraying them on the previously prepared seedbed in the form of an aqueous mixture and by using the methods and equipment described herein. The rates of application shall be as specified in the special provisions.

b. Spraying Equipment. The spraying equipment shall have a container or water tank equipped with a liquid level gauge calibrated to read in increments not larger than 50 gallons over the entire range of the tank capacity, mounted so as to be visible to the nozzle operator. The container or tank shall also be equipped with a mechanical power-driven agitator capable of keeping all the solids in the mixture in complete suspension at all times until used.

The unit shall also be equipped with a pressure pump capable of delivering 100 gallons per minute at a pressure of 100 lb / sq inches. The pump shall be mounted in a line that will recirculate the mixture through the tank whenever it is not being sprayed from the nozzle. All pump passages and pipe lines shall be capable of providing clearance for 5/8 inch solids. The power unit for the pump and agitator shall have controls mounted so as to be accessible to the nozzle operator. There shall be an indicating pressure gauge connected and mounted immediately at the back of the nozzle.

The nozzle pipe shall be mounted on an elevated supporting stand in such a manner that it can be rotated through 360 degrees horizontally and inclined vertically from at least 20 degrees below to at least 60 degrees above the horizontal. There shall be a quick-acting, three-way control valve connecting the recirculating line to the nozzle pipe and mounted so that the nozzle operator can control and regulate the amount of flow of mixture delivered to the nozzle. At least three different types of nozzles shall be supplied so that mixtures may be properly sprayed over distance varying from 20 to 100 feet. One shall be a close-range ribbon nozzle, one a medium-range ribbon nozzle, and one a long-range jet nozzle. For case of removal and cleaning, all nozzles shall be connected to the nozzle pipe by means of quick-release couplings.

In order to reach areas inaccessible to the regular equipment, an extension hose at least 50 feet in length shall be provided to which the nozzles may be connected.

c. Mixtures. Lime, if required, shall be applied separately, in the quantity specified, prior to the fertilizing and seeding operations. Not more than 220 pounds of lime shall be added to and mixed with each 100 gallons of water. Seed and fertilizer shall be mixed together in the relative proportions specified, but not more than a total of 220 pounds of these combined solids shall be added to and mixed with each 100 gallons of water.

All water used shall be obtained from fresh water sources and shall be free from injurious chemicals and other toxic substances harmful to plant life. Brackish water shall not be used at any time. The Contractor shall identify to the Engineer all sources of water at least two (2) weeks prior to use. The Engineer may take samples of the water at the source or from the tank at any time and have a laboratory test the samples for chemical and saline content. The Contractor shall not use any water from any source that is disapproved by the Engineer following such tests.

All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed. All such mixtures shall be used within two (2) hours from the time they were mixed or they shall be wasted and disposed of at approved locations.

d. Spraying. Lime, if required, shall be sprayed only upon previously prepared seedbeds. After the applied lime mixture has dried, the lime shall be worked into the top 3 inches, after which the seedbed shall again be properly graded and dressed to a smooth finish.

Mixtures of seed and fertilizer shall only be sprayed upon previously prepared seedbeds on which the lime, if required, shall already have been worked in. The mixtures shall be applied by means of a high-pressure spray that shall always be directed upward into the air so that the mixtures will fall to the ground like rain in a uniform spray. Nozzles or sprays shall never be directed toward the ground in such a manner as might produce erosion or runoff.

Particular care shall be exercised to ensure that the application is made uniformly and at the prescribed rate and to guard against misses and overlapped areas. Proper predetermined quantities of the mixture in accordance with specifications shall be used to cover specified sections of known area.

Checks on the rate and uniformity of application may be made by observing the degree of wetting of the ground or by distributing test sheets of paper or

pans over the area at intervals and observing the quantity of material deposited thereon.

On surfaces that are to be mulched as indicated by the plans or designated by the Engineer, seed and fertilizer applied by the spray method need not be raked into the soil or rolled. However, on surfaces on which mulch is not to be used, the raking and rolling operations will be required after the soil has dried.

901-3.4 ESTABLISHMENT OF SEEDED AREAS (WATERING). The Contractor is required to establish a good stand of permanent grass of uniform color and density to the satisfaction of the ENGINEER. In the event that normal rainfall is not adequate for the germination and establishment of good stand or permanent grass, the Contractor is responsible for watering seeded areas, based on watering rate for the permanent seed (bermudagrass) of ¼" of water every 3 or 4 days for 3 weeks.

The Contractor is responsible for checking the dryness of the soil on a regular basis to determine the amount of irrigation needed to sustain sufficient growth. Watering shall be done in a manner that will avoid erosion from the application of excessive quantities and will avoid damage to the finished surface from watering itself or from the water truck. The Contractor shall use a water cannon, large area mobile irrigation system, or other approved equipment to eliminate/reduce potential rutting of the finished/seeded ground surface. Watering must be performed in accordance with the requirements of the Safety Plans and schedule/location shall be coordinated with the ENGINEER. The Contractor will be responsible for making arrangements for a water source on Airport property with the Georgetown County Water and Sewer District. Water will not be provided by the Owner. The cost for watering shall be included in the unit cost for "Permanent Seeding".

901-3.5 Maintenance of Seeded Areas. The Contractor shall protect seeded areas against traffic or other use by warning signs or barricades, as approved by the Engineer. Surfaces gullied or otherwise damaged following seeding shall be repaired by regrading and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.

When either the dry or wet application method outlined above is used for work done out of season, it will be required that the Contractor establish a good stand of grass of uniform color and density to the satisfaction of the Engineer. A grass stand shall be considered adequate when bare spots are one square foot or less, randomly dispersed, and do not exceed 3% of the area seeded.

METHOD OF MEASUREMENT

901-4.1 The quantity of seeding to be paid for shall be the number of acres measured on the ground surface, completed and accepted.

BASIS OF PAYMENT

901-5.1 Payment shall be made at the contract unit price per acre or fraction thereof, which price and payment shall be full compensation for furnishing and placing all material and for all labor, equipment, tools, and incidentals necessary to complete the work prescribed in this item.

Payment will be made under:

Item 901-5.1	Permanent Seeding - per Acre

MATERIAL REQUIREMENTS

ASTM C602	Standard Specification for Agricultural Liming Materials
ASTM D977	Standard Specification for Emulsified Asphalt
FED SPEC	JJJ-S-181, Federal Specification, Seeds, Agricultural

END OF ITEM T-901

ITEM T-904

SODDING

DESCRIPTION

904-1.1 This item shall consist of furnishing, hauling, and placing approved live sod on prepared areas in accordance with this specification at the locations shown on the plans or as directed by the Engineer.

MATERIALS

904-2.1 **Sod.** Sod furnished by the Contractor shall have a good cover of living or growing grass. This shall be interpreted to include grass that is seasonally dormant during the cold or dry seasons and capable of renewing growth after the dormant period. All sod shall be obtained from areas where the soil is reasonably fertile and contains a high percentage of loamy topsoil. Sod shall be cut or stripped from living, thickly matted turf relatively free of weeds or other undesirable foreign plants, large stones, roots, or other materials that might be detrimental to the development of the sod or to future maintenance. At least 70% of the plants in the cut sod shall be composed of the species stated in the special provisions, and any vegetation more than 6 inches in height shall be mowed to a height of 3 inches or less before sod is lifted. Sod, including the soil containing the roots and the plant growth showing above, shall be cut uniformly to a thickness not less than that stated in this specification.

904-2.2 **Lime.** Lime shall be ground limestone containing not less than 85% of total carbonates, and shall be ground to such fineness that 90% will pass through a No. 20 mesh sieve and 50% will pass through a No. 100 mesh sieve. Coarser material will be acceptable, providing the rates of application are increased to provide not less than the minimum quantities and depth specified in the special provisions on the basis of the two sieve requirements above. Dolomitic lime or a high magnesium lime shall contain at least 10% of magnesium oxide. Lime shall be applied at the rate of 4,000 pounds per acre. All liming materials shall conform to the requirements of ASTM C602.

904-2.3 **Fertilizer.** Fertilizer shall be standard commercial fertilizers supplied separately or in mixtures containing the percentages of total nitrogen, available phosphoric acid, and water-soluble potash. They shall be applied at the rate and to the depth specified, and shall meet the requirements of applicable state laws. They shall be furnished in standard containers with name, weight, and guaranteed analysis of contents clearly marked thereon. No cyanamide compounds or hydrated lime shall be permitted in mixed fertilizers.

The fertilizers may be supplied in one of the following forms:

a. A dry, free-flowing fertilizer suitable for application by a common fertilizer spreader;

b. A finely-ground fertilizer soluble in water, suitable for application by power sprayers; or

c. A granular or pellet form suitable for application by blower equipment.

Fertilizers shall be commercial fertilizers and shall be spread at the rate recommended by the manufacturer. For rye grass use as a starter fertilizer such as 18-24-6. For bermudagrass, use a turf grade fertilizer with a ration of 3-1-2 or 4-1-2. Fertilizer shall be spread at the rate of 1,000 pounds per acre.

904-2.4 Water. The water shall be sufficiently free from oil, acid, alkali, salt, or other harmful materials that would inhibit the growth of grass. It shall be subject to the approval of the Engineer prior to use.

904-2.5 Soil for Repairs. The soil for fill and topsoiling of areas to be repaired shall be at least of equal quality to that which exists in areas adjacent to the area to be repaired. The soil shall be relatively free from large stones, roots, stumps, or other materials that will interfere with subsequent sowing of seed, compacting, and establishing turf, and shall be approved by the Engineer before being placed.

CONSTRUCTION METHODS

904-3.1 General. Areas to be solid, strip, or spot sodded shall be shown on the plans. Areas requiring special ground surface preparation such as tilling and those areas in a satisfactory condition that are to remain undisturbed shall also be shown on the plans.

Suitable equipment necessary for proper preparation of the ground surface and for the handling and placing of all required materials shall be on hand, in good condition, and shall be approved by the Engineer before the various operations are started. The Contractor shall demonstrate to the Engineer before starting the various operations that the application of required materials will be made at the specified rates.

904-3.2 Preparing the Ground Surface. After grading of areas has been completed and before applying fertilizer and limestone, areas to be sodded shall be raked or otherwise cleared of stones larger than 2 inches in any diameter, sticks, stumps, and other debris which might interfere with sodding, growth of grasses, or subsequent maintenance of grass-covered areas. If any damage by erosion or other causes occurs after grading of areas and before beginning the application of fertilizer and ground limestone, the Contractor shall repair such damage. This may include filling gullies, smoothing irregularities, and repairing

other incidental damage.

904-3.3 Applying Fertilizer and Ground Limestone. Following ground surface preparation, fertilizer shall be uniformly spread at a rate which will provide not less than the minimum quantity of each fertilizer ingredient, as stated in this specification. If use of ground limestone is required, it shall then be spread at a rate that will provide not less than the minimum quantity stated in this specification. These materials shall be incorporated into the soil to a depth of not less than 2 inches by discing, raking, or other suitable methods. Any stones larger than 2 inches in any diameter, large clods, roots, and other litter brought to the surface by this operation shall be removed.

904-3.4 Obtaining and Delivering Sod. After inspection and approval of the source of sod by the Engineer, the sod shall be cut with approved sod cutters to such a thickness that after it has been transported and placed on the prepared bed, but before it has been compacted, it shall have a uniform thickness of not less than 2 inches. Sod sections or strips shall be cut in uniform widths, not less than 10 inches, and in lengths of not less than 18 inches, but of such length as may be readily lifted without breaking, tearing, or loss of soil. Where strips are required, the sod must be rolled without damage with the grass folded inside. The Contractor may be required to mow high grass before cutting sod.

The sod shall be transplanted within 24 hours from the time it is stripped, unless circumstances beyond the Contractor's control make storing necessary. In such cases, sod shall be stacked, kept moist, and protected from exposure to the air and sun and shall be kept from freezing. Sod shall be cut and moved only when the soil moisture conditions are such that favorable results can be expected. Where the soil is too dry, permission to cut sod may be granted only after it has been watered sufficiently to moisten the soil to the depth the sod is to be cut.

904-3.5 Laying Sod. Sodding shall be performed only during the seasons when satisfactory results can be expected. Frozen sod shall not be used and sod shall not be placed upon frozen soil. Sod may be transplanted during periods of drought with the approval of the Engineer, provided the sod bed is watered to moisten the soil to a depth of at least 4 inches immediately prior to laying the sod.

The sod shall be moist and shall be placed on a moist earth bed. Pitch forks shall not be used to handle sod, and dumping from vehicles shall not be permitted. The sod shall be carefully placed by hand, edge to edge and with staggered joints, in rows at right angles to the slopes, commencing at the base of the area to be sodded and working upward. The sod shall immediately be pressed firmly into contact with the sod bed by tamping or rolling with approved equipment to provide a true and even surface, and ensure knitting without displacement of the sod or deformation of the surfaces of sodded areas. Where

the sod may be displaced during sodding operations, the workmen, when replacing it, shall work from ladders or treaded planks to prevent further displacement. Screened soil of good quality shall be used to fill all cracks between sods. The quantity of the fill soil shall not cause smothering of the grass. Where the grades are such that the flow of water will be from paved surfaces across sodded areas, the surface of the soil in the sod after compaction shall be set approximately one inch below the pavement edge. Where the flow will be over the sodded areas and onto the paved surfaces around manholes and inlets, the surface of the soil in the sod after compaction shall be placed flush with pavement edges.

On slopes steeper than one (1) vertical to 2-1/2 horizontal and in v-shaped or flat-bottom ditches or gutters, the sod shall be pegged with wooden pegs not less than 12 inches in length and have a cross-sectional area of not less than 3/4 sq inch. The pegs shall be driven flush with the surface of the sod.

904-3.6 Watering. Adequate water and watering equipment must be on hand before sodding begins, and sod shall be kept moist until it has become established and its continued growth assured. In all cases, watering shall be done in a manner that will avoid erosion from the application of excessive quantities and will avoid damage to the finished surface.

The Contractor is responsible for checking the dryness of the soil on a regular basis to determine the amount of irrigation needed to sustain sufficient growth and establish the sod. Watering shall be done in a manner that will avoid erosion from the application of excessive quantities and will avoid damage to the finished surface from the watering itself or from the water truck. The Contractor shall use a water cannon, large area mobile irrigation system, or other approved equipment to eliminate/reduce potential rutting of the finished/seeded ground surface. Watering must be performed in accordance with the requirements of the Safety Plans and schedule/location shall be coordinated with the ENGINEER. The Contractor will be responsible for making arrangements for a water source on Airport property with the Georgetown County Water and Sewer District. Water will not be provided by the Owner. The cost for watering shall be included in the unit cost for "Sodding (Bermudagrass).

904-3.7 Establishing Turf.

a. General. The Contractor shall provide general care for the sodded areas as soon as the sod has been laid and shall continue until final inspection and acceptance of the work.

b. Protection. All sodded areas shall be protected against traffic or other use by warning signs or barricades approved by the Engineer.

c. Mowing. The Contractor shall mow the sodded areas with approved mowing equipment, depending upon climatic and growth conditions and the needs for mowing specific areas. In the event that weeds or other undesirable vegetation are permitted to grow to such an extent that, either cut or uncut, they threaten to smother the sodded species, they shall be mowed and the clippings raked and removed from the area.

904-3.8 Repairing. When the surface has become gullied or otherwise damaged during the period covered by this contract, the affected areas shall be repaired to re-establish the grade and the condition of the soil, as directed by the Engineer, and shall then be sodded as specified in paragraph 904-3.5.

METHOD OF MEASUREMENT

904-4.1 This item shall be measured on the basis of the area in square yards of the surface covered with sod and accepted.

BASIS OF PAYMENT

904-5.1 This item will be paid for on the basis of the contract unit price per square yard for sodding, which price shall be full compensation for all labor, equipment, material, staking, and incidentals necessary to satisfactorily complete the items as specified.

Payment will be made under:

Item T-904-5.1 Sodding (Bermudagrass) - per Square Yard

MATERIAL REQUIREMENTS

ASTM C602 Standard Specification for Agricultural Liming Materials

END OF ITEM T-904

ITEM T-905

TOPSOILING

DESCRIPTION

905-1.1 This item shall consist of preparing the ground surface for topsoil application, removing topsoil from designated stockpiles or areas to be stripped on the site or from approved sources off the site, and placing and spreading the topsoil on prepared areas in accordance with this specification at the locations shown on the plans or as directed by the ENGINEER.

MATERIALS

905-2.1 Topsoil. Topsoil shall be the surface layer of soil with no admixture of refuse or any material toxic to plant growth, and it shall be reasonably free from subsoil and stumps, roots, brush, stones (2 inches or more in diameter), and clay lumps or similar objects. Brush and other vegetation that will not be incorporated with the soil during handling operations shall be cut and removed. Ordinary sod and herbaceous growth such as grass and weeds are not to be removed, but shall be thoroughly broken up and intermixed with the soil during handling operations. Heavy sod or other cover, which cannot be incorporated into the topsoil by discing or other means, shall be removed. The topsoil or soil mixture, unless otherwise specified or approved, shall have a pH range of approximately 5.5 pH to 7.6 pH, when tested in accordance with the methods of testing of the Association of Official Agricultural Chemists in effect on the date of invitation of bids. The organic content shall be not less than 3% nor more than 20% as determined by the wet-combustion method (chromic acid reduction). There shall be not less than 20% nor more than 80% of the material passing the 200 mesh sieve as determined by the wash test in accordance with ASTM C117.

Natural topsoil may be amended by the Contractor with approved materials and methods to meet the above specifications.

905-2.2 Inspection and Tests. Within 10 days following acceptance of the bid, the ENGINEER shall be notified of the source of topsoil to be furnished by the Contractor. The topsoil shall be inspected to determine if the selected soil meets the requirements specified and to determine the depth to which stripping will be permitted. At this time, the Contractor may be required to take representative soil samples from several locations within the area under consideration and to the proposed stripping depths, for testing purposes as specified in paragraph 905-2.1.

CONSTRUCTION METHODS

905-3.1 General. Areas to be topsoiled shall be shown on the plans. If topsoil is

available on the site, the location of the stockpiles or areas to be stripped of topsoil and the stripping depths shall be shown on the plans.

Suitable equipment necessary for proper preparation and treatment of the ground surface, stripping of topsoil, and for the handling and placing of all required materials shall be on hand, in good condition, and approved by the ENGINEER before the various operations are started.

905-3.2 Preparing the Ground Surface. Immediately prior to dumping and spreading the topsoil on any area, the surface shall be loosened by discs or spike-tooth harrows, or by other means approved by the ENGINEER, to a minimum depth of 2 inches to facilitate bonding of the topsoil to the covered subgrade soil. The surface of the area to be topsoiled shall be cleared of all stones larger than 2 inches in any diameter and all litter or other material which may be detrimental to proper bonding, the rise of capillary moisture, or the proper growth of the desired planting. Limited areas, as shown on the plans, which are too compact to respond to these operations shall receive special scarification.

Grades on the area to be topsoiled, which have been established by others as shown on the plans, shall be maintained in a true and even condition. Where grades have not been established, the areas shall be smooth-graded and the surface left at the prescribed grades in an even and compacted condition to prevent the formation of low places or pockets where water will stand.

905-3.3 Obtaining Topsoil. Prior to the stripping of topsoil from designated areas, any vegetation, briars, stumps and large roots, rubbish or stones found on such areas, which may interfere with subsequent operations, shall be removed using methods approved by the ENGINEER. Heavy sod or other cover, which cannot be incorporated into the topsoil by discing or other means shall be removed.

When suitable topsoil is available on the site, the Contractor shall remove this material from the designated areas and to the depth as directed by the ENGINEER. The topsoil shall be spread on areas already tilled and smooth-graded, or stockpiled in areas approved by the ENGINEER. Any topsoil stockpiled by the Contractor shall be rehandled and placed without additional compensation. Any topsoil that has been stockpiled on the site by others, and is required for topsoiling purposes, shall be removed and placed by the Contractor. The sites of all stockpiles and areas adjacent thereto which have been disturbed by the Contractor shall be graded if required and put into a condition acceptable for seeding.

When suitable topsoil is secured off the airport site, the Contractor shall locate and obtain the supply, subject to the approval of the ENGINEER. The Contractor shall notify the ENGINEER sufficiently in advance of operations in order that necessary measurements and tests can be made. The Contractor shall remove the topsoil from approved areas and to the depth as directed. The

topsoil shall be hauled to the site of the work and placed for spreading, or spread as required. Any topsoil hauled to the site of the work and stockpiled shall be rehandled and placed without additional compensation.

905-3.4 Placing Topsoil. The topsoil shall be evenly spread on the prepared areas to a uniform depth of inches after compaction, unless otherwise shown on the plans or stated in the special provisions. Spreading shall not be done when the ground or topsoil is frozen, excessively wet, or otherwise in a condition detrimental to the work. Spreading shall be carried on so that turfing operations can proceed with a minimum of soil preparation or tilling.

After spreading, any large, stiff clods and hard lumps shall be broken with a pulverizer or by other effective means, and all stones or rocks (2 inches or more in diameter), roots, litter, or any foreign matter shall be raked up and disposed of by the Contractor. after spreading is completed, the topsoil shall be satisfactorily compacted by rolling with a cultipacker or by other means approved by the ENGINEER. The compacted topsoil surface shall conform to the required lines, grades, and cross-sections. Any topsoil or other dirt falling upon pavements as a result of hauling or handling of topsoil shall be promptly removed.

METHOD OF MEASUREMENT & BASIS OF PAYMENT

905-4.1 Topsoling shall be considered as incidental to site construction. There will be no direct measurement for payment for topsoiling. The cost of topsoiling shall be included in the cost of related bid items. The price included shall be full compensation for furnishing and spreading of all materials and for all labor, equipment, tools, and incidentals necessary to complete the work prescribed in this item.

TESTING MATERIALS

ASTM C117	Materials Finer than 75 μm (No. 200) Sieve in Mineral Aggregates by Washing

END OF ITEM T-905

ITEM T-908

MULCHING

DESCRIPTION

908-1.1 This item shall consist of furnishing, hauling, placing, and securing mulch on surfaces indicated on the plans or designated by the ENGINEER.

MATERIALS

908-2.1 **Mulch Material.** Acceptable mulch shall be the materials listed below or any approved locally available material that is similar to those specified. Mulch shall be free from noxious weeds, mold, and other deleterious materials. Mulch materials, which contain matured seed of species that would volunteer and be detrimental to the proposed overseeding, or to surrounding farm land, will not be acceptable. Straw or other mulch material which is fresh and/or excessively brittle, or which is in such an advanced stage of decomposition as to smother or retard the planted grass, will not be acceptable.

a. Hay. Hay shall be native hay in an air-dry condition and of proper consistency for placing with commercial mulch blowing equipment. Hay shall be sterile, containing no fertile seed.

b. Straw. Straw shall be the stalks from threshed plant residue of oats, wheat, barley, rye, or rice from which grain has been removed. Furnish in air-dry condition and of proper consistency for placing with commercial mulch blowing equipment. Straw shall contain no fertile seed.

c. Hay Mulch Containing Seed. Hay mulch shall be mature hay containing viable seed of native grasses or other desirable species stated in the special provisions or as approved by the ENGINEER. The hay shall be cut and handled so as to preserve the maximum quantity of viable seed. Hay mulch that cannot be hauled and spread immediately after cutting shall be placed in weather-resistant stacks or baled and stored in a dry location until used.

d. Manufactured Mulch. Cellulose-fiber or wood-pulp mulch shall be products commercially available for use in spray applications.

e. Asphalt Binder. Asphalt binder material shall conform to the requirements of ASTM D977, Type SS-1 or RS-1.

908-2.2 **Inspection.** The ENGINEER shall be notified of sources and quantities of mulch materials available and the Contractor shall furnish him with representative samples of the materials to be used 30 days before delivery to the project. These samples may be used as standards with the approval of the

ENGINEER and any materials brought on the site that do not meet these standards shall be rejected.

CONSTRUCTION METHODS

908-3.1 Mulching. Before spreading mulch, all large clods, stumps, stones, brush, roots, and other foreign material shall be removed from the area to be mulched. Mulch shall be applied immediately after seeding. The spreading of the mulch may be by hand methods, blower, or other mechanical methods, provided a uniform covering is obtained.

Mulch material shall be furnished, hauled, and evenly applied on the area shown on the plans or designated by the ENGINEER. Straw or hay shall be spread over the surface to a uniform thickness at the rate of 2 to 3 tons per acre to provide a loose depth of not less than 1-1/2 inches nor more than 3 inches. Other organic material shall be spread at the rate recommended by the maufacturer. Mulch may be blown on the slopes and the use of cutters in the equipment for this purpose will be permitted to the extent that at least 95% of the mulch in place on the slope shall be 6 inches or more in length. When mulches applied by the blowing method are cut, the loose depth in place shall be not less than one inch nor more than 2 inches.

908-3.2 Securing Mulch. The mulch shall be held in place by light discing, a very thin covering of topsoil, pins, stakes, wire mesh, asphalt binder, or other adhesive material approved by the ENGINEER. Where mulches have been secured by either of the asphalt binder methods, it will not be permissible to walk on the slopes after the binder has been applied. When an application of asphalt binder material is used to secure the mulch, the Contractor must take every precaution to guard against damaging or disfiguring structures or property on or adjacent to the areas worked and will be held responsible for any such damage resulting from the operation.

If the “peg and string” method is used, the mulch shall be secured by the use of stakes or wire pins driven into the ground on 5-foot centers or less. Binder twine shall be strung between adjacent stakes in straight lines and crisscrossed diagonally over the mulch, after which the stakes shall be firmly driven nearly flush to the ground to draw the twine down tight onto the mulch.

908-3.3 Care and repair.

a. The Contractor shall care for the mulched areas until final acceptance of the project. Care shall consist of providing protection against traffic or other use by placing warning signs, as approved by the ENGINEER, and erecting any barricades that may be shown on the plans before or immediately after mulching has been completed on the designated areas.

b. The Contractor shall be required to repair or replace any mulch that is defective or becomes damaged until the project is finally accepted. When, in the judgment of the ENGINEER, such defects or damages are the result of poor workmanship or failure to meet the requirements of the specifications, the cost of the necessary repairs or replacement shall be borne by the Contractor.

c. If the "asphalt spray" method is used, all mulched surfaces shall be sprayed with asphalt binder material so that the surface has a uniform appearance. The binder shall be uniformly applied to the mulch at the rate of approximately 8 gallons per 1,000 square feet, or as directed by the ENGINEER, with a minimum of 6 gallons and a maximum of 10 gallons per 1,000 square feet depending on the type of mulch and the effectiveness of the binder securing it. Bituminous binder material may be sprayed on the mulched slope areas from either the top or the bottom of the slope. An approved spray nozzle shall be used. The nozzle shall be operated at a distance of not less than 4 feet from the surface of the mulch and uniform distribution of the bituminous material shall be required. A pump or an air compressor of adequate capacity shall be used to ensure uniform distribution of the bituminous material.

d. If the "asphalt mix" method is used, the mulch shall be applied by blowing, and the asphalt binder material shall be sprayed into the mulch as it leaves the blower. The binder shall be uniformly applied to the mulch at the rate of approximately 8 gallons per 1,000 square feet or as directed by the ENGINEER, with a minimum of 6 gallons and a maximum of 10 gallons per 1,000 square feet depending on the type of mulch and the effectiveness of the binder securing it.

METHOD OF MEASUREMENT

908-4.1 Mulching shall be measured in acres on the basis of the actual surface area acceptably mulched.

BASIS OF PAYMENT

908-5.1 Payment will be made at the contract unit price per acre for mulching. The price shall be full compensation for furnishing all materials and for placing and anchoring the materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item T-908-5.1 Mulching - per Acre

MATERIAL REQUIREMENTS

ASTM D977 Standard Specification for Emulsified Asphalt

END OF ITEM T-908

APPENDIX ‘A’
PROPOSAL REQUIREMENTS AND CONDITIONS

PROPOSAL REQUIREMENTS AND CONDITIONS

APRON EXPANSION (Phase IV)

GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA

DATE: _____

In compliance with the Invitation to Bid, the undersigned hereby proposes to furnish the materials and perform the work for completion of all items, listed below in strict accordance with the Invitation to Bid, Plans, General Provisions and Special Project Provisions of the Specifications, and all contract documents for the consideration of the price quoted in the following items and agrees, upon receipt of written notice of the acceptance of this Proposal, that within one hundred twenty (120) days after the date of the opening of the Proposals, that it will execute a contract in accordance with the Proposal as accepted, and give the required Performance and Payment Bond with good and sufficient surety or sureties, within fifteen (15) days after receipt of notice of formal award of contract and presentation of the prescribed forms.

Bidder shall complete all line items and total amount of Base Bid. Failure to submit prices and amount for each item shall be cause for rejection of Bid. The OWNER reserves the right to reject any and all bids and to waive any and all technical defects in the execution and submission of any bid. It is the intent of the OWNER to award one contract for all work depending on the availability of local, state, and federal funding.

Contract award will be made on the basis of the lowest responsive qualified bidder for work in the best interest of the OWNER and subject to the availability of local, state, and federal funding. The OWNER reserves the right to reject any or all bids and to waive formalities and technicalities.

IMPORTANT NOTICE

The Contractor's attention is directed to the requirements of Appendix 'B' - Disadvantaged Business Enterprise Program, and the Equal Employment Opportunity Requirements (attached), **which must be submitted with the Proposal**.

The undersigned understands that the entirety of Section 20 and Appendix 'B' and 'C' of these specifications shall be considered a part of the Proposal, and that if we are notified by the ENGINEER that we are the low bidder(s), we shall submit the information required, hereinafter related to Equal Employment Opportunity Requirements, within ten (10) days of such notification.

The Bidder is aware of subcontract requirements to obtain the goal of **12.6%** of Disadvantaged Business participation established for this contract: has completed and

is submitting, along with the bid proposal, required information (see "Disadvantages Business Enterprise Program") describing actions taken in order to achieve such goals; and understands that meeting or exceeding the stated goals is a condition for being awarded this contract.

Failure to submit the above information may be grounds for rejection of our Proposal.

It is understood that all workmanship and materials under all items of work are guaranteed for one year from the date of final acceptance, unless otherwise specified.

Wages not less than the minimum rates of wage, as predetermined for this project by the Secretary of Labor, were used in the preparation of this Proposal.

It is understood that the quantities of work to be completed are approximate only and are intended principally to serve as a guide in evaluating Proposals.

The undersigned agrees that, if awarded the contract(s), it will commence work not later than the date set by the ENGINEER in the Notice(s) to Proceed, and that it will complete the work within the time specified above and in accordance with the Specifications.

Enclosed is security in the amount of 10% of the total base bid, consisting of (Cash, Certified Check, or Bid Bond) _____ Payable to Georgetown County, South Carolina.

_____
Name of Bidder

BY: _____
(Signature)

_____
(Name and Title of Signing Official) (Seal)

SC Contractor's License No. _____

For Corporation, provide Name and Post Office Address for President, Secretary, and Treasurer.

President
Name _____
Address _____
_____
_____

Secretary
Name _____
Address _____
_____
_____

Treasurer
Name _____
Address _____
_____
_____

For Partnership, provide Name and Address for each Partner.

Name _____
Address _____
_____
_____

Name _____
Address _____
_____
_____

Name _____
Address _____
_____
_____

Name _____
Address _____
_____
_____

For Individual, provide Name and Post Office Address.

Name _____
Address _____
_____
_____

Note: Failure to complete blank spaces may be grounds for rejecting bid.

CERTIFICATION OF NON-SEGREGATED FACILITIES

The federally-assisted construction contractor certifies that she or he does not maintain or provide, for his employees, any segregated facilities at any of his establishments and that she or he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally-assisted construction contractor certifies that she or he will not maintain or provide, for his employees, segregated facilities at any of his establishments and that she or he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The federally-assisted construction contractor 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 rooms, work areas, restrooms, and washrooms, restaurants and other eating areas, timeclocks, 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 construction contractor agrees that (except where she or he has obtained identical certifications from proposed subcontractors for specific time periods) she or he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity Clause and that she or he will retain such certifications in his files.

_____ _____

Signature of Contractor Date

_____

Title

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

(Reference: 41 CFR § 60-1.8)

CERTIFICATION OF OFFERER/BIDDER REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS

The applicant must complete the following two certification statements. The applicant must indicate its current status as it relates to tax delinquency and felony conviction by inserting a checkmark (✓) in the space following the applicable response. The applicant agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification in all lower tier subcontracts.

Certifications

1) The applicant represents that it is (✓) is not (✓) a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

2) The applicant represents that it is (✓) is not (✓) is not a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

Signature of Contractor _____ Date _____

Title _____

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

(Reference: Sections 415 and 416 of Title IV, Division L of the Consolidated Appropriations Act, 2014 (Pub. L. 113-76), and similar provisions in subsequent appropriations acts.

DOT Order 4200.6 - Requirements for Procurement and Non-Procurement Regarding Tax Delinquency and Felony Convictions)

TRADE RESTRICTION CLAUSE

The contractor or subcontractor, by submission of an offer and/or execution of a contract, certifies that it:

a. is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR);

b. has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list;

c. has not procured any product nor subcontracted for the supply of any product for use on the project that is produced in a foreign country on said list.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contracts shall be awarded to a contractor or subcontractor who is unable to certify to the above. If the contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on said list for use on the project, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract at no cost to the Government.

Further, the contractor agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in each contract and in all lower tier subcontracts. The contractor may rely on the certification of a prospective subcontractor unless it has knowledge that the certification is erroneous.

The contractor shall provide immediate written notice to the sponsor if the contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The subcontractor agrees to provide written notice to the contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

This certification is a material representation of fact upon which reliance was placed when making the award. If it is later determined that the contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract or subcontract for default at no cost to the Government.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

Signature of Contractor	Date
Title	

(Reference: 49 CFR part 30)

CERTIFICATE REGARDING DEBARMENT AND SUSPENSION
(BIDDER OR OFFEROR)

By submitting a bid/proposal under this solicitation, the bidder or offeror certifies that at the time the bidder or offeror submits its proposal that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this transaction.

Signature of Contractor _____ Date _____

Title _____

(Reference: 2 CFR part 180 (Subpart C), 2 CFR part 1200, DOT Order 4200.5 DOT Suspension & Debarment Procedures & Ineligibility)

Title

LOBBYING AND INFLUENCING FEDERAL EMPLOYEES

The bidder or offeror certifies by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the bidder or offeror, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Signature of Contractor _____ Date _____

Title _____

(Reference: 49 CFR part 20, Appendix A)

CERTIFICATE OF BUY AMERICAN COMPLIANCE FOR MANUFACTURED PRODUCTS

(Non-building construction projects, equipment acquisition projects)

As a matter of bid responsiveness, the bidder or offeror must complete, sign, date, and submit this certification statement with their proposal. The bidder or offeror must indicate how they intend to comply with 49 USC § 50101 by selecting one on the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (not both) by inserting a checkmark (✓) or the letter "X".

☐ Bidder or offeror hereby certifies that it will comply with 49 USC § 50101 by:

a) Only installing steel and manufactured products produced in the United States, or;
b) Installing manufactured products for which the FAA has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing, or;
c) Installing products listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108.

By selecting this certification statement, the bidder or offeror agrees:

1. To provide to the Owner evidence that documents the source and origin of the steel and manufactured product.
2. To faithfully comply with providing US domestic product
3. To furnish US domestic product for any waiver request that the FAA rejects
4. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

☐ The bidder or offeror hereby certifies it cannot comply with the 100% Buy American Preferences of 49 USC § 50101(a) but may qualify for either a Type 3 or Type 4 waiver under 49 USC § 50101(b). By selecting this certification statement, the apparent bidder or offeror with the apparent low bid agrees:

1. To the submit to the Owner within 15 calendar days of the bid opening, a formal waiver request and required documentation that support the type of waiver being requested.
2. That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination may result in rejection of the proposal.
3. To faithfully comply with providing US domestic products at or above the approved US domestic content percentage as approved by the FAA.
4. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

Required Documentation

Type 3 Waiver - The cost of the item components and subcomponents produced in the United States is more that 60% of the cost of all components and subcomponents of the "item". The required documentation for a type 3 waiver is:

a) Listing of all product components and subcomponents that are not comprised of 100% US domestic content (Excludes products listed on the FAA Nationwide Buy American Waivers Issued listing and products excluded by Federal Acquisition Regulation Subpart 25.108; products of unknown origin must be considered as non-domestic products in their entirety)
b) Cost of non-domestic components and subcomponents, excluding labor costs associated with final assembly at place of manufacture.
c) Percentage of non-domestic component and subcomponent cost as compared to total "item" component and subcomponent costs, excluding labor costs associated with final assembly at place of manufacture.

Type 4 Waiver - Total cost of project using US domestic source product exceeds the total project cost using non-domestic product by 25%. The required documentation for a type 4 of waiver is:

a) Detailed cost information for total project using US domestic product
b) Detailed cost information for total project using non-domestic product

False Statements: Per 49 USC § 47126, this certification concerns a matter within the jurisdiction of the Federal Aviation Administration and the making of a false, fictitious or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code.

Date	Signature
Company Name	Title

(Reference: 49 USC § 50101)

FORM OF NON-COLLUSION AFFIDAVIT
(This Affidavit is Part of the Proposal)

STATE OF _____

COUNTY OF _____

_____
being first duly sworn, deposes and says that he/she is

_____
(Sole owner, a partner, president, secretary, etc.)

of _____
the party making the foregoing Proposal that such Proposal is genuine and not collusive or sham; that said Offeror has not colluded, conspired, connived, or agreed directly or indirectly, with any Offeror or person, to put in a sham Proposal, or that such other person shall refrain from submitting a proposal and has not in any manner, directly or indirectly sought by agreement or collusion, or communication or conference, with any person, to fix the proposal price of affiant or any other Offeror, or to fix any overhead, profit or cost element of said proposal price, or of that of any other Offeror or to secure any advantage against OWNER any person interested in the proposed Contract; and that all statements in said Proposal are true; and further, that such Offeror has not, directly or indirectly submitted this proposal, or the contents thereof, or divulged information or date relative to any association or to any member or agent thereof.

_____
Signature of Offeror

Sworn to and subscribed before me this _____ day of _____, 2015.

(Official Seal)

_____
Official Signature of Notary

_____, Notary Public
Notary's Printed or Typed Name

My Commission expires _____, 20__.

ATTACH

“EVIDENCE OF COMPETENCY”

and

“EVIDENCE OF FINANCIAL RESPONSIBILITY”

per

SECTION 20-02 OF THE GENERAL CONDITIONS

Georgetown County Airport
Apron Expansion (Phase IV)
TBI No. 2601-1702

Bidder: _____

Base Bid - Apron Expansion (Phase IV)

Item #	Spec.	Description	Unit Price in Words	Unit	Quantity	Unit Price	Extended Total
1	GC-105	Mobilization		LS	1		
2	P-101	Milling of Existing Pavement (Transition Area)		SY	130		
3	P-152	Unclassified Excavation		CY	900		
4	P-152	Borrow Embankment		CY	1,700		
5	P-152	Undercut Excavation		CY	100		
6	P-156	Temporary Rock Sediment Dike (Complete and in Place)		Each	1		
7	P-156	Temporary Seeding and Mulching		Acre	2		
8	P-156	Temporary Silt Fence		LF	900		
9	P-156	Temporary Sediment Bags, Including Installation and Removal		Each	4		
10	P-156	Concrete Washout Area		Each	1		
11	P-156	Temporary Construction Entrance		Each	1		
12	P-156	Excelsior Matting		SY	200		

Georgetown County Airport
Apron Expansion (Phase IV)
TBI No. 2601-1502

Bidder: _____

Base Bid -Apron Expansion (Phase IV)

Item #	Spec.	Description	Unit Price in Words	Unit	Quantity	Unit Price	Extended Total
13	P-209	Crushed Aggregate Base Course		CY	950		
14	P-401	Bituminous Surface Course		Ton	680		
15	P-601	Fuel Resistent Bituminous Surface Course		Ton	410		
16	P-602	Bituminous Prime Coat		Gal	1,300		
17	P-603	Bituminous Tack Coat		Gal	450		
18	P-620	Marking Removal		SF	1,000		
19	P-620	Apron Marking (Final Application)		SF	1,000		
20	ITEM	Tie-Down Removal		Each	18		
21	ITEM	Tie-Down		Each	36		
22	T-901	Permanent Seeding		Acre	2		
23	T-904	Sodding (Bermuda grass)		SY	288		

Georgetown County Airport
Apron Expansion (Phase IV)
TBI No. 2601-1502

Bidder: _____

Base Bid -Apron Expansion (Phase IV)

24	T-908	Mulching		Acre	2		
25	ITEM	Concrete Encasement for 1-1/4" Conduit		LF	310		

Total - Base Bid: _____

Contract Time: 75 Calendar Days

Liquidated Damages: $1,500.00 per Calendar Day

APPENDIX ‘B’
DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

"APPENDIX B"

DISADVANTAGED BUSINESS ENTERPRISE (DBE)
SUPPLEMENTAL SPECIFICATION

It is the policy of GEORGETOWN COUNTY to ensure nondiscrimination in the award and administration of federally assisted contracts and to use Disadvantaged Business Enterprises (DBEs) in all types of contracting and procurement activities according to State and Federal laws. To that end GEORGETOWN COUNTY has established a DBE program in accordance with regulations of the United States Department of Transportation (USDOT) found in 49 CFR Part 26.

This document, known as the "DBE Supplemental Specifications" includes two main parts:

Part A. "Instructions to Bidders – Pre-award Requirements"
Part B. "Instructions to Contractors – Post-award Requirements."

PART A. INSTRUCTIONS TO BIDDERS – PRE- AWARD REQUIREMENTS

When incorporated into Design Build, and/or Local Public Agency procurements, the terms "bid", "bidder", and "bid letting" shall mean "proposal", "proposer" and "proposal opening."

1. DBE CONTRACT GOAL

A. The DBE participation goal for this contract is **12.6%.**

B. The successful bidder shall exercise all necessary and reasonable steps to ensure that DBEs perform services or provide materials on this contract in an amount that meets or exceeds the DBE contract goal and commitment. Submitting the bid, including electronically, shall constitute an agreement by the bidder that if awarded the contract, it will meet or exceed the DBE contract goal and commitment or make good faith efforts to meet the goal or commitment. Failure to meet the contract goal or make good faith efforts to meet the contract goal will result in the the bid being considered irregular and subject to rejection in accordance with Section 102.8(1)(D) of the SCDOT Standard Specifications for Highway Construction, resulting in the contract being awarded to the next lowest responsible and responsive bidder.

2. DBE COMMITTAL

A. Each bidder shall enter all the information regarding how it intends to meet the DBE goal in the electronic bid folder found on the electronic bidding service website, *Bid Express*, entitled "DBE List." (See paragraph (D) below for non-electronic bid submissions.) The listing of DBEs shall constitute a commitment by the bidder to utilize the listed DBEs, subject to the replacement requirement set forth below in Section 2 of Part B. A DBE listed on the DBE List or DBE Committal Sheet hereinafter shall be referred to as a "committed DBE."

B. In meeting the DBE contract goal, the bidder shall use only certified DBEs included in the "South Carolina Unified Certification Program DBE Directory" (hereinafter referred to as the "Unified DBE Directory.") The DBE.BIN file used for the electronic bidding contains the names of the certified DBEs in the "Unified DBE Directory." For more information on the use of the DBE.BIN file in electronic bidding, see Section 6 below.

C. Failure to provide all information required in the electronic bid or DBE Committal Sheet will make the bid irregular and subject to rejection, resulting in the contract being awarded to the next lowest responsible and responsive bidder.

D. The DBE.BIN file listed for the letting must be downloaded for each particular letting as it is the data source for the DBEs listed in the "Unified DBE Directory" designated for use in the letting. ALL DBE data such as Name, Company ID, and Address must be selected from drop-down lists provided by the DBE.BIN file. If the DBE.BIN file is not downloaded, no data for the drop-down lists will be available. For non-electronic bidding in Design/Build, or Local Public Agency procurements, use the attached DBE Committal Sheet in lieu of the DBE.BIN file.

The following information must be selected or entered in the electronic bid:

(1) The names and addresses of certified DBEs whose services or materials will be used in the contract.

(2) Work Type and Work Code selected from a drop-down list. When one of these is selected, the other will be filled in automatically. **[Note: Only select the Work Type and Work Code for which the selected DBE firm has been certified to perform].**

(3) An Item of work, approximate Quantity of work to be performed or materials to be supplied, Unit (of measurement), Unit Price, and the extended dollar amount of participation by each DBE listed.

(a) Item: The Item is the bid item with which the DBE will be associated and must be selected from the Schedule of (Bid) Items found in the drop-down list. If the proposed work is for only a portion of an Item of work (i.e. hauling of materials, tying of reinforced steel, etc.) an adequate description of this work shall be included in the Note block.

(b) Quantity, Unit, & Unit Price: Initially when an Item is selected, the contract quantity, unit, and the bidder's unit price and extension will appear. If the proposed work is for only a portion of an item as described in (1) above, then the Quantity, Unit Price and /or Extension shall be changed to reflect the actual amount of work committed to the DBE. The Unit (of measurement) cannot be changed.

(4) The bidder must also submit a copy of a signed statement or quote from each of the DBEs listed in the DBE List folder of the electronic bid or DBE committal sheet. The signed statements or quotes should verify the items, quantities, units, unit prices, and dollar values listed in the DBE List folder of the electronic bid or DBE committal sheet. COPIES OF THE SIGNED STATEMENTS MUST BE SUBMITTED TO GEORGETOWN COUNTY PURCHASING DEPARTMENT WITHIN FOUR (4) CALENDAR DAYS OF THE BID LETTING from the apparent low bidder. Should the apparent low bid be rejected for failing to meet the goal, the next apparent low bidder will have three (3) calendar

days from notification to submit the signed quotes. GEORGETOWN COUNTY will accept facsimiles of the verified statements with the caveat that the bidder must furnish the original document to GEORGETOWN COUNTY upon request. Signed quotes must be on the DBEs letterhead and contain the following information: date, printed name, address, and phone number of the authorized individual providing the quote, project name and identification number, quote needs to be addressed to contractor from the DBE, and identify specific services being performed and/or material being supplied.

3. GOOD FAITH EFFORTS REQUIREMENTS

A. Requirements for Submission for Approval of a Good Faith Effort. If the bidder does not meet the DBE contract goal through the DBE committals submitted with the bid, it is the bidder's responsibility to request, in writing (faxes and emails are acceptable), a good faith effort review by 5:00 pm of the next business day after they submit their bid. Bidder must submit additional information to satisfy to GEORGETOWN COUNTY that good faith efforts have been made by the bidder in attempting to meet the DBE contract goal. **THIS SUPPORTING INFORMATION/DOCUMENTATION MUST BE FURNISHED TO GEORGETOWN COUNTY IN WRITING WITHIN THREE (3) CALENDAR DAYS OF THE BID LETTING.** One complete set and five (5) copies of this information must be received by Purchasing Department no later than 12:00 noon of the third calendar day following the bid letting. Where the information submitted includes repetitious solicitation letters, it will be acceptable to submit a sample representative letter along with the list of the firms being solicited. The documented efforts listed in item (C.) below are some items GEORGETOWN COUNTY will consider in evaluating the bidder's good faith efforts. The documentation may include written subcontractor quotations, telephone log notations of verbal quotations, or other types of quotation documents.

B. Failure to Submit Required Material. If the bidder fails to provide this information by the deadline, the bid is considered irregular and may be rejected.

C. Evaluation of a Good Faith Effort. GEORGETOWN COUNTY may consider the following factors in judging whether or not the bidder made adequate and acceptable good faith efforts to meet the DBE contract goal:

(1) Did the bidder attend any pre-bid meetings that were scheduled by GEORGETOWN COUNTY to inform DBEs of subcontracting opportunities?

(2) Did the bidder provide solicitations through all reasonable and available means (e.g. posting a request for quotes from DBE subcontractors on SCDOT Construction Extranet webpage; attendance at pre-bid meetings, advertising and/or written notices at least 10 days prior to the letting; or showing the bidder provided written notice to all DBEs listed in the "Unified DBE Directory" that specialize in the areas of work in which the bidder will be subcontracting).

(3) Did the bidder follow-up initial solicitations of interest by contacting DBEs to determine with certainty whether they were interested or not? If a reasonable amount of DBEs in the area of work do not provide an intent to quote, or there are no DBEs that specialize in the area of work to be subcontracted, did the bidder call GEORGETOWN COUNTY Purchasing Department to give notification of the bidder's inability to obtain DBE quotes?

(4) Did the bidder select portions of the work to be performed by DBEs in order to increase the likelihood of meeting the contract goal? This includes, where appropriate, breaking out contract items of work into economically feasible units to facilitate DBE participation, even when the bidder might otherwise perform these items of work with its own forces.

(5) Did the bidder provide interested DBEs with adequate and timely information about the plans, specifications, and requirements of the contract?

(6) Did the bidder negotiate in good faith with interested DBEs, or reject them as unqualified without sound reasons based on a thorough investigation of their capabilities? Any rejection should be noted in writing with a description as to why an agreement could not be reached. The fact that the bidder has the ability or desire to perform the work with its own forces will not be considered as sound reason for rejecting a DBEs quote.

(7) Was a quote received from an interested DBE, but rejected as unacceptable because it was not the lowest quote received? The fact that the DBE firm's quotation for the work is not the lowest quotation received will not in and of itself be considered as a sound reason for rejecting the quotation as unacceptable, as long as the quote is not unreasonable.

(8) Did the bidder specifically negotiate with non-DBE subcontractors to assume part of the responsibility to meet the contract goal when the work to be sublet includes potential for DBE participation?

(9) Any other evidence that the bidder submits which demonstrates that the bidder has made reasonable good faith efforts to include DBE participation.

(10) The DBE commitments submitted by all other bidders who were able to meet the DBE contract goal.

(11) Did the bidder contact SCDOT/GEORGETOWN COUNTY for assistance in locating certified DBEs?

D. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy DBE contract goals.

E. GEORGETOWN COUNTY may give the bidder an opportunity to cure any deficiencies resulting from a minor informality or irregularity in the DBE commitment or waive any such deficiency when it is in the best interest of the State. A minor informality or irregularity is one which is merely a matter of form or is some immaterial variation from the exact requirements of the invitation for bids having no effect or merely a trivial or negligible effect on DBE contract goal, quality, quantity, or delivery of the supplies or performance of the contract, and the correct or waiver of which would not be prejudicial to bidders.

4. DETERMINATION AND RECONSIDERATION PROCEDURES

A. After the letting, GEORGETOWN COUNTY will determine whether or not the low bidder has met the DBE participation contract goal or made good faith efforts to meet the goal. If GEORGETOWN COUNTY determines that the apparent low bidder failed to meet the goal, did not demonstrate a good faith effort to meet the goal, or meet the requirements of a commercially useful function, GEORGETOWN COUNTY will notify the apparent low bidder of its determination by email and by US Mail or hand-delivery. The apparent low bidder may request a reconsideration of this determination.

B. The bidder must make a request for reconsideration in writing within three (3) calendar days of receipt of the determination. Within six (6) calendar days of receipt of the determination, the bidder must provide written documentation to GEORGETOWN COUNTY supporting its position. Only documentation dated within three (3) calendar days of the bid letting may be used in support of its position. No DBE goal efforts performed after 3 calendar days of the bid will be allowed as evidence. If the bidder fails to request a reconsideration with three (3) calendar days, the determination shall be final.

C. To reconsider the bidder's DBE commitment or good faith efforts, GEORGETOWN COUNTY will designate a panel of three (3) GEORGETOWN COUNTY employees, who did not take part in the original determination (hereinafter referred to as the "Reconsideration Panel"). The Reconsideration Panel will contact the bidder and schedule a meeting. The Reconsideration Panel will make reasonable efforts to accommodate the bidder's schedule; however, if the bidder is unavailable or not prepared for a hearing within ten (10) calendar days of receipt of GEORGETOWN COUNTY original written determination, the bidder's reconsideration rights will be considered to have been waived.

D. The meeting will be held at the GEORGETOWN COUNTY administrative offices. The bidder will be allowed up to two (2) hours to present written or oral evidence supporting its position.

E. The Reconsideration Panel will issue a written report and recommendation to the GEORGETOWN COUNTY ADMINISTRATOR. GEORGETOWN COUNTY shall not award the contract until the GEORGETOWN COUNTY ADMINISTRATOR issues a decision or the bidder waives its reconsideration right either through failure to request reconsideration or failure to be available for the meeting. The GEORGETOWN COUNTY ADMINISTRATOR will notify the bidder of the final decision in writing.

5. CONSEQUENCES OF FAILURE TO COMPLY WITH DBE PROVISIONS

A. Failure on the part of the bidder to meet the DBE contract goal or to demonstrate good faith efforts to meet the DBE contract goal will result in the bid being declared irregular and may be rejected resulting in the contract being awarded to the next lowest responsible and responsive bidder. Upon rejection, the award may be made to the next lowest responsible and responsive bidder.

B. After bid letting, but prior to award, GEORGETOWN COUNTY reserves the right to cancel the project, or any or all bids or proposals may be rejected in whole or part, when it is in the best interest of the State.

6. DIRECTORY OF SOUTH CAROLINA CERTIFIED DISADVANTAGED BUSINESS ENTERPRISES

A. The electronic DBE.BIN file found on the electronic bidding service website, *Bid Express*, contains data from the "Unified DBE Directory" approved for use in each particular letting. **The file must be downloaded for each letting as the directory approved for use in each letting is updated prior to the letting.** The bidder is advised that this directory pertains only to DBE certification and not to qualifications. It is the bidder's responsibility to

determine the actual capabilities and/or limitations of the certified DBE firms. For non-electronic bid submissions, the directory can be found at http://www.scdot.org/doing/businessDevelop_SCUnified.aspx.

B. In meeting the DBE participation contract goal, the bidder shall use only DBEs that are included in the "Unified DBE Directory" contained in the DBE.BIN file, or on-line, current for the month the bid is submitted. The bidder may only count toward the DBE goal work in the areas for which the DBE has been certified, unless prior written approval from GEORGETOWN COUNTY is obtained. The bidder and the DBE must jointly apply to GEORGETOWN COUNTY for approval of work in an area of work other than that in which the DBE has been certified. The requested work must be in an area related to the area of work in which the DBE has been certified. Such requests must be submitted in writing to GEORGETOWN COUNTY no later than ten (10) calendar days prior to the date of the letting. GEORGETOWN COUNTY has the right to approve or disapprove the request. GEORGETOWN COUNTY will give the bidder and the DBE written notice of his decision no later than five (5) calendar days prior to the date on which bids are received. If approved, a copy of the written approval must accompany the submission of the subcontractor's quote.

C. Certification of a DBE for work in a certain area of work or approval to perform work in a related area shall not constitute a guarantee that the DBE will successfully perform the work or that the work will be performed completely. Such certification or approval shall only imply that the successful completion of the work by the DBE can count toward satisfying the DBE contract goal in accordance with the counting rules set forth in 49 CFR Part 26 (see Section 3 of Part B below.)

D. The bidder may print a copy of the "Unified DBE Directory" from SCDOT web page at http://www.scdot.org/doing/businessDevelop_SCUnified.aspx.

7. ADDITIONAL DBE PARTICIPATION

The bidder is strongly encouraged to obtain the maximum amount of DBE participation feasible on the contract. Any DBE participation in excess of the DBE contract goal shall also be included in the DBE Quarterly Reports.

8. CONTRACTOR'S REQUIRED SUBMISSION: The prospective Contractor must submit the following information/forms concerning DBE participation in the contract with the bid.

- ☐ Exhibit 1 DBE Committal Sheet
- ☐ Exhibit 2 DBE Subcontractor Data
- ☐ Exhibit 3 DBE Contact Schedule
- ☐ Exhibit 4 Identified Unavailable DBEs
- ☐ Include Copy of each DBE's SCDOT Unified Certification
- ☐ *Good Faith Effort Documentation

PART B. INSTRUCTIONS TO CONTRACTORS – POST-AWARD REQUIREMENTS

1. CONTRACTOR'S OBLIGATIONS

A. 49 CFR 26. The Contractor shall carry out the applicable requirements of 49 CFR Part 26 and these DBE Supplemental Specifications in the award and administration of this contract. Failure by the Contractor to carry out these requirements is a material breach of the contract, and may result in the termination of the contract or such other remedy as GEORGETOWN COUNTY deems appropriate.

B. Meeting both the Goal and Commitment or Making Good Faith Efforts to Meet the Goal and Commitment. It is the Contractor's responsibility to meet or make good faith efforts to meet the DBE contract goal and commitments. Failure to meet the goal or commitments to the specific DBEs listed on the committal sheet or to demonstrate good faith efforts to meet the goal or commitments may result in any one or more of the following sanctions:

(1) Withholding monthly progress payments;
(2) Declaring the Contractor in default;
(3) Assessing sanctions in the amount of the difference in the DBE contract committal and the actual payments made to each certified DBE;
(4) Disqualifying the Contractor from bidding pursuant to Regulation 63-306, Volume 25A, of the S. C. Code of Laws; and/or

C. Using the DBEs shown on the Committal Sheet to Perform the Work. The Contractor must utilize the specific DBEs listed on the "DBE Committal Sheet" to perform the work and supply the materials for which each is listed unless the Contractor obtains prior written approval from GEORGETOWN COUNTY to perform the work with other forces or obtain the materials from other sources as set forth in Section 2 below. The Contractor shall not be entitled to any payment for such work or material unless it is performed or supplied by the listed DBE or, with prior written approval of GEORGETOWN COUNTY, by other forces (including those of the Contractor). Failure to meet a commitment to a specific DBE may result in the sanctions listed in Section 1(B) above, unless prior written approval is obtained for replacement of the committed DBE.

When GEORGETOWN COUNTY makes changes that result in the reduction or elimination of work to be performed by a committed DBE, the Contractor will not be required to seek additional participation. When GEORGETOWN COUNTY makes changes that result in additional work to be performed by a DBE based upon the Contrator's commitment, the DBE shall participate in additional work to the same extent as the DBE participated in the original work.

D. Incorporating DBE Supplemental Provisions in Subcontracts. The Contractor shall make available, at the request of GEORGETOWN COUNTY, a copy of all DBE subcontracts. The Contractor shall ensure that all subcontracts or agreements with DBEs to supply labor or materials require that the subcontract and all lower tier subcontracts be performed in accordance with these DBE Supplemental Specifications. The contractor is advised to insert the following provision in each subcontract or agreement:

"This contract or agreement shall be performed in accordance with the requirements of the GEORGETOWN COUNTY DBE Project Specification".

2. REPLACEMENT OF CERTIFIED DBEs

A. Requirement for Replacement. The following shall apply to replacement of a DBE listed on the "DBE Committal Sheet":

(1) *When a DBE listed on the DBE committal sheet (hereafter referred to as a "committed DBE") is unable or unwilling to perform the work in accordance with the subcontract,* the Contractor shall follow the replacement procedures in Section 2(B) below. Failure on the part of the Contractor to comply with this requirement shall constitute a breach of contract and may be cause for the imposition of the sanctions set forth in Section 1(B) above.

(2) *When a committed or non-committed DBE is decertified or removed from the SC Unified DBE Directory after execution of a valid subcontract agreement with the Contractor*:

(a) The Contractor may continue to utilize the decertified DBE on the contract and receive credit toward the DBE contract goal for the DBEs work unless the Contractor is implicated in the DBE decertification. However, the Contractor is encouraged to replace the decertified DBE with a certified DBE where feasible.

(b) If a *committed or non-committed* DBE is removed from the SC Unified DBE Directory due to graduation from the DBE program, the Contractor may continue to utilize the graduated DBE on the contract and receive credit toward the DBE contract goal for the DBEs work.

(3) *When a committed DBE is decertified or removed from the SC Unified DBE Directory prior to execution of a valid subcontract agreement with the Contractor, the* Contractor shall follow the replacement procedures in Section 2(B) below. Failure on the part of the Contractor to comply with this requirement shall constitute a breach of the contract and may be cause for the imposition of the sanctions set forth in Section 1(B) above.

B. Replacement Procedures. In order to replace a *committed* DBE, the Contractor must obtain prior written approval from GEORGETOWN COUNTY. Prior to requesting GEORGETOWN COUNTY's approval to terminate and/or substitute a committed DBE, the Contractor is to give notice to the DBE subcontractor in writing (certified mail) with a copy provided to GEORGETOWN COUNTY Purchasing Department. The purpose of this notice is to both inform the DBE subcontractor of the Contractor's intent to request GEORGETOWN COUNTY's approval to terminate and/or substitute as well as to outline the reasons for the request. The DBE subcontractor shall be given five (5) calendar days from receipt of notice to provide a written response stating either its consent or its reasons why it objects to the proposed termination. On a case by case basis and at GEORGETOWN COUNTY's sole discretion, a shorter response period than five calendar days may be allowed as a matter of public necessity. If GEORGETOWN COUNTY determines a shorter response period is

justified, the contractor and committed DBE will be advised in writing. In no case shall the Contractor's ability to negotiate a more advantageous contract with another subcontractor be considered a valid basis for replacement. If the Contractor obtains the GEORGETOWN COUNTY's approval for the replacement, the Contractor shall replace the committed DBE with another certified DBE or make good faith efforts to do so as set forth in Section 2(C) below. Any DBE who is certified at the time of replacement may be used as a replacement. If the GEORGETOWN COUNTY does not approve of the replacement, the Contractor shall continue to use the *committed* DBE in accordance with the contract. Failure to do so may constitute cause for imposition of any of the sanctions set forth in Section 1(B) above.

C. Good Faith Efforts. After approval for replacement is obtained, if the Contractor is not able to find a replacement DBE, the Contractor shall provide the GEORGETOWN COUNTY with documentation of its good faith efforts to find a replacement. This documentation shall include, but is not limited to, the following:

(1) Copies of written notification to certified DBEs that their interest is solicited in subcontracting the work defaulted by the previous certified DBE or in subcontracting other items of work in the contract.

(2) Statement of efforts to negotiate with certified DBEs for specific subbids including at a minimum:

(a) Names, addresses and telephone numbers of certified DBEs who were contacted;
(b) Description of the information provided to certified DBEs regarding the plans and specifications for portions of the work to be performed;
(c) Statement of why additional agreements with certified DBEs were not reached.

(3) For each certified DBE contacted but rejected, the reasons for the Contractor's rejection. Failure to find a replacement DBE at the original price is not in itself evidence of good faith.

(4) Documentation demonstrating that the Contractor contacted GEORGETOWN COUNTY for assistance in locating certified DBEs willing to take over that portion of work or do other work on the contract.

If GEORGETOWN COUNTY determines that the Contractor has made good faith efforts to replace the committed DBE with another certified DBE, then the remaining portion of the DBEs work shown on the "DBE Committal Sheet" can be completed by the Contractor's own forces or by a non-DBE subcontractor approved by GEORGETOWN COUNTY. The Contractor will not be required to make up that part of the DBE goal attributable to the portion of work not completed by the committed DBE, and this shortfall in meeting the DBE goal will be waived by GEORGETOWN COUNTY.

If GEORGETOWN COUNTY determines that the Contractor has not made good faith efforts to replace the committed DBE with another certified DBE, such failure may constitute cause for imposition of any of the sanctions set forth in Section 1(B) above.

D. Payment from GEORGETOWN COUNTY. The Contractor shall not be entitled to payment for work or material committed to a committed DBE unless:

(1) The work is performed by the *committed* DBE; or
(2) The work is performed by another certified DBE after GEORGETOWN COUNTY has given approval to replace the committed DBE as provided above; or
(3) The work is performed by a non-DBE after GEORGETOWN COUNTY determines that the Contractor has demonstrated good faith efforts to replace the committed DBE as provided above.

3. COUNTING CERTIFIED DBE PARTICIPATION TOWARD MEETING THE DBE GOAL

DBE participation shall be measured by the actual, verified payments made to DBEs subject to the following rules (all references to "DBE" herein shall mean "certified DBE"). The Contractor is bound by these rules in regard to receiving and reporting credit toward the DBE contract goal. The Contractor shall report on DBE Quarterly Reports only the amounts properly attributable toward the goal under these rules.

A. General Counting Rules.

(1) The entire amount of that portion of a construction contract (or other contract not covered by paragraph A(2) of this section) that is performed by the DBEs own forces may be counted toward the goal. The cost of supplies and materials obtained by the DBE for the work of the contract, including supplies purchased or equipment leased by the DBE (except supplies and equipment the DBE subcontractor purchases or leases from the prime contractor or its affiliate) can be counted toward the goal.
(2) When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the subcontractor is also a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward the DBE goals.
(3) The Contractor can count expenditures to a DBE only if the DBE is certified by SCDOT, except as provided in section 2(A)(2) above, in the event a DBE loses eligibility status after a subcontract is signed.
(4) The Contractor can count expenditures to a DBE only after the DBE has actually been paid.

B. Joint Ventures. When a DBE performs as a participant in a joint venture, the portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the DBE performs with its own forces can be counted toward DBE goals. A joint venture must be approved by GEORGETOWN COUNTY prior to start of the contract.

C. Commercially Useful Function. Expenditures to a DBE contractor can be counted toward DBE goals only if the DBE is performing a commercially useful function on that contract:

(1) A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, GEORGETOWN COUNTY will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of the work, and other relevant factors.

(2) A DBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation. In determining whether a DBE is such an extra participant, GEORGETOWN COUNTY will examine similar transactions, particularly those in which DBEs do not participate.

(3) If a DBE does not perform or exercise responsibility for at least 30 percent of the total cost of its contract with its own work force, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, GEORGETOWN COUNTY will presume that it is not performing a commercially useful function.

(4) When a DBE is presumed not to be performing a commercially useful function as provided in paragraph (3) of this section, the DBE may present evidence to rebut this presumption. GEORGETOWN COUNTY may determine that the firm is performing a commercially useful function given the type of work involved and normal industry practices.

(5) GEORGETOWN COUNTY's decisions on commercially useful function matters are subject to review by the Federal Highway Administration, but are not administratively appealable to the USDOT.

D. Special Rules for Trucking Companies. GEORGETOWN COUNTY will use the following rules to determine whether a DBE trucking company is performing a commercially useful function and what portion of the DBE work can be counted toward DBE goals:

(1) ***DBE must control all work.*** To be considered as performing a commercially useful function, the DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting DBE goals.

(2) ***DBE must "own" at least one truck***. The DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the project. For purposes of this section, a DBE will be considered to "own" a truck if:

a) the truck is titled in the DBEs name; or,

b) the DBE leases the truck under a valid lease-to-own agreement and the driver of the truck is an employee of the DBE.

The DBE must submit documentation to GEORGETOWN COUNTY to establish the number of trucks the DBE owns, operates and insures. The DBE

must submit the documentation to GEORGETOWN COUNTY's Purchasing Department at the time of certification, annual reporting on certification requirements, or at any time during the year that the DBE obtains additional trucks.

(3) ***Counting DBE trucking toward DBE goal***. The Contractor can count toward DBE goals the total value of the transportation services the DBE provides using trucks the DBE owns, insures, and operates using drivers the DBE employs.

(4) ***Counting subcontracted DBE trucking toward DBE goal.*** The DBE may subcontract with another DBE firm, including an owner-operator who is certified as a DBE, to provide trucks on a project. In this case, the Contractor may count toward the DBE goal the total value of the transportation services provided by the DBE subcontractor.

(5) ***Counting subcontracted non-DBE trucking toward the goal.*** The DBE may lease trucks from a non-DBE firm, including an owner-operator, to provide trucks on a project. Prior to beginning work, the DBE must provide GEORGETOWN COUNTY's Resident Construction Engineer with a list identifying all DBE and non-DBE trucks and truck numbers that will be used on the project. In this case, the Contractor may count toward the DBE goal the total value of the transportation services provided in each quarter by the non-DBE trucks, not to exceed the value of the transportation services provided by DBE-owned trucks in that quarter. For example, in a given quarter, if DBE-owned trucks provide transportation services of $50,000, while non-DBE trucks provide transportation services of $75,000, a maximum of $100,000 can be counted toward the DBE goal in that quarter.

For purposes of this paragraph (5), a lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the lease truck. Leased trucks must display a placard with the name and USDOT identification number of the DBE leasing the truck. The placard must be legible and visable when standing at least 15 feet from the driver's side of the truck. It may be affixed to the side of the truck or inside the cab window as long as it does not interfere with the safe operation of the truck. See example below.

Sample placard:

Operated by: Bell's Trucking,LLC USDOT 123456

NOTE: DBE firms may not receive credit for DBE participation when leasing non-DBE owned trucks from the Prime contractor with whom the DBE firm is subcontracted as 49 CFR 26.55(a)(1) applies.

E. DBE Manufacturers and Dealers. The Contractor can count expenditures with DBEs for materials or supplies toward DBE goals in accordance with the following rules:

(1) *DBE Manufacturers*. If the materials or supplies are obtained from a DBE manufacturer, the Contractor can count 100 percent of the cost of the materials or supplies toward DBE goals. For purposes of this paragraph, a manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications. The DBE must be listed as a "manufacturer" in the "South Carolina Unified DBE Directory" to be considered a manufacturer for purposes of these counting rules.

(2) *DBE Dealers*. If the materials or supplies are purchased from a DBE regular dealer, the Contractor can count 60 percent of the cost of the materials or supplies toward DBE goals. For purposes of this section, a regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. The DBE must be listed as a "dealer" in the South Carolina Unified DBE Directory to be considered a dealer for purposes of these counting rules.

(3) *DBE Brokers*. With respect to materials or supplies purchased from a DBE which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of material or supplies required on a job site, toward DBE goals.

F. Special Rules for Design Build and Local Public Agency Contracts

(1) When the Design Build team changes work that results in the reduction or elimination of work that the Design Build team committed to be performed by a DBE, the Design Build team shall seek additional participation by DBEs equal to the reduced DBE participation cause by the change.

4. JOINT CHECKS.

The GEORGETOWN COUNTY must approve all requests for a Contractor to issue and use joint checks with a DBE. The following conditions apply:

A. The DBE must submit a request to GEORGETOWN COUNTY which includes a formalized agreement between all parties that specify the conditions under which the arrangement will be permitted;

B. The DBE remains responsible for all other elements of 49 CFR 26.55(c)(1). GEORGETOWN COUNTY must clearly determine that independence is not threatened because the DBE retains final decision making responsibility;

C. There can be no requirement by the prime contractor that a DBE use a specific supplier nor the prime contractor's negotiated unit price.

5. REPORTS

The Contractor shall furnish to GEORGETOWN COUNTY the following reports and information. THIS REQUIREMENT APPLIES REGARDLESS OF WHETHER THERE IS A CONTRACT GOAL ASSIGNED TO THE CONTRACT.

A. DBE Quarterly Reports. The Contractor shall provide to GEORGETOWN COUNTY, DBE Quarterly Reports showing the dollar amount of payments to each certified DBE. The Contractor and each DBE that received payment must sign the report. The Contractor's and DBE's signature on the Quarterly Report shall constitute certification that the DBE has performed the work and that the Contractor is entitled to credit toward the DBE goal for the amount shown in accordance with the counting rules set forth in Section 3 above. The report shall include the amount paid each DBE for the quarter and the total amount paid to each DBE on the contract. The report must include DBE subcontractors, hauling firms, and suppliers. The report shall be submitted in duplicate to GEORGETOWN COUNTY by the 15th of the month after each calendar quarter (January, April, July, and October 15). Failure to submit the quarterly report may result in the withholding of monthly progress and/or final payment. The Quarterly Report must be submitted for each quarter even if no payments have been made to a DBE in that quarter. When no payments have been made to a DBE in a quarter, DBEs are not required to sign the report.

B. Trucker's Reports. All DBE haulers must complete and submit a DBE Trucker's Report along with the DBE quarterly report when the DBE leases trucks from another firm. The DBE hauler must list all trucks leased, payments made to the lessee during the quarter, and identify whether each leased truck is owned by a certified DBE or non-DBE. DBE Haulers must also submit one copy of each lease agreement to GEORGETOWN COUNTY prior to the start of work for each truck leased. A lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE.

C. Other Documents. Upon request of GEORGETOWN COUNTY, the Contractor and all subcontractors shall furnish documents, including subcontracts, necessary to verify the amount and costs of the materials or services provided by certified DBE suppliers or subcontractors. The Contractor shall keep the documents that verify this information for at least three years from the date of final close-out of the contract. Failure to provide these documents upon request may result in the withholding of monthly progress and/or final payment or disqualifying the Contractor from bidding pursuant to R. 63-306, South Carolina State Regulations.

6. CONTRACT COMPLETION – DETERMINATION OF WHETHER CONTRACTOR HAS MET THE GOAL OR MADE GOOD FAITH EFFORTS

A. Review by GEORGETOWN COUNTY. After receipt of the final DBE Quarterly Reports, GEORGETOWN COUNTY will review the necessary contract documentation to determine whether the Contractor has met the DBE commitments and contract goal.

B. Notification of Failure to Meet Goal. If the documentation indicates that the Contractor has not met the DBE commitments and contract goal, GEORGETOWN COUNTY will notify the Contractor in writing and request documentation of the Contractor's good faith efforts to meet the goal.

C. Determination of Good Faith Efforts. The Contractor shall submit documentation demonstrating good faith efforts to meet the contract commitments and goal to GEORGETOWN COUNTY within thirty (30) calander days of the date of the "Notification of Failure to Meet Goal." GEORGETOWN COUNTY will provide the Contractor with written notice of GEORGETOWN COUNTY's determination whether good faith efforts have been demonstrated.

D. Request for Reconsideration. If the Contractor disagrees with GEORGETOWN COUNTY's determination of post construction compliance, the Contractor may request a reconsideration by filing a written request with GEORGETOWN COUNTY within ten (10) calendr days after receipt of the determination. The Contractor shall submit any additional documentation that it wishes to be considered in support of its position within ten (10) calendar days of its request for reconsidertation. If the Contractor fails to request a reconsideration within ten (10) calendar days, the determination shall be final. If the Contractor requests reconsideration, GEORGETOWN COUNTY will appoint a Reconsideration Official who did not take part in the original determination to review the decision and supporting documentation (hereinafter referred to as the "Reconsideration Official"). FHWA may participate in the review process. The Reconsideration Official will contact the Contractor and schedule a meeting with the Contractor. The meeting will be held at GEORGETOWN COUNTY Administration Offices in Georgetown, SC. At the meeting, the Contractor will have an opportunity to present oral and written evidence to demonstrate that good faith efforts were made to meet the DBE commitments and contract goal. The Reconsideration Official may also consider evidence presented by GEORGETOWN COUNTY at the same meeting. After the meeting, the Reconsideration Official will issue a written report and recommendation to GEORGETOWN COUNTY. GEORGETOWN COUNTY shall make the final decision on the issue. GEORGETOWN COUNTY will notify the Contractor of the final decision in writing.

Note:
49 CFR 26 defines days to mean calendar days. In computing any period of time described in this part, the day from which the period begins to run is not counted, and when the last day of the period is a Saturday, Sunday, or Federal holiday, the period extends to the next day that is not a Saturday, Sunday, or Federal holiday. Similarly, in circumstances where the recipient's offices are closed for all or part of the last day, the period extends to the next day on which the agency is open.

EXHIBIT 1

May 2014

DISADVANTAGED BUSINESS ENTERPRISES (DBE) COMMITTAL SHEET

Information must be shown on this sheet as required by the supplemental specifications entitled ""*Disadvantaged Business Enterprises (DBE) Supplemental Specification*" included in this proposal.

FAILURE TO PROVIDE ALL INFORMATION REQUIRED ON THIS FORM MAY RESULT IN THE AWARD BEING MADE TO THE NEXT LOWEST RESPONSIBLE AND RESPONSIVE BIDDER. FOR DESIGN BUILD PROJECTS, FAILURE TO PROVIDE ALL INFORMATION REQURIED ON THIS FORM MAY RESULT IN SANCTION IN ACCORDANCE WITH PART B OF THE DBE SUPPLEMENTAL SPECIFICATIONS.

[1]Name & Address of DBE's (Subcontractor or Supplier)	[2]Percent	[3]Description of Work and Approximate Quantity [6](show percent when appropriate)				[5]Dollar Value
		Item	Qty.	Unit	[4]Unit Price	

BASED ON THE ABOVE, BIDDER'S TOTAL COMMITTAL FOR THIS CONTRACT: _____%

THE CONTRACT DBE GOAL LISTED IN PART A OF THE SUPPLEMENTAL SPECIFICATION: _____%

1 The designation of Firm A and/or B is not considered acceptable. I hereby certify that this company has communicated with and received quotes from the DBE's listed above and that they are willing to perform the work as listed above and that this company is committed to utilizing the above firm(s) on this contract.

2 Percent – show percent of total contract amount committed to each DBE listed.

3 All information requested must be included unless item is listed in proposal on a lump sum basis.

4 Unit Price – show unit price quoted by DBE.

5 Dollar Value – extended amount based on Quantity and Unit Price.

6 Applies to lump sum items only.

The form may be reproduced or additional sheets added in order to provide all requested information.

SWORN to before me this _____
day of _____, 20

_____(SEAL)
Notary Public for _____
My commission expires: _____

_____
Company

By: _____

Title: _____

EXHIBIT 2

DBE SUBCONTRACTOR DATA
Company Name and Address: _____ _____ _____ Owner's Name/Contact Person: _____ Telephone # ( ) _____ Fax # ( ) _____ DBE Status MBE _____ WBE _____ Certifying Agency and Address: _____ _____ _____ On-Site Certification Visit Performed By: _____ Date: _____ Date of Initial Certification: _____
Company Name and Address: _____ _____ _____ Owner's Name/Contact Person: _____ Telephone # ( ) _____ Fax # ( ) _____ DBE Status MBE _____ WBE _____ Certifying Agency and Address: _____ _____ _____ On-Site Certification Visit Performed By: _____ Date: _____ Date of Initial Certification: _____
Company Name and Address: _____ _____ _____ Owner's Name/Contact Person: _____ Telephone # ( ) _____ Fax # ( ) _____ DBE Status MBE _____ WBE _____ Certifying Agency and Address: _____ _____ _____ On-Site Certification Visit Performed By: _____ Date: _____ Date of Initial Certification: _____

EXHIBIT 3

DBE CONTRACT SCHEDULE

Submitting Contractor: _____
Project Name and Number: _____
Date: _____

Date	MBE/ WBE	Name and Address of Person Contacted	Telephone Number	Type of Work to be Performed	Proposal Price

I, _____, _____ certify that the
(Name) (Title)
above identified contractors were contacted to obtain qualified MBE/WB quotations for the _____
_____ Project, also listed above.

SIGNED: _____

EXHIBIT 4

IDENTIFIED UNAVAILABLE DBEs

Submitting Contractor: _____
Project Name and Number: _____
Date: _____

Date	MBE/ WBE	Name and Address of Person Contacted	Telephone Number	Type of Work to be Performed

I, _____, _____ certify that the
(Name) (Title)
above identified contractors were contacted to obtain qualified MBE/WB quotations for the _____
_____ Project, also listed above, and that each ahs states unavailability or non-interest in performance of work.

SIGNED: _____

APPENDIX ‘C’
FEDERAL REQUIREMENTS

APPENDIX 'C'

FEDERAL CONTRACT PROVISIONS

GENERAL

The following Contract Clauses implement federal contracting requirements for Airport Improvement Program (AIP) and Obligated Sponsors and shall apply to this Contract.

GENERAL CIVIL RIGHTS PROVISIONS
Sponsor Contracts

The Contractor agrees to comply with pertinent statutes, Executive Orders and such rules as are promulgated to ensure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance.

This provision binds the Contractor and Subcontractors from the bid solicitation period through the completion of the contract. This provision is in addition to that required of Title VI of the Civil Rights Act of 1964.

GENERAL CIVIL RIGHTS PROVISIONS
Sponsor Lease Agreements and Transfer Agreements

The tenant/concessionaire/lessee agrees to comply with pertinent statutes, Executive Orders and such rules as are promulgated to ensure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance. If the tenant/concessionaire/lessee transfers its obligation to another, the transferee is obligated in the same manner as the tenant/concessionaire/lessor.

This provision obligates the tenant/concessionaire/lessee or for the period during which the property is owned, used or possessed by the tenant/concessionaire/lessee and the airport remains obligated to the Federal Aviation Administration. This provision is in addition to that required by Title VI of the Civil Rights Act of 1964.

TITLE VI CLAUSES FOR
COMPLIANCE WITH NONDISCRIMINATION REQUIREMENTS

During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "Contractor") agrees as follows:

1. **Compliance with Regulations:** The Contractor (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Acts and Authorities,

as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Non-discrimination:** The Contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of Subcontractors, including procurements of materials and leases of equipment. The Contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential Subcontractor or supplier will be notified by the Contractor of the Contractor's obligations under this contract and the Nondiscrimination Acts And Authorities on the grounds of race, color, or national origin.

4. **Information and Reports:** The Contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Sponsor or the Federal Aviation Administration to be pertinent to ascertain compliance with such Nondiscrimination Acts And Authorities and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish the information, the Contractor will so certify to the Sponsor or the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of a Contractor's noncompliance with the Non-discrimination provisions of this contract, the Sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:

   a. Withholding payments to the Contractor under the contract until the Contractor complies; and/or

   b. Cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions:** The Contractor will include the provisions of Paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The Contractor will take action with respect to any subcontract or procurement as the Sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the Contractor becomes involved in, or is threatened

with litigation by a Subcontractor, or supplier because of such direction, the Contractor may request the Sponsor to enter into any litigation to protect the interests of the Sponsor. In addition, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

TITLE VI LIST OF PERTINENT NONDISCRIMINATION ACTS AND AUTHORITIES

During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "Contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq*., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination In Federally-Assisted Programs of The Department of Transportation—Effectuation of Title VI of The Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq*.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq*.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and Contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or

environmental effects on minority and low-income populations;

- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

(Reference: 49 USC § 47123; FAA Order 1400.11)

FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)

All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part time workers.

The Contractor has full responsibility to monitor compliance to the referenced statute or regulation. The Contractor must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division.

(Reference: 29 U.S.C. § 201, et seq.)

OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. Contractor must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The Contractor retains full responsibility to monitor its compliance and their Subcontractor's compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (20 CFR Part 1910). Contractor must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

(Reference: 20 CFR part 1910)

ACCESS TO RECORDS AND REPORTS

The Contractor must maintain an acceptable cost accounting system. The Contractor agrees to provide the Sponsor, the Federal Aviation Administration, and the Comptroller General of the United States or any of their duly authorized representatives, access to any books, documents, papers, and records of the Contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts and transcriptions. The Contractor agrees to maintain all books, records and reports required under this contract for a period of not less than three years after final payment is made and all pending matters are closed.

(Reference: 2 CFR § 200.333, 2 CFR § 200.336, FAA Order 5100.38)

BUY AMERICAN PREFERENCE

The Contractor agrees to comply with 49 USC § 50101, which provides that Federal funds may not be obligated unless all steel and manufactured goods used in AIP funded projects are produced in the United States, unless the FAA has issued a waiver for the product; the product is listed as an Excepted Article, Material Or Supply in Federal Acquisition Regulation subpart 25.108; or is included in the FAA Nationwide Buy American Waivers Issued list.

A bidder or offeror must complete and submit the Buy America certification included herein with their bid or offer. The Owner will reject as nonresponsive any bid or offer that does not include a completed Certificate of Buy American Compliance.

(Reference: 49 USC § 50101)

SOLICITATIONS THAT INCLUDE A PROJECT GOAL RACE/GENDER NEUTRAL LANGUAGE

The requirements of 49 CFR part 26 apply to this contract. It is the policy of the *owner, Georgetown County* to practice nondiscrimination based on race, color, sex or national origin in the award or performance of this contract. The Owner encourages participation by all firms qualifying under this solicitation regardless of business size or Ownership.

DISADVANTAGED BUSINESS ENTERPRISES

Contract Assurance (§ 26.13) - The Contractor or Subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of Department of Transportation-assisted contracts. Failure by the Contractor 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 Owner deems appropriate, which may include, but is not limited to:

1) Withholding monthly progress payments;
2) Assessing sanctions;
3) Liquidated damages; and/or
4) Disqualifying the Contractor from future bidding as non-responsible.

Prompt Payment (§26.29) - The Prime Contractor agrees to pay each Subcontractor under this prime contract for satisfactory performance of its contract no later than 30 days from the receipt of each payment the prime Contractor receives from Georgetown County. The prime Contractor agrees further to return retainage payments to each Subcontractor within thirty (30) days after the Subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the Georgetown County This clause applies to both DBE and non-DBE Subcontractors.

(Reference: 49 CFR part 26)

ENERGY CONSERVATION REQUIREMENTS

Contractor and Subcontractor agree to comply with mandatory standards and policies relating to energy efficiency as contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6201 *et seq*).

(Reference: 2 CFR § 200 Appendix II(H))

RIGHTS TO INVENTIONS

Contracts or agreements that include the performance of experimental, developmental, or research work must provide for the rights of the Federal Government and the Owner in any resulting invention as established by 37 CFR part 401, Rights to Inventions Made by Non-profit Organizations and Small Business Firms under Government Grants, Contracts, and Cooperative Agreements. This contract incorporates by reference the patent and inventions rights as specified within in the 37 CFR §401.14. Contractor must include this requirement in all sub-tier contracts involving experimental, developmental or research work.

(Reference: 2 CFR § 200 Appendix II(F); 37 CFR § 401)

VETERAN'S PREFERENCE

In the employment of labor (excluding executive, administrative, and supervisory positions), the Contractor and all sub-tier Contractors must give preference to covered veterans as defined within Title 49 United States Code Section 47112. Covered veterans include Vietnam-era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns (as defined by 15 U.S.C. 632) owned and controlled by disabled veterans. This preference only applies when there are covered veterans readily available and qualified to perform the work to which the employment relates.

(Reference: 49 USC § 47112(c))

COPELAND "ANTI-KICKBACK" ACT

Contractor must comply with the requirements of the Copeland "Anti-Kickback" Act (18 U.S.C. 874 and 40 U.S.C. 3145), as supplemented by Department of Labor regulation 29 CFR part 3. Contractor and Subcontractors are prohibited from inducing, by any means, any person employed on the project to give up any part of the compensation to which the employee is entitled. The Contractor and each Subcontractor must submit to the Owner, a weekly statement on the wages paid to each employee performing on covered work during the prior week. Owner must report any violations of the Act to the Federal Aviation Administration.

(Reference: 2 CFR § 200 Appendix II(D), 29 CFR parts 3 & 5)

DAVIS-BACON REQUIREMENTS

1. Minimum Wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalent thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly

period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5. 5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under (1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its Subcontractors at the site of the work in a prominent and accessible place where it can easily be seen by the workers.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii) (B) or (C) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding.

The Federal Aviation Administration or the Sponsor shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any Subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of work, all or part of the wages required by the contract, the Federal Aviation Administration may, after written notice to the Contractor, Sponsor, applicant, or Owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and Basic Records.

(i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably

anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual costs incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit the payrolls to the applicant, Sponsor, or Owner, as the case may be, for transmission to the Federal Aviation Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (*e.g.* , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at *http://www.dol.gov/esa/whd/forms/wh347instr.htm* or its successor site. The Prime Contractor is responsible for the submission of copies of payrolls by all Subcontractors. Contractors and Subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit them to the applicant, Sponsor, or Owner, as the case may be, for transmission to the Federal Aviation Administration, the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime Contractor to require a Subcontractor to provide addresses and social security numbers to the prime Contractor for its own records, without weekly submission to the Sponsoring government agency (or the applicant, Sponsor, or Owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or Subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR § 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR § 5.5 (a)(3)(i) and that such information is correct and complete;

(2) That each laborer and mechanic (including each helper, apprentice and trainee) employed on the contract during the payroll period has been paid the full weekly wages

earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the Contractor or Subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The Contractor or Subcontractor shall make the records required under paragraph (3)(i) of this section available for inspection, copying or transcription by authorized representatives of the Sponsor, the Federal Aviation Administration or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or Subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the Contractor, Sponsor, applicant or Owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. <u>Apprentices and Trainees.</u>

(i) <u>Apprentices.</u> Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor

is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or Subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate that is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal Employment Opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act Requirements.

The Contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

6. Subcontracts.

The Contractor or Subcontractor shall insert in any subcontracts the clauses contained in 29 CFR Part 5.5(a)(1) through (10) and such other clauses as the Federal Aviation Administration may by appropriate instructions require, and also a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any Subcontractor or lower tier Subcontractor with all the contract clauses in 29 CFR Part 5.5.

7. Contract Termination: Debarment.

A breach of the contract clauses in paragraph 1 through 10 of this section may be grounds for termination of the contract, and for debarment as a Contractor and a Subcontractor as provided in 29 CFR 5.12.

8. Compliance With Davis-Bacon and Related Act Requirements.

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes Concerning Labor Standards.

Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6 and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its Subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of Eligibility.

(i) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(Reference: 2 CFR § 200 Appendix II(D); 29 CFR Part 5)

General Decision Number**: SC180047 01/05/2018** SC47
Superseded General Decision Number: SC20170047
State: South Carolina
Construction Type: Highway

Counties: Allendale, Bamberg, Barnwell, Beaufort, Colleton,Georgetown, Hampton, Jasper, Newberry, Orangeburg and Williamsburg Counties in South Carolina.

DOES NOT INCLUDE SAVANNAH RIVER SITE IN ALLENDALE AND BARNWELL COUNTIES HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction;bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction;and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually.Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/05/2018

SUSC2011-038 09/15/2011

	Rates	Fringes
CARPENTER (Form Work Only)	$ 14.47	
CEMENT MASON/CONCRETE FINISHER	$ 14.11	
IRONWORKER, REINFORCING	$ 15.64	
LABORER		
Asphalt, Includes Asphalt Distributor, Raker, Shoverler, and Spreader	$ 10.96	
Colleton	$ 10.16	
Common or General		
Beaufort	$ 10.15	
Colleton	$ 10.16	
Georgetown, Hampton, Jasper	$ 10.07	
Newberry, Allendale, Bamberg, Barnwell	$ 11.82	
Orangeburg	$ 12.63	
Williamsburg	$ 10.01	
Luteman	$ 11.71	
Pipelayer	$ 13.87	
Traffic Control-Cone Setter		
Allendale, Bamber, Barnwell, Newberry, Orangeburg	$ 12.98	
Beaufort, Colleton, Georgetown, Hampton, Jasper, Williamsburg.	$ 12.84	
Traffic Control-Flagger	$ 11.68	

POWER EQUIPMENT OPERATOR:
Backhoe/Excavator/Trackhoe
Allendale, Bamberg, Barnwell, Newberry, Orangeburg..... $ 17.56
Beaufort..... $ 15.20
Colleton..... $ 17.78
Georgetown, Hampton, Jasper, Williamsburg..... $ 17.23
Bulldozer..... $ 20.12
Crane..... $ 16.62
Grader/Blade..... $ 16.62
Loader (Front End)..... $ 15.51
Mechanic..... $ 18.22
Milling Machine..... $ 18.83
Paver
Allendale, Bamberg, Barnwell, Newberry, Orangeburg,
Williamsburg..... $ 15.01
Beaufort..... $ 14.96
Colleton, Georgetown, Hampton, Jasper..... $ 13.67
Roller..... $ 12.76
Screed..... $ 13.01
Tractor..... $ 13.26
TRUCK DRIVER
Dump Truck..... $ 12.00
Lowboy Truck..... $ 14.43
Single Axle, Includes Pilot Car..... $ 12.04
Tractor Haul Truck..... $ 16.25

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year.

Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts. Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate). Union Rate Identifiers A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014. Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier. Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- an existing published wage determination
- a survey underlying a wage determination
- a Wage and Hour Division letter setting forth a position on a wage determination matter
- a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the age and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

TEXTING WHEN DRIVING

In accordance with Executive Order 13513, " Federal Leadership on Reducing Text Messaging While Driving" (10/1/2009) and DOT Order 3902.10 “Text Messaging While Driving” (12/30/2009), the FAA encourages recipients of Federal grant funds to adopt and enforce safety policies that decrease crashes by distracted drivers, including policies to ban text messaging while driving when performing work related to a grant or sub-grant.

In support of this initiative, the Owner encourages the Contractor to promote policies and initiatives for its employees and other work personnel that decrease crashes by distracted drivers, including policies that ban text messaging while driving motor vehicles while performing work activities associated with the project. The Contractor must include the substance of this clause in all sub-tier contracts exceeding $3,500 and involve driving a motor vehicle in performance of work activities associated with the project.

(Reference: Executive Order 13513, DOT Order 3902.10)

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION to ENSURE EQUAL EMPLOYMENT OPPORTUNITY

1. The Offeror's or Bidder’s attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

   Timetables

Goals for minority participation for each trade: **33.0%**

Goals for female participation in each trade: 6.9%

These goals are applicable to all of the Contractor's construction work (whether or not it is Federal or federally-assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs (OFCCP) within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the Subcontractor; employer identification number of the Subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this notice and in the contract resulting from this solicitation, the "covered area" is ***Georgetown, Georgetown County, South Carolina***

(<u>Reference</u>: 41 CFR part 60-4, Executive Order 11246)

EQUAL OPPORTUNITY CLAUSE

(EEO Contract Clause)

During the performance of this contract, the Contractor agrees as follows:

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during

employment without regard to their race, color, religion, sex, sexual orientation, gender identify or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

(3) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each Subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance*: Provided, however*, That in the event a Contractor becomes involved in, or is threatened with, litigation with a Subcontractor or vendor as a result of such direction by the administering agency the Contractor may request the United States to enter into

such litigation to protect the interests of the United States.

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS
(EEO Specification)

1. As used in these specifications:

   b. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

   c. "Director" means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;

   d. "Employer identification number" means the Federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;

   e. "Minority" includes:

      (1) Black (all) persons having origins in any of the Black African racial groups not of Hispanic origin);

      (2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race);

      (3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

      (4) American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors shall be able to demonstrate

their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction Contractors performing construction work in a geographical area where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the Contractor has a collective bargaining agreement to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246 or the regulations promulgated pursuant thereto.

6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees shall be employed by the Contractor during the training period and the Contractor shall have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees shall be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:

   a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all

foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or female sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with onsite supervisory personnel such as superintendents, general foremen, etc., prior to the initiation of construction work

at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students; and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel, for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction Contractors and suppliers, including circulation of solicitations to minority and female Contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisor's adherence to and

performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations (7a through 7p). The efforts of a Contractor association, joint Contractor union, Contractor community, or other similar groups of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through 7p of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, if the particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally,) the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized.

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these

specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records shall at least include for each employee, the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, Contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

(Reference: 2 CFR 200, Appendix II(C); 41 CFR § 60-1.4; 41 CFR § 60-4.3; Executive Order 11246)

PROCUREMENT OF RECOVERED MATERIALS

Contractor and Subcontractor agree to comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, and the regulatory provisions of 40 CFR Part 247. In the performance of this contract and to the extent practicable, the Contractor and Subcontractors are to use of products containing the highest percentage of recovered materials for items designated by the Environmental Protection Agency (EPA) under 40 CFR Part 247 whenever:

a) The contract requires procurement of $10,000 or more of a designated item during the fiscal year; or,
b) The Contractor has procured $10,000 or more of a designated item using Federal funding during the previous fiscal year.

The list of EPA-designated items is available at www.epa.gov/epawaste/conserve/tools/cpg/products/.

Section 6002(c) establishes exceptions to the preference for recovery of EPA-designated products if the Contractor can demonstrate the item is:

a) Not reasonably available within a timeframe providing for compliance with the contract performance schedule;
b) Fails to meet reasonable contract performance requirements; or
c) Is only available at an unreasonable price.

(Reference: 2 CFR § 200.322; 40 CFR part 247)

TERMINATION FOR CONVENIENCE
(Construction & Equipment Contracts)

The Owner may terminate this contract in whole or in part at any time by providing written notice to the Contractor. Such action may be without cause and without prejudice to any other right or remedy of Owner. Upon receipt of a written notice of termination, except as explicitly directed by the Owner, the Contractor shall immediately proceed with the following obligations regardless of any delay in determining or adjusting amounts due under this clause:

1. Contractor must immediately discontinue work as specified in the written notice.
2. Terminate all subcontracts to the extent they relate to the work terminated under the notice.
3. Discontinue orders for materials and services except as directed by the written notice.
4. Deliver to the Owner all fabricated and partially fabricated parts, completed and partially completed work, supplies, equipment and materials acquired prior to termination of the work and as directed in the written notice.
5. Complete performance of the work not terminated by the notice.
6. Take action as directed by the Owner to protect and preserve property and work related to this contract that Owner will take possession.

Owner agrees to pay Contractor for:

a) completed and acceptable work executed in accordance with the contract documents prior to the effective date of termination;
b) documented expenses sustained prior to the effective date of termination in performing work and furnishing labor, materials, or equipment as required by the contract documents in connection with uncompleted work;
c) reasonable and substantiated claims, costs and damages incurred in settlement of terminated contracts with Subcontractors and Suppliers; and
d) reasonable and substantiated expenses to the Contractor directly attributable to Owner's termination action

Owner will not pay Contractor for loss of anticipated profits or revenue or other economic loss arising out of or resulting from the Owner's termination action.

The rights and remedies this clause provides are in addition to any other rights and

remedies provided by law or under this contract.

TERMINATION FOR DEFAULT
(Construction)

Section 80-09 of FAA Advisory Circular 150/5370-10 establishes conditions, rights and remedies associated with Owner termination of this contract due default of the Contractor.

TERMINATION FOR DEFAULT
(Equipment)

The Owner may, by written notice of default to the Contractor, terminate all or part of this Contract if the Contractor:

1. Fails to commence the Work under the Contract within the time specified in the Notice- to-Proceed;
2. Fails to make adequate progress as to endanger performance of this Contract in accordance with its terms;
3. Fails to make delivery of the equipment within the time specified in the Contract, including any Owner approved extensions;
4. Fails to comply with material provisions of the Contract;
5. Submits certifications made under the Contract and as part of their proposal that include false or fraudulent statements;
6. Becomes insolvent or declares bankruptcy;

If one or more of the stated events occur, the Owner will give notice in writing to the Contractor and Surety of its intent to terminate the contract for cause. At the Owner's discretion, the notice may allow the Contractor and Surety an opportunity to cure the breach or default.

If within ten (10) days of the receipt of notice, the Contractor or Surety fails to remedy the breach or default to the satisfaction of the Owner, the Owner has authority to acquire equipment by other procurement action. The Contractor will be liable to the Owner for any excess costs the Owner incurs for acquiring such similar equipment.

Payment for completed equipment delivered to and accepted by the Owner shall be at the Contract price. The Owner may withhold from amounts otherwise due the Contractor for such completed equipment, such sum as the Owner determines to be necessary to protect the Owner against loss because of Contractor default.

Owner will not terminate the Contractor's right to proceed with the Work under this clause if the delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such acceptable causes include: acts of God, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, and severe weather events that substantially exceed normal conditions for the location.

If, after termination of the Contractor's right to proceed, the Owner determines that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the Owner issued the termination for the convenience the Owner.

The rights and remedies of the Owner in this clause are in addition to any other rights and remedies provided by law or under this contract.

(Reference: 2 CFR § 200 Appendix II(B); FAA Advisory Circular 150/5370-10, Section 80-90)

CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS

1. 1. Overtime Requirements.

No Contractor or Subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic, including watchmen and guards, in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; Liability for Unpaid Wages; Liquidated Damages.

In the event of any violation of the clause set forth in paragraph (1) of this clause, the Contractor and any Subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and Subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this clause, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this clause.

3. Withholding for Unpaid Wages and Liquidated Damages.

The Federal Aviation Administration (FAA) or the Owner shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or Subcontractor under any such contract or any other Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor, such sums as may be determined to be necessary to satisfy any liabilities of

such Contractor or Subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 2 of this clause.

4. Subcontractors.

The Contractor or Subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) and also a clause requiring the Subcontractor to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any Subcontractor or lower tier Subcontractor with the clauses set forth in paragraphs (1) through (4) of this clause.

(Reference: 2 CFR § 200 Appendix II (E))

BREACH OF CONTRACT TERMS

Any violation or breach of terms of this contract on the part of the Contractor or its Subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this agreement.

Owner will provide Contractor written notice that describes the nature of the breach and corrective actions the Contractor must undertake in order to avoid termination of the contract. Owner reserves the right to withhold payments to Contractor until such time the Contractor corrects the breach or the Owner elects to terminate the contract. The Owner's notice will identify a specific date by which the Contractor must correct the breach. Owner may proceed with termination of the contract if the Contractor fails to correct the breach by deadline indicated in the Owner's notice.

The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder are in addition to, and not a limitation of, any duties, obligations, rights and remedies otherwise imposed or available by law.

(Reference: 2 CFR § 200 Appendix II(A))

CLEAN AIR AND WATER POLLUTION CONTROL

Contractor agrees to comply with all applicable standards, orders, and regulations issued pursuant to the Clean Air Act (42 U.S.C. § 740-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. § 1251-1387). The Contractor agrees to report any violation to the Owner immediately upon discovery. The Owner assumes responsibility for notifying the Environmental Protection Agency (EPA) and the Federal Aviation Administration.

Contractor must include this requirement in all subcontracts that exceeds $150,000.

(Reference: 2 CFR § 200, Appendix II(G))

CERTIFICATION OF OFFERER/BIDDER REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS

The applicant must complete the following two certification statements. The applicant must indicate its current status as it relates to tax delinquency and felony conviction by inserting a checkmark (✓) in the space following the applicable response. The applicant agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification in all lower tier subcontracts.

Certifications

1) The applicant represents that it is ( ) is not ( ) a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.
2) The applicant represents that it is ( ) is not ( ) is not a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

(Reference: Sections 415 and 416 of Title IV, Division L of the Consolidated Appropriations Act, 2014 (Pub. L. 113-76), and similar provisions in subsequent appropriations acts.

DOT Order 4200.6 - Requirements for Procurement and Non-Procurement Regarding Tax Delinquency and Felony Convictions)

APPENDIX ‘D’
CONTRACT AND BONDS

STATE OF SOUTH CAROLINA)

CONSTRUCTION

)

GEORGETOWN COUNTY) CONTRACT

THIS CONTRACT made and entered into this_____ day of _____ 2018, by and between Georgetown County, hereinafter referred to as the "Owner", a body politic and corporate and political subdivision of the State of South Carolina, whose administrative address is: 129 Screven Street, Georgetown, South Carolina 29440; and _____ hereinafter referred to as the "Contractor", a limited liability corporation formed and existing under the laws of the State of ____ _____ and authorized to do business within the State of South Carolina whose administrative address is: _____.

IN WITNESS WHEREOF:

WHEREAS the Owner has a project entitled "_____" hereinafter referred to as the "Project", and;

WHEREAS, the Contractor has submitted a proposal for the Project at **$** _____ which is the Lump Sum Base Bid and the Owner has awarded the Project to the Contractor; and

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, as well as other good and valuable consideration not specifically mentioned, the parties agree as follows:

1. The Contractor, for and in consideration of the payments hereinafter specified and agreed to be made by the Owner, hereby covenants and agrees to furnish and deliver all materials required, to do and perform all the work and labor, in a satisfactory and workmanlike manner, required to complete the Project within the time specified, in strict and entire conformity with the Plans, Technical Specifications and other Contract documents, on file at Georgetown County, which are duly approved by the Owner and which said Plans, Specifications and other Contract documents are hereby made part of this Contract as fully and with the same effects as if the same had been set forth at length in the body of this Contract.

2. The Contractor hereby agrees to indemnify, defend and hold the Owner and, the Engineer, and each of their agents, representatives, directors, officers, and employees harmless from any and all liabilities, losses, damages, penalties, judgments, awards, claims, demands, costs, expenses, (including reasonable attorney's fees and court costs), actions, lawsuits or other proceedings arising directly or indirectly, in whole or in part, out of the negligence or willful acts or omissions of the Contractor, Trade Subcontractors, or their respective agents, directors, officers or employees in connection with this Agreement or in any way with the services or Work described herein, any occurrence at the Project site, or any occurrence arising in connection with or at the Project site or in connection with the Work, whether within or beyond the scope of its duties hereunder.

3. The Project has been designed by Talbert and Bright, Inc. whose office is located at 4810 Shelley Drive, Wilmington, NC 28405 and who will act as the ENGINEER in connection with completion of the Work in accordance with the Contract Documents.

4. The project will be considered substantially complete upon completion of all items listed in the Bid Form and appurtenances in accordance with the Contract Documents, including successful performance of all testing requirements.

5. The Contractor's indemnity and defense obligations under this Contract shall be absolute notwithstanding any provision contained herein or elsewhere to the contrary, and shall survive Final Completion and Final Payment for a period equal to the statute of limitations for any action which could be brought against the Owner or its agents, officers, directors and employees and shall continue through the duration of any action brought during the applicable time periods.

6. The Contractor agrees to indemnify, defend and hold the Owner, and the Engineer, and each of their agents, representatives, officers, directors and employees, harmless from all costs, damages and expenses, including reasonable attorneys fees, incurred by the Owner and its consultants by virtue of any claim or claims filed by any Trade Subcontractor, mechanic, laborer, or materialman making claims arising from the performance of the Work by, through, or under the Contractor, provided the Contractor has received from the Owner all amounts properly due under this Contract concerning the claim. The Contractor shall execute and deliver to the Owner's title insurer similar indemnifications or such other document as such title insurer shall reasonably request in order to protect it against lien claims from Trade Subcontractors. The Contractor also hereby agrees to indemnify and hold harmless, protect and defend the Owner and its consultants from and against any liability, claim, judgment, loss or damage, including, but not limited, to direct damages, attorney's fees, court costs and expenses of collection, occasioned in whole or in part by the sole failure of the Contractor, and its Trade Subcontractors to comply with any of the terms or provisions of this Contract.

7. In any and all claims against the Owner, by any employee of the Contractor or Trade Subcontractor, anyone directly or indirectly employed by any of them, their agent or anyone for whose acts any of the Contractor of Trade Subcontractors may be liable, the indemnification obligation under this Paragraph 2 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Trade Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

8. The Owner hereby agrees to pay to the Contractor for the said work, when fully completed, the total sum of **$**_____ (the said sum being the total of the Contractor's bid, a copy of which is attached hereto and, pro tanto, made a part hereof for all purposes), subject to such additions and deductions as may be provided for in the Contract Documents. In the event the bid contains multiple pay items, it is understood that the amount to be paid shall be the total based on the unit prices, together with lump sum prices, contained in said bid, for the work actually completed. Payments on accounts will be made as customarily provided by the County and consistent with applicable County procedures. The Contractor shall submit bills for fees or other compensation for services or expenses in detail sufficient for a proper pre-audit and post audit thereof. Any unit of provision of goods and services must be approved in writing by the Owner prior to payment.

9. The Owner may unilaterally cancel this Contract and the goods and services there under in the event that the Contractor fails and refuses to allow public access to all documents, papers, letters, or other material subject to the provisions of the applicable South Carolina Code of Laws, made or received by the Contractor in conjunction with this Contract.

10. This Contract has been executed by the parties prior to the rendering of any goods or services by the Contractor.

11. The Contractor shall provide a payment and performance bond (the "Bond") to the Owner meeting the requirements of applicable South Carolina Code of Laws, The Georgetown County Procurement Ordinance, as amended, and associated bid documents referenced herein, which by virtue of executing this contract the Contractor has accepted in the sum of $_____ and shall cause the

Bond to be recorded with the Notice of Commencement in the Public Records of Georgetown County, South Carolina.

12. This Contract shall be subordinate to any rule, regulation, order or law of the United States of America, or the State of South Carolina, respectively.

13. Contractor and its employees shall promptly observe and comply with all applicable provisions of any Federal, State and local laws, ordinances, rules or regulations which govern or apply to the goods or services rendered by Contractor hereunder including the wages paid by Contractor to its employees. Contractors shall require all of its Subcontractors to comply with the provisions of this paragraph.

14. Contractor shall procure and keep in force during the term of this contract all necessary insurance (including but not limited to general liability, casualty, workers compensation, and automobile), licenses, registrations, certificates, permits and other authorizations as are required by law in order for Contractor to render its services hereunder. Contractor shall require all of its Subcontractors to comply with the provisions of this paragraph.

15. All remedies provided in this Contract shall be deemed cumulative and additional and not in lieu of or exclusive of each other or of any other remedy available to any party at law or in equity. In the event one party shall prevail in any action (including appellate proceedings), at law or in equity arising hereunder, the losing party will pay all costs, expense, reasonable attorneys' fees and all other actual and reasonable expenses incurred in the defense and/or prosecution of any legal or arbitration proceedings, including, but not limited to, those for paralegal, investigative, legal support services and actual fees charged by expert witnesses for testimony and analysis, incurred by the prevailing party referable thereto.

16. Contractor represents and warrants unto Owner that no officer, employee or agent of Owner has any interest, either directly or indirectly, in the business or property for/on which the Contractor to conduct activities hereunder. Contractor further represents and warrants to Owner that it has not employed or retained any third party person, other than a bona fide employee working solely for Contractor, to bid, solicit or secure this Contract, that it has not paid or agreed to any person, company, corporation, individual or firm, other than a bona fide employee working solely for Contractor, any fee, commission, percentage, gift, or any other consideration contingent upon or resulting from the award or making of this Contract, and that it has not agreed, as an express or implied condition for obtaining this Contract, to employ or retain the services of any firm or person in connection with carrying out this Contract. Contractor assures that it will insert the above provision in each of its Subcontractor agreements relating to the services to be performed hereunder.

17. The headings of the sections of this Contract are for the purpose of convenience only and shall not be deemed to expand or limit the provisions contained in such sections.

18. This Contract, including all Contract documents such as, but not limited to, bid documents and procurement packages, constitutes the entire agreement between the parties and shall supersede and replace all prior agreements or understandings, written or oral, relating to the matters set forth herein.

19. This Contract shall not be amended or modified other than in writing signed by the parties hereto. Notwithstanding the foregoing, any Amendments that are not being paid for, in whole or in part, with funds granted by the United States or State of South Carolina need not be approved by them.

20. The validity, interpretation, construction and effect of this Contract shall be in accordance with and be governed by the laws of the State of South Carolina. In the event any provision hereof shall be finally

determined to be unenforceable, or invalid, such unenforceability or invalidity shall not affect the remaining provisions of this Contract which shall remain in full force and effect.

21. Termination of Contract

a) The Owner may, by written notice, terminate this Contract in whole or in part at any time, either for the Owner's convenience or because of failure to fulfill the Contract obligations. Upon receipt of such notice, services shall be immediately discontinued (unless the notice directs otherwise) and all materials as may have been accumulated in performed this Contract, whether completed or in process, delivered to the Owner.

b) If the termination is due to failure to fulfill the Contractor's obligations, the Owner may take over the work and prosecute the same to completion by contract or otherwise. In such case, the Contractor shall be liable to the Owner for any additional cost occasioned to the Owner thereby.

c) If, after notice of termination for failure to fulfill its Contract obligations, it is determined that the Contractor had not failed, the termination shall be deemed to have been effected for the convenience of the Owner. In such event, adjustment in the Contract price shall be made as provided in paragraph 21.a of this clause.

d) The rights and remedies of the Owner provided in this clause are in addition to any other rights and remedies provided by law or under this Contract.

e) **Non-Appropriation:**
It is understood and agreed by the parties that in the event funds are not appropriated in the current fiscal year or any subsequent fiscal years, this contract will become null and void and the County will only be required to pay for services completed to the satisfaction of the County.

22. Waiver or Forbearance
Any delay or failure of County to insist upon strict performance of any obligation under this Agreement or to exercise any right or remedy provided under this Agreement shall not be a waiver of County's right to demand strict compliance, irrespective of the number or duration of any delay(s) or failure(s). No term or condition imposed on Contractor under this Agreement shall be waived and no breach by Contractor shall be excused unless that waiver or excuse of a breach has been put in writing and signed by both parties. No waiver in any instance of any right or remedy shall constitute waiver of any other right or remedy under this Agreement. No consent to or forbearance of any breach or substandard performance of any obligation under this Agreement shall constitute consent to modification or reduction of the other obligations or forbearance of any other breach.

23. Title VI Compliance:
Georgetown County hereby gives public notice that it is the policy of the agency to assure full compliance with Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, Executive Order 12898 on Environmental Justice, and related statutes and regulations in all programs and activities. Title VI requires that no person in the United States of America shall, on the grounds of race, color, or national origin, be excluded from the participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which Georgetown County receives federal financial assistance. Any person who believes they have been aggrieved by an unlawful discriminatory practice under Title VI has a right to file a formal complaint with Georgetown County. Any such complaint must be in writing and filed with Georgetown County's

Title VI Coordinator within one hundred and eighty (180) days following the date of the alleged discriminatory occurrence. For more information, or to obtain a Title VI Discriminatory Complaint Form, please see our website at http://www.gtcounty.org.

IN WITNESS WHEREOF, the Owner and Contractor hereto have signed and sealed this Contract on the day and date first above written in two counterparts, each deemed an original contract.

Georgetown County, South Carolina

_____
Attest:

By: _____

Johnny Morant
Georgetown County Council Chair

Sample Vendor

By: _____

Its: _____
Principal

_____
Witness:

PERFORMANCE BOND
100% of the Contract Amount

KNOW ALL MEN BY THESE PRESENT: that

CONTRACTOR NAME
CONTRACTOR ADDRESS

as Principal, hereinafter called Contractor and _____, a corporation duly organized in the State of _____and licensed under laws of and authorized to do business in the State of South Carolina as Surety, hereinafter called Surety, are held firmly bound unto

GEORGETOWN COUNTY
129 SCREVEN STREET, SUITE 239
GEORGETOWN, SOUTH CAROLINA 29440

hereinafter called OWNER, in the amount of **write in words** ($ **amount**) for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firm by these present.

WHEREAS, Contractor has by written agreement dated _____ 2016, entered into a Contract with OWNER for **Apron Expansion (Phase IV)** in accordance with drawings and specifications prepared by:

TALBERT & BRIGHT, INC.
4810 SHELLEY DRIVE
WILMINGTON, NORTH CAROLINA 28405

which contract is by reference made a part hereof, and is hereinafter referred to as the CONTRACT.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION are such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the OWNER and Contractor.

Whenever Contractor shall be, and declared by OWNER to be in default under the Contract, the OWNER having performed OWNER'S obligations thereunder, the Surety may promptly remedy the defaults, or shall promptly:

1. Complete the Contract in accordance with its terms and conditions, or

2. Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or,

if the OWNER elects, upon determination by the OWNER and the Surety jointly of the lowest responsible bidder, arrange for a Contract between such bidder and OWNER, and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts arranged under this paragraph) sufficient funds to pay the cost of completion, less the balance of the contract price, but not exceeding (including other costs and damages for which the Surety may be liable hereunder), the amount set forth in the second paragraph hereof. The term "balance of contract price" as used in paragraph, shall mean the total amount payable by OWNER to Contractor under the Contract and any amendment thereto, less the amount properly paid by OWNER to Contractor. It is the intent for the contract to be completed within the contract time or liquidated damages will be assessed in accordance with the specifications.

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the OWNER named herein or the heirs, executors, administrators or successors of the OWNER.

Signed and sealed this _____ day of _____ 2018.

BY:

_____
Principal

_____
Name (Seal)

_____
Title

WITNESS:

_____

BY:

_____
Surety

_____
Name (Seal)

_____
Title

WITNESS:

_____

BY:

_____
Licensed Resident Agent (Signature)

_____
Licensed Resident Agent (Typed)

_____
Street Address

_____
City, State, Zip

_____
Telephone Number

LABOR AND MATERIAL PAYMENT BOND
100% of the Contract Amount

KNOW ALL MEN BY THESE PRESENT: that

CONTRACTOR NAME
CONTRACTOR ADDRESS

as Principal, hereinafter called Principal, and _____ corporation duly organized in the State of _____and licensed under the laws of and authorized to do business in the State of South Carolina as Surety, hereinafter called Surety, are held firmly bound unto

GEORGETOWN COUNTY
129 SCREVEN STREET, SUITE 239
GEORGETOWN, SOUTH CAROLINA 29440

as Obligee, hereinafter called OWNER, for the use and benefit of claimants as herein below defined, in the amount of **write in words** ($ **amount**) for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firm by these present.

WHEREAS,

Principal has by written agreement dated _____ 2016 entered into a contract with OWNER for **Apron Expansion- Phase IV** in accordance with drawings and specifications prepared by:

TALBERT & BRIGHT, INC.
4810 SHELLEY DRIVE
WILMINGTON, NORTH CAROLINA 28405

which contract is by reference made a part hereof, and is hereinafter referred to as the CONTRACT.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION are such that, if Principal shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for the use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. A claimant is defined as one having a direct contract with the Principal or with a subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contractor.

2. The above named Principal and Surety hereby jointly and severally agree with the OWNER that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgement for such sum or sums as may be justly due claimant, and have execution thereon. The OWNER shall not be liable for the payment of any costs or expenses of any such suit.

3. No suit or action shall be commenced hereunder by any claimant:

a. Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: the Principal, the OWNER, or the Surety above named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to who the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, OWNER, or surety, at any place where an office is regularly maintained for the transaction of business, or served in the state in which the aforesaid project is located, save that such service need not be made by public officer.

b. After the expiration of one (1) year following the date of which Principal ceased work on said Contract, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

c. Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the Project, or any part thereof, is situated or in the United States District Court for the district in which the Project, or any part thereof, is situated, and not elsewhere.

4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

Signed and sealed this _____ day of _____ 2016.

BY:

_____
Principal

_____
Name (Seal)

_____
Title

BY:

_____
Surety

_____
Name (Seal)

_____
Title

WITNESS:

_____

WITNESS:

_____

BY:

_____
Licensed Resident Agent (Signature)

_____
Licensed Resident Agent (Typed)

_____
Street Address

_____
City, State, Zip

_____
Telephone Number

APPENDIX ‘E’
FORMS

ESTIMATE FOR PARTIAL PAYMENT

No. _____

AIP No. _____ TBI No.: 2601-1702

Project Name: Apron Expansion (Phase IV) Airport Name: Georgetown County Airport

Contractor: _____ Contract Date: _____

Contract for: Georgetown County

Application Date: _____ Period Ending: _____

Original Contract Price	_____
Net Change Orders	_____
Current Contract Price	_____
Total Amount Earned (Col. 9)	_____
Retained Percentage (_____%)	_____
Total Earned Less Retained	_____
Total Previously Approved	_____
Amount Due This Estimate	_____
Total Amount Due	_____

CERTIFICATE OF CONTRACTOR

The undersigned certifies to the best of his knowledge and belief that all items, units, quantities and prices for work and material herein are correct; that all work has been performed and materials supplied in accordance with the terms and conditions of the Construction Contract and all authorized changes thereto; that the above is a true and correct statement of the contract up to and including the last day of the period of the estimate; that all previous payments received from the Owner for work performed under the Construction Contract have been applied to discharge all obligations incurred by the undersigned in connection with work covered by prior estimates for partial payment; and that all materials and equipment incorporated in the above project are free and clear of all liens, security interests and encumbrances.

Contractor: _____ Title: _____

By: _____ Date: _____

CERTIFICATE OF OWNER'S ENGINEERS

I certify that I have verified this Estimate for Partial Payment and that to the best of my knowledge and belief it is a true and correct statement of work performed materials supplied under the Contract.

TALBERT & BRIGHT, INC., WILMINGTON, NORTH CAROLINA

Resident Observer **Project Engineer**

Name: _____ Name: _____

Date: _____ Date: _____

OWNER'S RECOMMENDATION FOR PAYMENT

Approved and Payment Recommended _____, OWNER

BY: _____ TITLE: _____ DATE: _____

OWNER:_____ Sheet ____ of ____ Sheets

No. And Description of Unit		Contract			Work Done This Period		Work Completed to Date		
Item # (1)	Detailed Estimate (2)	Quantity (3)	Unit Price (4)	Cost Estimate (5)	No. of Units (6)	Amount Earned (7)	No. of Units (8)	Amount Earned (9)	Percent Complete (10)
Totals									

DME/MBE/WBE VENDOR PAYMENTS

Airport Name: Georgetown County Airport Project Number: 2601-1702

Project Name: Apron Expansion (Phase IV) Pay Request No.:

Payor Name	Payor Report ID	Vendor/Subcontractor Name	Vendor/Subcontractor Report ID	Amount Paid to Vendor/Subcontractor this Invoice	Date Paid to Vendor/Subcontractor this Invoice
			TOTAL		
SUBMITTED BY:		SUB RECIPIENT:	BY:	TITLE:	

CONSENT OF SURETY COMPANY TO FINAL PAYMENT

OWNER ☐
ENGINEER ☐
CONTRACTOR ☐
SURETY ☐
OTHER ☐

PROJECT (Name and Address): Apron Expansion (Phase IV)
Georgetown County Airport
Georgetown, South Carolina

TO (Owner):

Engineer's Project No.: 2601-1702
AIP No.: _____
Contract for: Georgetown County
Contract Date: _____

CONTRACTOR: _____

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the (insert name and address of Surety Company here)

_____
_____
_____ , Surety Company

on bond of (here insert name and address of Contractor)

_____
_____
_____ , Contractor

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety Company of its obligations to (here insert name and address of Owner)

_____
_____
_____ , Owner

as set forth in the said Surety Company's bond.

IN WITNESS WHEREOF,

the Surety Company has hereunto set its hand this _____ day of _____ 20__.

Surety Company
Signature of Authorized Representative

Attest:
(Seal):

_____
Title

CONTRACTOR'S AFFIDAVIT OF RELEASE OF LIENS

OWNER ☐
ENGINEER ☐
CONTRACTOR ☐
SURETY ☐
OTHER ☐

TO (Owner):

Engineer's Project No.: 2601-1702
AIP No.: _____
Contract for: Georgetown County
Contract Date: _____

PROJECT (Name and Address): Apron Expansion (Phase IV)
Georgetown County Airport
Georgetown, South Carolina

State of: _____
County of: _____

The undersigned, pursuant to the General Conditions of the Contract for Construction, hereby certifies that to the best of his knowledge, information and belief, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services, who have or may have liens against any property of the Owner arising in any manner out of the performance of the Contract referenced above.

EXCEPTIONS: (If none, write "None". If required by the Owner, the Contractor shall furnish bond satisfactory to the Owner for each exception.)

CONTRACTOR: _____
Address: _____
_____
_____

BY: _____

Subscribed and sworn to before me this _____ day of _____ 20___.

Notary Public: _____

My Commission Expires: _____

(Seal)

AFFIDAVIT OF PAYMENTS OF DEBTS AND CLAIMS

OWNER ☐
ENGINEER ☐
CONTRACTOR ☐
SURETY ☐
OTHER ☐

TO (Owner):

Engineer's Project No.: 2601-1702
AIP No.: _____
Contract for: Georgetown County
Contract Date: _____

PROJECT (Name and Address): Apron Expansion (Phase IV)
Georgetown County Airport
Georgetown, South Carolina

State of: _____
County of: _____

The undersigned, pursuant to the General Conditions of the Contract for Construction, hereby certifies that, except as listed below, he has paid in full or has otherwise satisfied all obligations for all materials and equipment furnished, for all work, labor, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or his property might in any way be held responsible.

EXCEPTIONS: (If none, write "None". If required by the Owner, the Contractor shall furnish bond satisfactory to the Owner for each exception.)

CONTRACTOR: _____
Address: _____
_____
_____

BY: _____

Subscribed and sworn to before me this _____ day of _____ 20___.

Notary Public: _____

My Commission Expires: _____

(Seal)

TALBERT & BRIGHT, INC.
PROJECT DIARY

Project: Apron Expansion (Phase IV) **TBI No.:** 2601-1702 **Week Ending:** _____
Georgetown County Airport

Equipment Working: _____

Approximate No. of Employees: _____

SATURDAY **Date:** _____ **Weather:** _____ **a.m.** _____ **p.m.** **Temperature:** _____ **a.m.** _____ **p.m.**

Work in Progress: _____

Hours Worked: **Contractor:** _____ **RPR:** _____ **Lab:** _____ **Contract Days To Date:** _____

SUNDAY **Date:** _____ **Weather:** _____ **a.m.** _____ **p.m.** **Temperature:** _____ **a.m.** _____ **p.m.**

Work in Progress: _____

Hours Worked: **Contractor:** _____ **RPR:** _____ **Lab:** _____ **Contract Days To Date:** _____

MONDAY **Date:** _____ **Weather:** _____ **a.m.** _____ **p.m.** **Temperature:** _____ **a.m.** _____ **p.m.**

Work in Progress: _____

Hours Worked: **Contractor:** _____ **RPR:** _____ **Lab:** _____ **Contract Days To Date:** _____

TUESDAY **Date:** _____ **Weather:** _____ **a.m.** _____ **p.m.** **Temperature:** _____ **a.m.** _____ **p.m.**

Work in Progress: _____

Hours Worked: **Contractor:** _____ **RPR:** _____ **Lab:** _____ **Contract Days To Date:** _____

WEDNESDAY **Date:** _____ **Weather:** _____ **a.m.** _____ **p.m.** **Temperature:** _____ **a.m.** _____ **p.m.**

Work in Progress: _____

_____

_____

_____

_____

_____

Hours Worked: **Contractor:**_____ **RPR:**_____ **Lab:**_____ **Contract Days To Date:**_____

THURSDAY **Date:** _____ **Weather:** _____ **a.m.** _____ **p.m.** **Temperature:** _____ **a.m.** _____ **p.m.**

Work in Progress: _____

_____

_____

_____

_____

_____

Hours Worked: **Contractor:**_____ **RPR:**_____ **Lab:**_____ **Contract Days To Date:**_____

FRIDAY **Date:** _____ **Weather:** _____ **a.m.** _____ **p.m.** **Temperature:** _____ **a.m.** _____ **p.m.**

Work in Progress: _____

_____

_____

_____

_____

_____

Hours Worked: **Contractor:**_____ **RPR:**_____ **Lab:**_____ **Contract Days To Date:**_____

I certify that I have performed the field work and administrative duties for this project, and that through my presence and personal observation of the work and through standard testing methods, the Contractor is accomplishing the contract work in accordance with the requirements of the plans and specifications. (Certification by RPR and Contractor.)

_____ _____

Contractor's Authorized Representative Date

_____ _____

Resident Project Representative Date

APPENDIX ‘F’
SUBSURFACE DATA

GeoTechnologies, Inc.
Geotechnical and Construction Materials Testing Services

November 27, 2017

Mr. Al Smith, P.E.
Talbert & Bright, Inc.
4810 Shelley Drive
Wilmington, North Carolina 28405

Reference: Pavement & Subsurface Evaluation
Apron Expansion
Georgetown County Airport
Georgetown, South Carolina
GeoTechnologies Project No. 1-17-0903-EA

Dear Sir:

GeoTechnologies has completed the authorized evaluation of pavement and subsurface conditions for expansion of the apron at Georgetown County Airport in Georgetown, South Carolina. The purpose of this report is to discuss observations made during our site visits, to present results of tests performed in the field and in our laboratory, and to make recommendations which may be used for design of new pavements for the apron.

PROJECT INFORMATION & EXISTING CONDITIONS

We understand the apron will be expanded to fill out the grassed area in the southwest corner of the existing apron. A total of six (6) borings were performed in the grassed area to evaluate conditions for the expansion, and two (2) borings were performed in the adjacent pavements to evaluate the pavement section. Boring depths for the expansion were performed with hand augers and extended to 5 feet below existing grade. A dynamic cone penetrometer (DCP – Sowers) was used to evaluate soil stiffness and consistency with depth. Samples were collected from the borings for laboratory testing. The pavements were cored with a truck-mounted coring rig turning a diamond-impregnated bit. The pavement borings were then extended using hand augers. Thickness of the asphalt and base course stone were measured. Another DCP (COE – Kessler), was used to evaluate soil CBR values with depth. Upon completion, all boreholes were backfilled, packed, and pavement bore holes patched. Approximate locations of the borings are shown on the attached aerial site plan, Figure 1.

Topsoil and roots were encountered in most borings, extending to 4 to 8 inches below existing grade. Some organically stained sands are present below the topsoil. Soils encountered consisted primarily of loose to medium dense slightly silty medium to fine sands with some clean sands and silty sands. Unified Soil Classifications of the soils encountered included SP, SM, and SP-SM. Some very loose sands were encountered at 5 feet below existing grade. Groundwater was encountered at depths ranging from 50 to 58 inches below grade. Moisture contents appeared to increase with depth.

The existing asphalt pavements adjacent to the proposed expansion area contained 3 to 4.4 inches of asphalt over 8.6 to 10.5 inches of asphalt, with total pavement sections of 13 to 13.5 inches. The soils

encountered were slightly silty fine sands which exhibited in-place CBR values of 20 to 25 percent in the upper 6 inches below subgrade and 25 to 30 percent in the upper 1 foot below subgrade.

LABORATORY TESTS

Representative samples of the subsurface soils were retained for laboratory tests. Three bulk samples were obtained by combining material from the upper 3 feet from adjacent borings: B-1 and B-2, B-3 and B-4, and B-5 and B-6. Moisture content samples were also collected at 1 feet and 3 feet from each boring. The soils encountered in the borings are predominantly slightly silty fine sands with Unified Soil Classifications of SP-SM and SM. Samples were compacted in accordance with ASTM D-698, standard Proctor. Maximum dry densities ranged from 107.0 to 108.6 pcf with optimum moisture contents ranging from 14.6 to 15.7 percent. Laboratory soaked CBR samples produced CBR values ranging from 13 to 21 percent at 0.1 inches of penetration, and 22 to 40 percent at 0.2 inches of penetration, with swells of less than 1 percent. All the soils encountered in the upper five feet at the site are non-plastic soils. The percent passing the #200 sieve in the proctor samples ranged from 7.9 to 9.1 percent. Natural moisture contents in the upper 1 foot ranged from 8.4 to 12.5 percent. Natural moisture contents at 3 feet ranged from 9.6 to 24.8 percent. Except for the deeper soils in borings B-1 and B-2, all soils in the upper 3 feet were below optimum moisture content. Moisture contents increased with depth in all borings.

RECOMMENDATIONS

The following recommendations are made based upon a review of the attached test boring and laboratory data, our understanding of the proposed construction, and experience with similar projects and subsurface conditions. Should site grading or structural plans change significantly from those now under consideration, we would appreciate being provided with that information so that these recommendations may be confirmed, extended, or modified as necessary. Additionally, should subsurface conditions adverse to those indicated by this report be encountered during construction, those differences should be reported to us for review and comment.

Site grading in the expansion areas should commence with stripping of the existing topsoil and root mat. We anticipate that the average thickness of the stripping will be approximately 6 inches. Some additional soil may need to be removed to reach design subgrade. Upon completion of stripping operations, areas near design subgrade or which will receive fill should be proofrolled with a loaded dump truck in the presence of a geotechnical engineer to identify areas which may require repair. The soils in the upper 3 feet are generally dry, and isolated loose areas can likely be densified with a vibratory roller. Some isolated areas may contain soils wet of optimum moisture content at approximately 3 feet below grade, and may require removal of the upper 1 to 2 feet of soil to expose these soils and dry them. Alternatively, the wet material can be undercut and replaced with dry soil. We recommend performing grading operations during the warmer drier months of the year to facilitate drying and limit the need for undercut.

All the soils in the upper 5 feet excluding the topsoil are suitable for use as fill if dried to near optimum moisture content. Soils used to backfill undercuts should consist of relatively clean sands with less than 12 percent passing the #200 sieve, and should be dry of optimum moisture content. Fill material should be placed and pavement subgrades prepared in accordance with FAA Item P-152.

Laboratory CBR tests indicate average soaked CBR values of 13 to 21 percent at 0.1-inch penetration and 22 and 40 percent at 0.2-inch penetration. We recommend using a CBR value of 20 percent or k-value of 295 pci for design of new rigid pavements in the expansion areas. Any off-site borrow materials used in the upper 12 inches of subgrade should be tested to confirm they will provide a design CBR value of 20 percent.

GeoTechnologies appreciates the opportunity to be of service to Talbert & Bright on this project. Please do not hesitate to contact us if you have any questions regarding this submittal.

Sincerely,

GeoTechnologies, Inc.

11-27-17

Conrad E. Harris
SC Reg. No. 34792

PROJECT:		SCALE: As Shown
Apron Expansion - Georgetown County Airport Georgetown, South Carolina	GeoTechnologies, Inc.	JOB No: 1-17-0903-EA
		FIGURE No: 1

TABLE 1

TEST BORING SUMMARY

Apron Expansion
Georgetown County Airport
Georgetown, South Carolina
GeoTechnologies Project No. 1-17-0903-EA

Boring	Depth (in.)	Description	USCS	DCP		In-Place CBR (%)
				Depth (ft)	Blows/ 1.75"	
B-1	0 - 36	Orange Tan Slightly Silty Medium to Fine SAND	SP-SM	1.0	11-13-13	
	36 - 60	Gray Slightly Silty Medium to Fine SAND	SP-SM	3.0	10-10-10	
		Water @ 50" at time of boring		5.0	15/1.75"	
B-2	0 - 4	Topsoil and Roots				
	4 - 36	Gray Tan Slightly Silty Medium to Fine SAND	SP-SM	1.0	15/1.5"	
	36 - 60	Brown Silty Coarse to Fine SAND (SM)	SP-SM	3.0	5-11-10	
		Water @ 52" at time of boring		5.0	15/1.75"	
B-3	0 - 6	Topsoil and Roots				
	6 - 54	Tan Slightly Silty Medium to Fine SAND	SP-SM	1.0	15/1.75"	
	54 - 60	Gray Slightly Silty Medium to Fine SAND	SP-SM	3.0	7-11-11	
		Water @ 54" at time of boring		5.0	6-15/1.75"	
B-4	0 - 6	Topsoil and Roots				
	6 - 12	Gray Slightly Silty Medium to Fine SAND	SP-SM	1.0	15/1.75"	
	12 - 36	Orange Tan Slightly Silty Fine SAND	SP-SM	3.0	9-7-7	
	36 - 60	Light Gray Brown Fine SAND	SP	5.0	1-1-1	
		Water @ 56" at time of boring				
B-5	0 - 8	Topsoil and Roots				
	8 - 14	Brown Silty Medium to Fine SAND	SM	1.0	15/1.75"	
	14 - 54	Tan Slightly Silty Medium to Fine SAND	SP-SM	3.0	6-8-8	
	54 - 60	Light Gray White Medium to Fine SAND	SP	5.0	9-15/1.75"	
		Water @ 58" at time of boring				
B-6	0 - 8	Topsoil and Roots				
	8 - 12	Brown Silty Medium to Fine SAND	SM	1.0	15/1.75"	
	12 - 56	Tan Slightly Silty Medium to Fine SAND	SP-SM	3.0	9-11-10	
	56 - 60	Gray Medium to Fine SAND	SP	5.0	4-9-4	
		Water @ 56" at time of boring				
P-1	0 - 4.44	Asphalt Pavement				
	4.44 - 13	CABC Stone				25 @ SG - 0.5'
	13 - 30	Tan Slightly Silty Fine SAND	SP-SM			30 @ SG - 1'
P-2	0 - 3	Asphalt Pavement				
	3 - 13.5	CABC Stone				20 @ SG - 0.5'
	13.5 - 30	Tan Slightly Silty Fine SAND	SP-SM			25 @ SG - 1'

TABLE 2

LABORATORY TEST SUMMARY

Apron Expansion
Georgetown County Airport
Georgetown, South Carolina
GeoTechnologies Project No. 1-17-0903-EA

Sample (Borings)	Depth (in.)	Natural Moisture (%)	Optimum Moisture (%)	Max. Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Passing #200 Sieve (%)	CBR @ 0.1"	CBR @ 0.2"	Swell (%)	Unified Soil Class.
B-1, B-2	SG - 3'	9.6 - 22.9	15.7	107.0	NP	NP	NP	8.1	13.1	21.5	0.6	SP-SM
B-3, B-4	SG - 3'	8.4 - 14.5	15.0	107.2	NP	NP	NP	7.9	21.1	39.8	0.1	SP-SM
B-5, B-6	SG - 3'	8.6 - 12.9	14.6	108.6	NP	NP	NP	9.1	19.2	32.2	-0.3	SP-SM

Boring	Depth (ft.)	Natural Moisture (%)
B-1	1	9.6
B-2	1	12.5
B-3	1	8.4
B-4	1	8.7
B-5	1	8.6
B-6	1	8.6

Boring	Depth (ft.)	Natural Moisture (%)
B-1	3	24.8
B-2	3	22.9
B-3	3	9.6
B-4	3	14.5
B-5	3	12.9
B-6	3	9.6

GeoTechnologies, Inc. CBR DATA SHEET ASTM D-1883

JOB #: 1-17-0903-EA JOB NAME: Georgetown Airport

DATE: 11/21/2017 SAMPLE I.D.: B-1, B-2 Depth: 0.5-3.0'

NOTES: PROCTOR DATA: TEST PROCEDURE: ASTM D-698

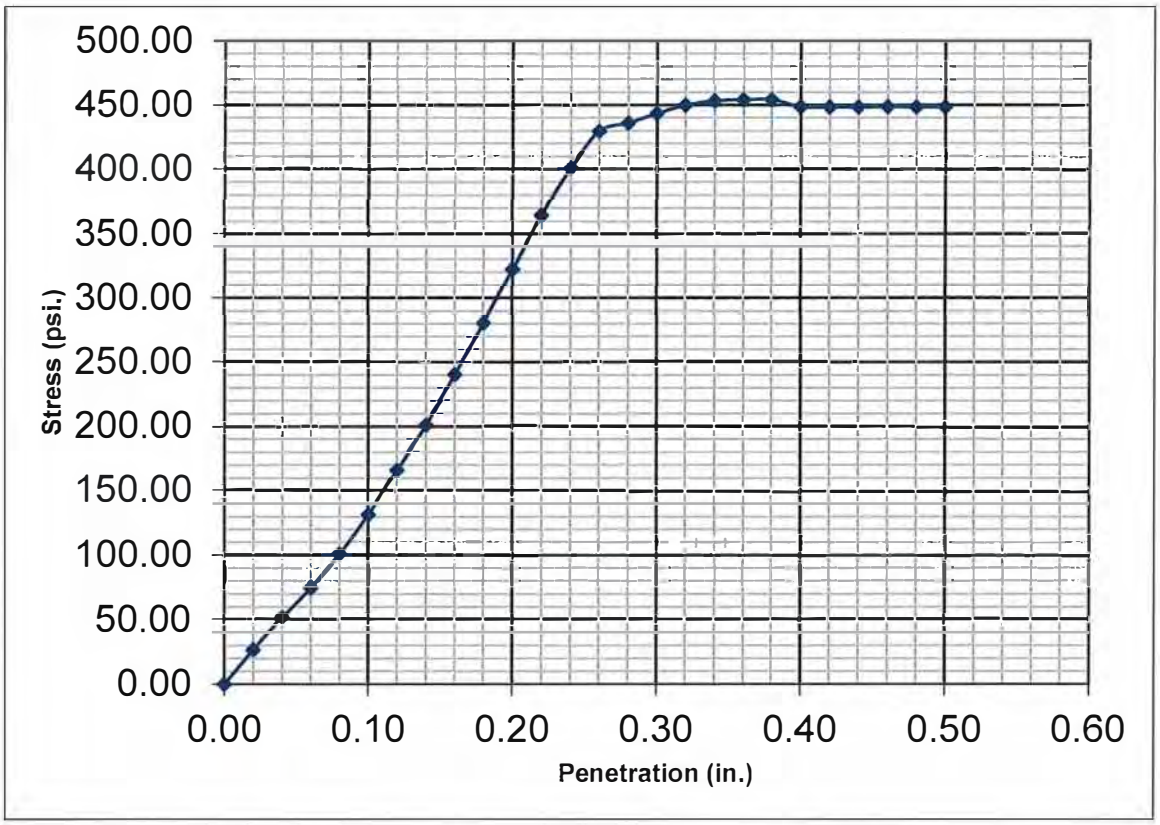
Opt. Moisture = 15.7% Max. Dry Density = 107.0 PCF

SOIL DESCRIPTION: Tan Slightly Silty Fine Sand

CBR SPECIMEN DATA		Swell Data	
MOISTURE CONTENT	16.1%	Initial Reading	0.166
WET DENSITY	124.2 lbs./cu.ft.	Final Reading	0.194
DRY DENSITY	107.0 lbs./cu.ft.	Mold Height	4.570
% COMPACTION	100.0 %	% Swell	0.61

LOAD CELL 5000 LB. RATE OF DEFORMATION .05 in./min.

SURCHARGE USED 10 lbs.



CBR @ 0.1"	13.1
CBR @ 0.2"	21.5
% SWELL	0.6

GeoTechnologies, Inc. **CBR DATA SHEET** **ASTM D-1883**

JOB #: 1-17-0903-EA **JOB NAME:** Georgetown Airport

DATE: 11/21/2017 **SAMPLE I.D.:** B-3, B-4 **Depth:** 0.5-3.0'

NOTES: **PROCTOR DATA:** TEST PROCEDURE: ASTM D-698

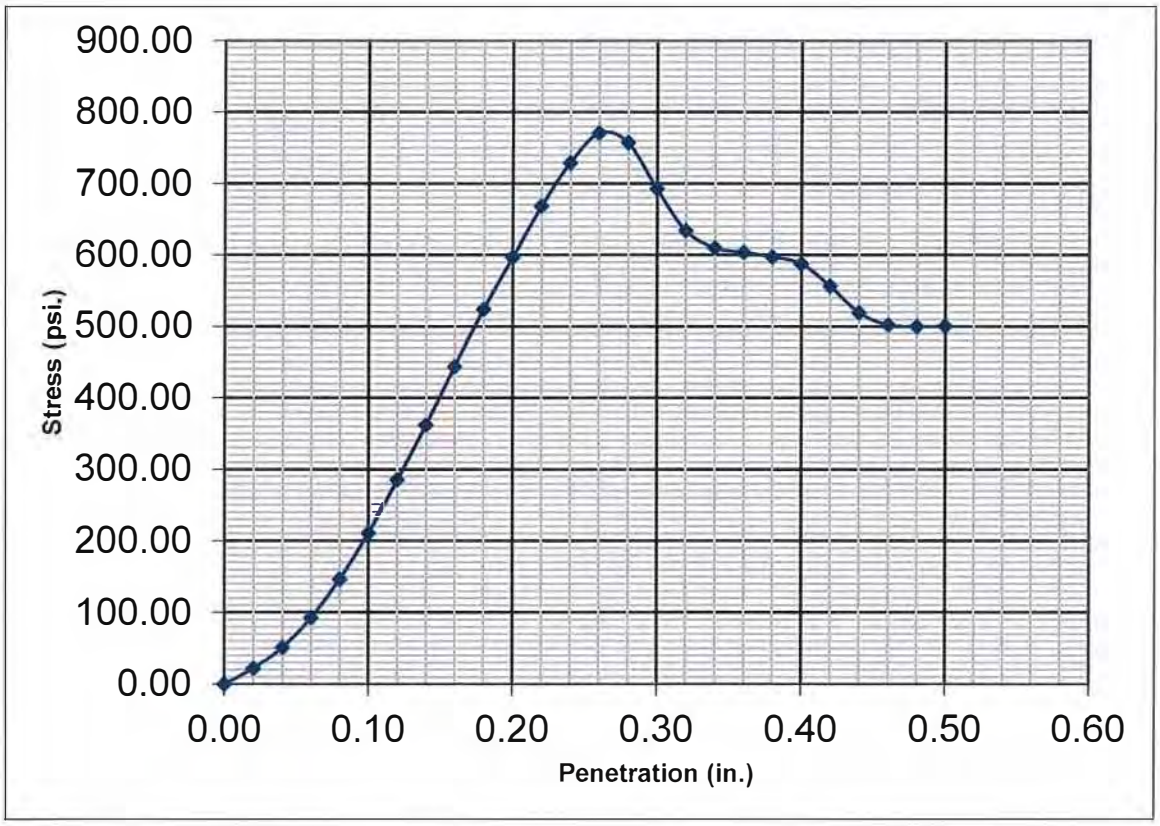
Opt. Moisture = 15.0% Max. Dry Density = 107.2 PCF

SOIL DESCRIPTION: Tan Slightly Silty Fine Sand

CBR SPECIMEN DATA		Swell Data	
MOISTURE CONTENT	15.0%	Initial Reading	0.060
WET DENSITY	122.6 lbs./cu.ft.	Final Reading	0.064
DRY DENSITY	106.6 lbs./cu.ft.	Mold Height	4.598
% COMPACTION	99.4 %	% Swell	0.09

LOAD CELL 5000 LB. RATE OF DEFORMATION .05 in./min.

SURCHARGE USED 10 lbs.



CBR @ 0.1"	21.1
CBR @ 0.2"	39.8
% SWELL	0.1

GeoTechnologies, Inc. **CBR DATA SHEET** **ASTM D-1883**

JOB #: 1-17-0903-EA **JOB NAME:** Georgetown Airport

DATE: 11/21/2017 **SAMPLE I.D.:** B-5, B-6 **Depth:** 0.5-3.0'

NOTES: **PROCTOR DATA:** TEST PROCEDURE: ASTM D-698

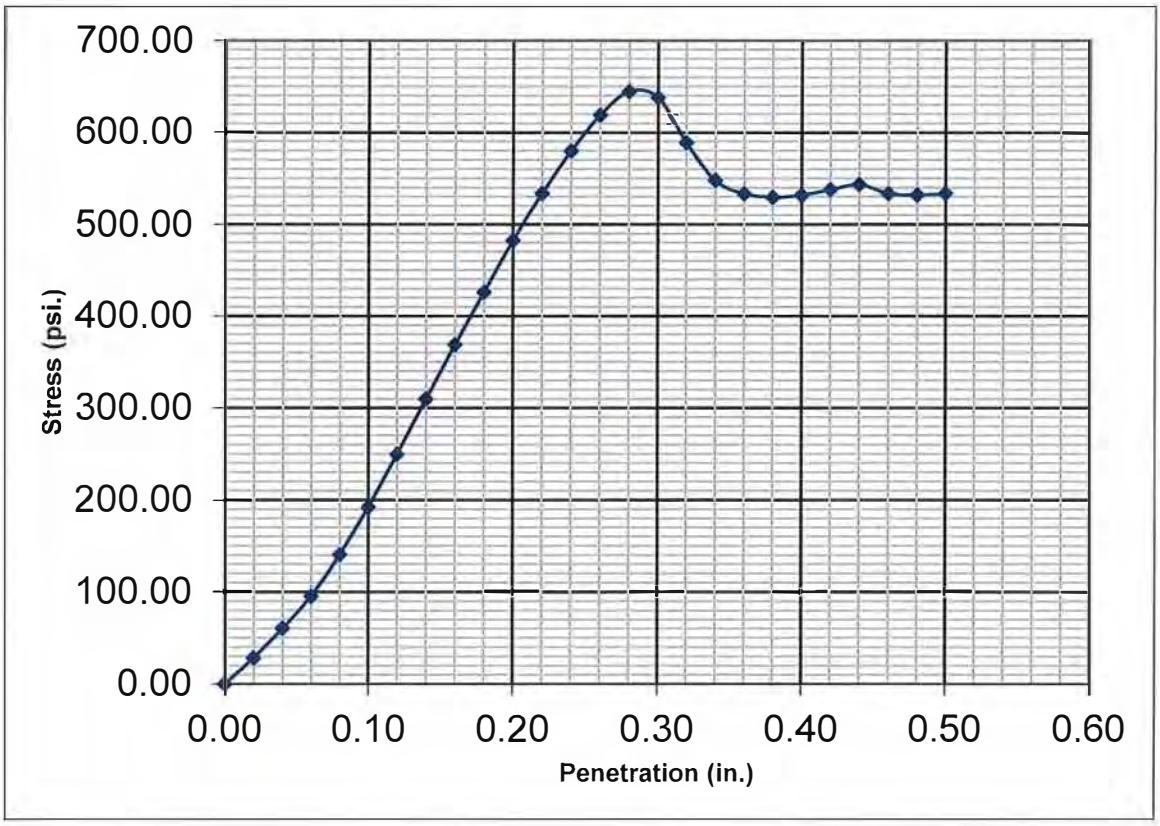
Opt. Moisture = 14.6% Max. Dry Density = 108.6 PCF

SOIL DESCRIPTION: Tan Slightly Silty Fine Sand

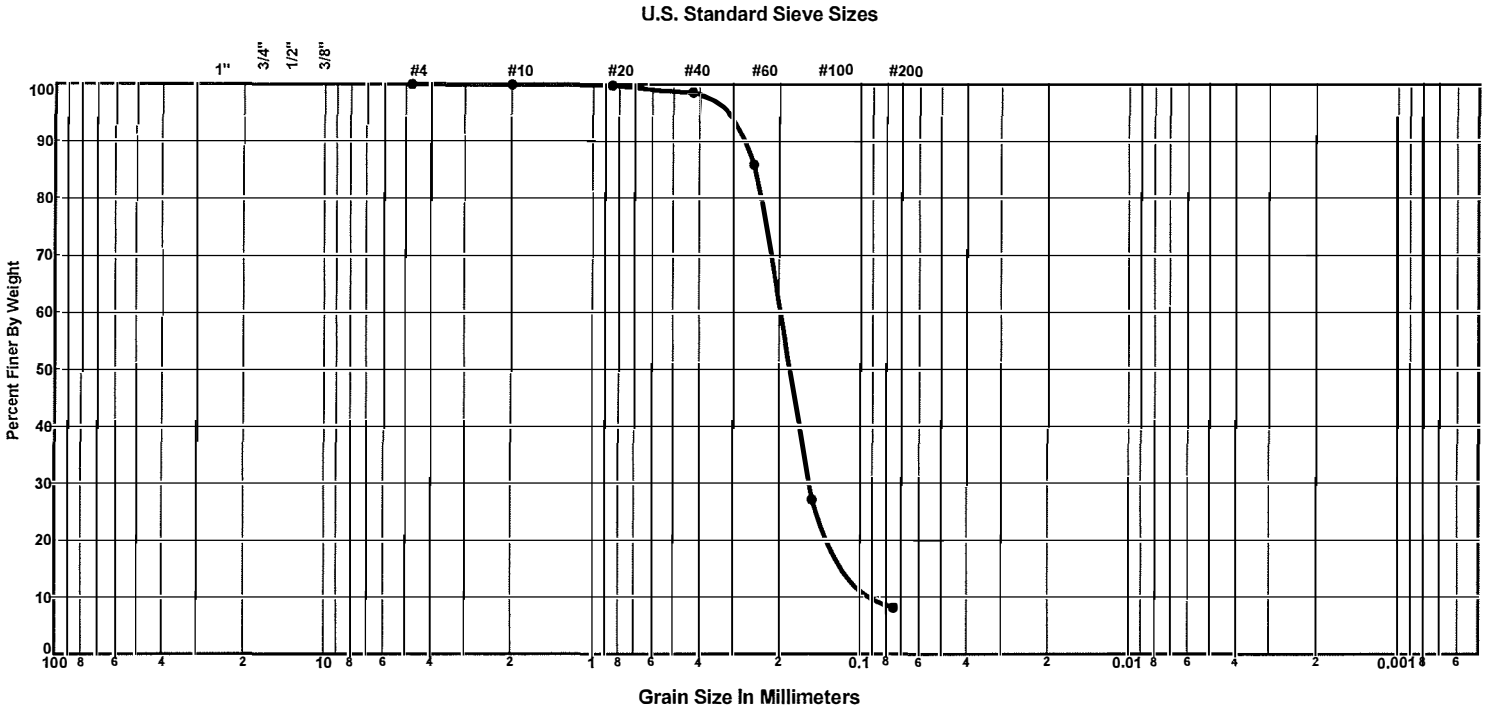
CBR SPECIMEN DATA		Swell Data	
MOISTURE CONTENT	15.0%	Initial Reading	0.399
WET DENSITY	124.7 lbs./cu.ft.	Final Reading	0.387
DRY DENSITY	108.4 lbs./cu.ft.	Mold Height	4.593
% COMPACTION	99.8 %	% Swell	-0.26

LOAD CELL 5000 LB. RATE OF DEFORMATION .05 in./min.

SURCHARGE USED 10 lbs.



CBR @ 0.1"	19.2
CBR @ 0.2"	32.2
% SWELL	-0.3



GRAVEL		SAND			FINES	
COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

Boring No.	Elev./Depth	Nat. W.C.	L.L.	P.L.	P.I.	Soil Description or Classification
B-1, B-2	0.5-3.0'		NP	NP	NP	Tan Slightly Silty Fine Sand

Project:

Georgetown Co. Airport
Georgetown, SC

Job No.: 1-17-0903-EA

Date Recieved: 11/8/2017

Date: 11/20/17

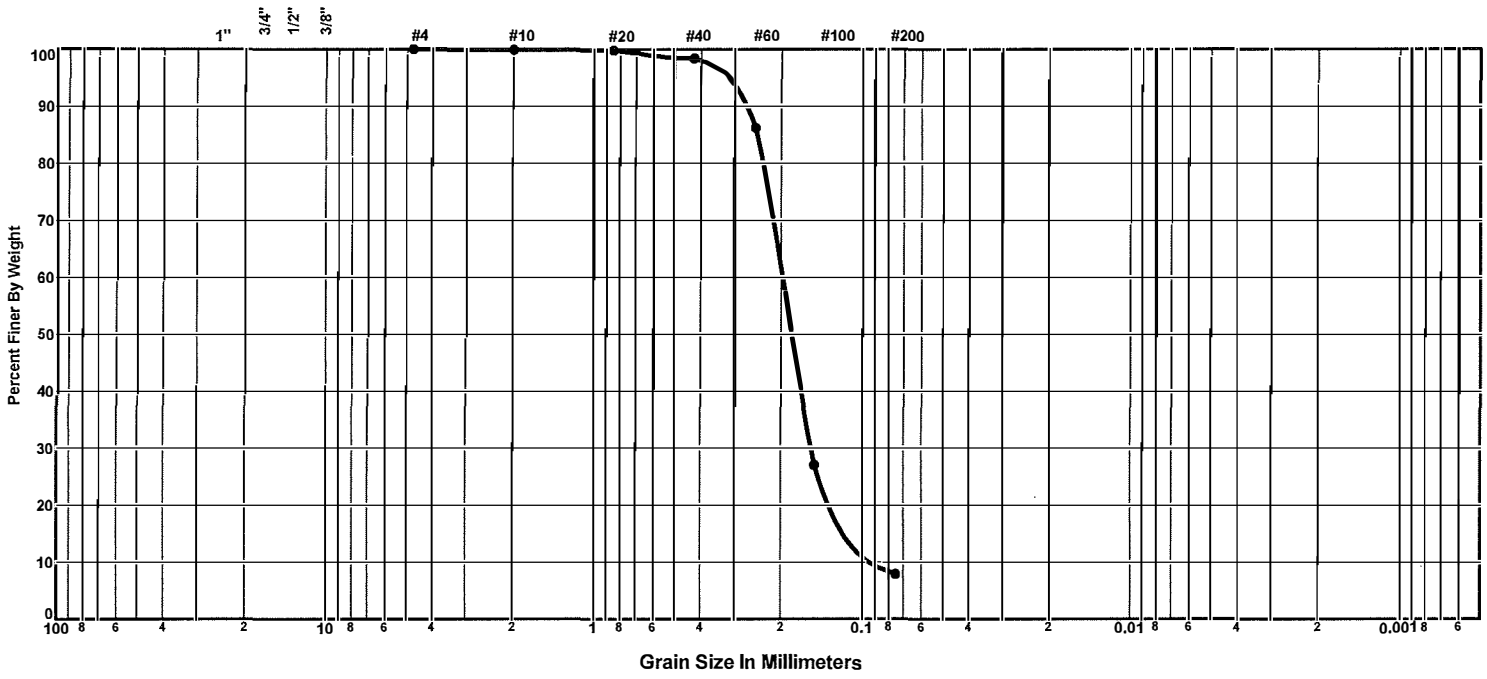
Dates Tested: 11/8-11/15/2017

GRAIN SIZE DISTRIBUTION

GeoTechnologies Inc

3200 Wellington Court, Ste 108
Raleigh, NC 27615

U.S. Standard Sieve Sizes



Grain Size In Millimeters

GRAVEL		SAND			FINES	
COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

Boring No.	Elev./Depth	Nat. W.C.	L.L.	P.L.	P.I.	Soil Description or Classification
B-3, B-4	0.5-3.0'		NP	NP	NP	Tan Slightly Silty Fine Sand

GRAIN SIZE DISTRIBUTION

GcoTechnologies Inc

3200 Wellington Court, Ste 108
Raleigh, NC 27615

Project:

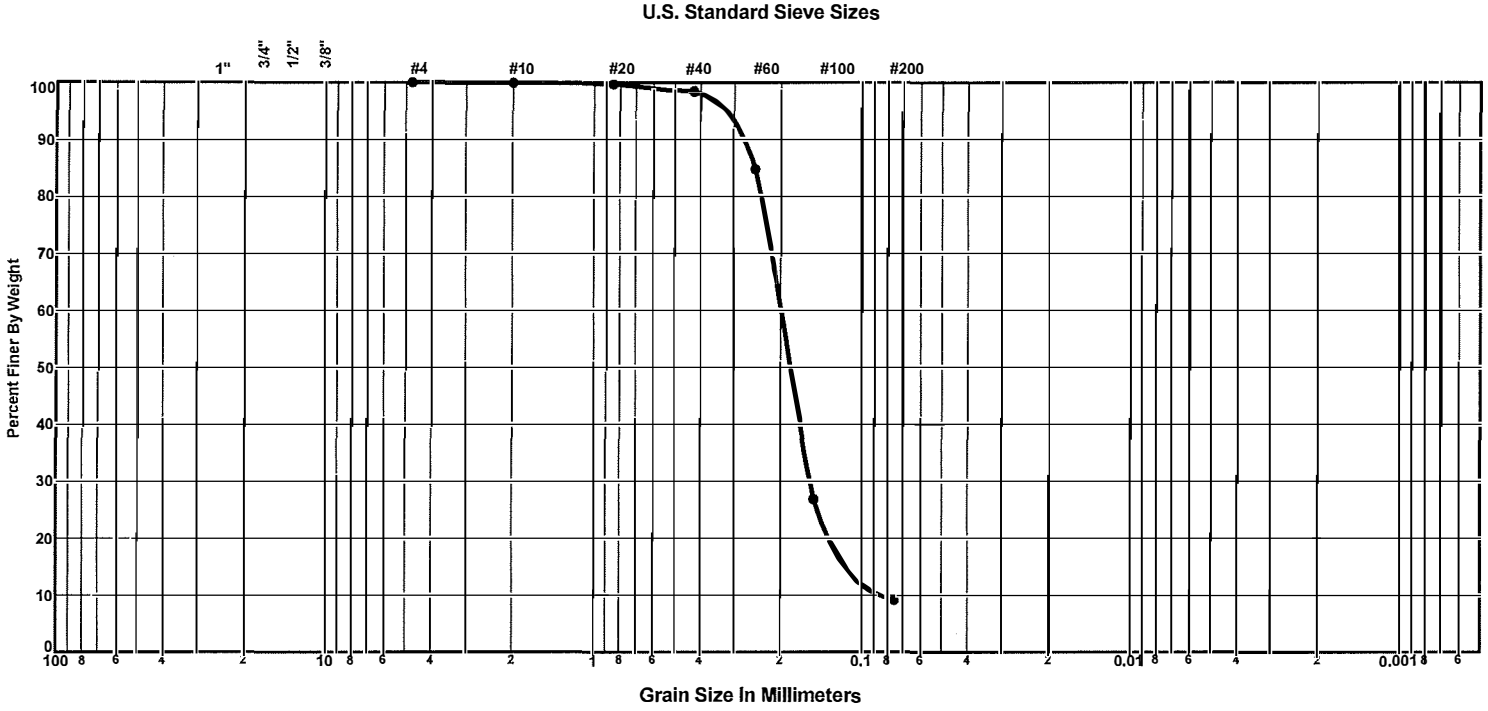
Georgetown Co. Airport
Georgetown, SC

Job No.: 1-17-0903-EA

Date: 11/20/17

Date Recieved: 11/8/2017

Dates Tested: 11/8-11/15/2017



GRAVEL		SAND			FINES	
COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

Boring No.	Elev./Depth	Nat. W.C.	L.L.	P.L.	P.I.	Soil Description or Classification
B-5, B-6	0.5-3.0'		NP	NP	NP	Tan Slightly Silty Fine Sand

GRAIN SIZE DISTRIBUTION

GeoTechnologies Inc

3200 Wellington Court, Ste 108
Raleigh, NC 27615

Project:

Georgetown Co. Airport
Georgetown, SC

Job No.: 1-17-0903-EA

Date Recieved: 11/8/2017

Date: 11/20/17

Dates Tested: 11/8-11/15/2017

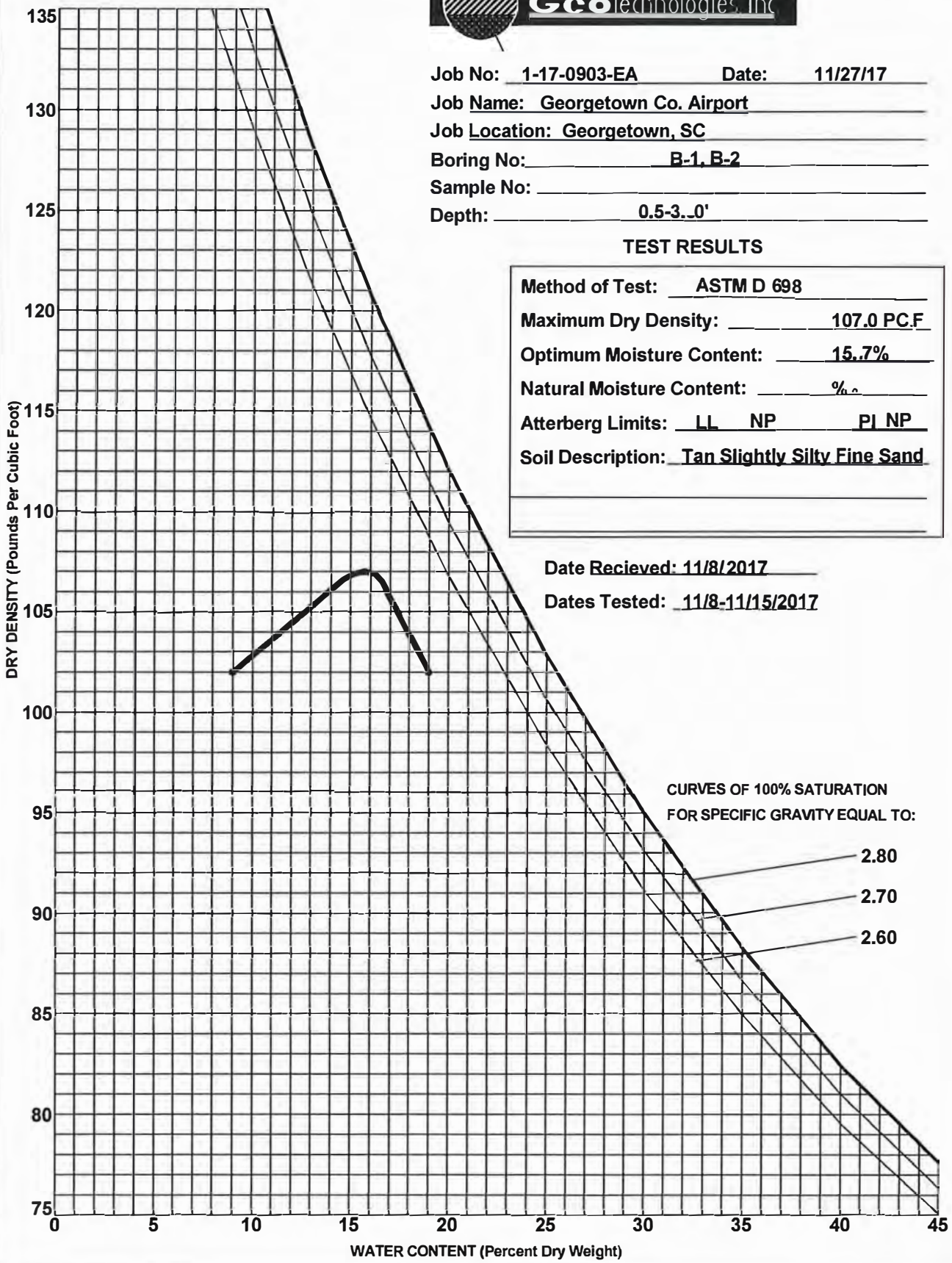
GCO Technologies, Inc

Job No: 1-17-0903-EA Date: 11/27/17
Job Name: Georgetown Co. Airport
Job Location: Georgetown, SC
Boring No: B-1, B-2
Sample No:
Depth: 0.5-3.0'

TEST RESULTS

Method of Test: ASTM D 698
Maximum Dry Density: 107.0 PCF
Optimum Moisture Content: 15.7%
Natural Moisture Content: %
Atterberg Limits: LL NP PI NP
Soil Description: Tan Slightly Silty Fine Sand

Date Recieved: 11/8/2017
Dates Tested: 11/8-11/15/2017



MOISTURE-DENSITY RELATIONSHIP

3200 Wellington Court, Ste 108
Raleigh, NC 27615

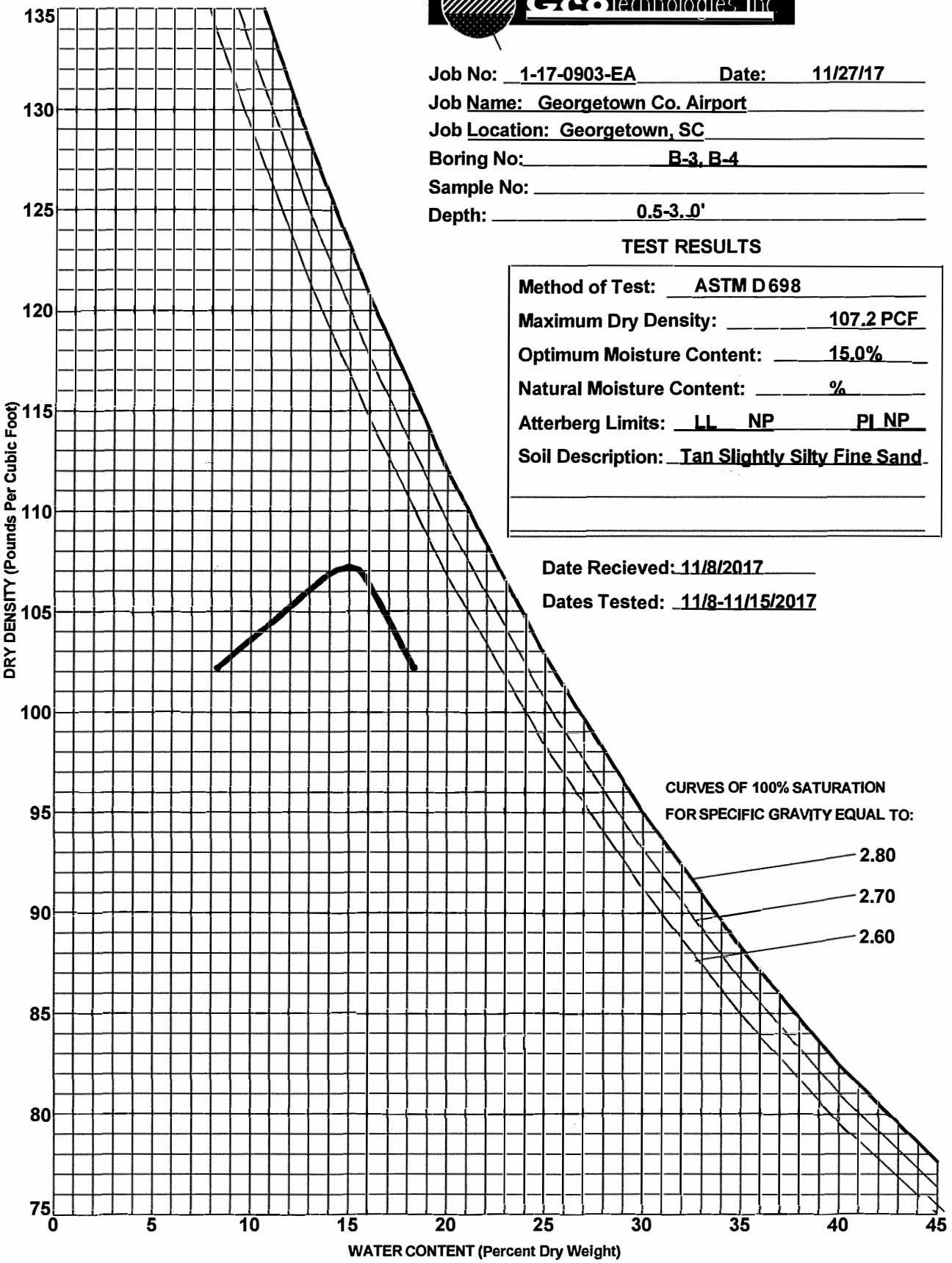
GeoTechnologies, Inc.

Job No: 1-17-0903-EA Date: 11/27/17
Job Name: Georgetown Co. Airport
Job Location: Georgetown, SC
Boring No: B-3, B-4
Sample No:
Depth: 0.5-3.0'

TEST RESULTS

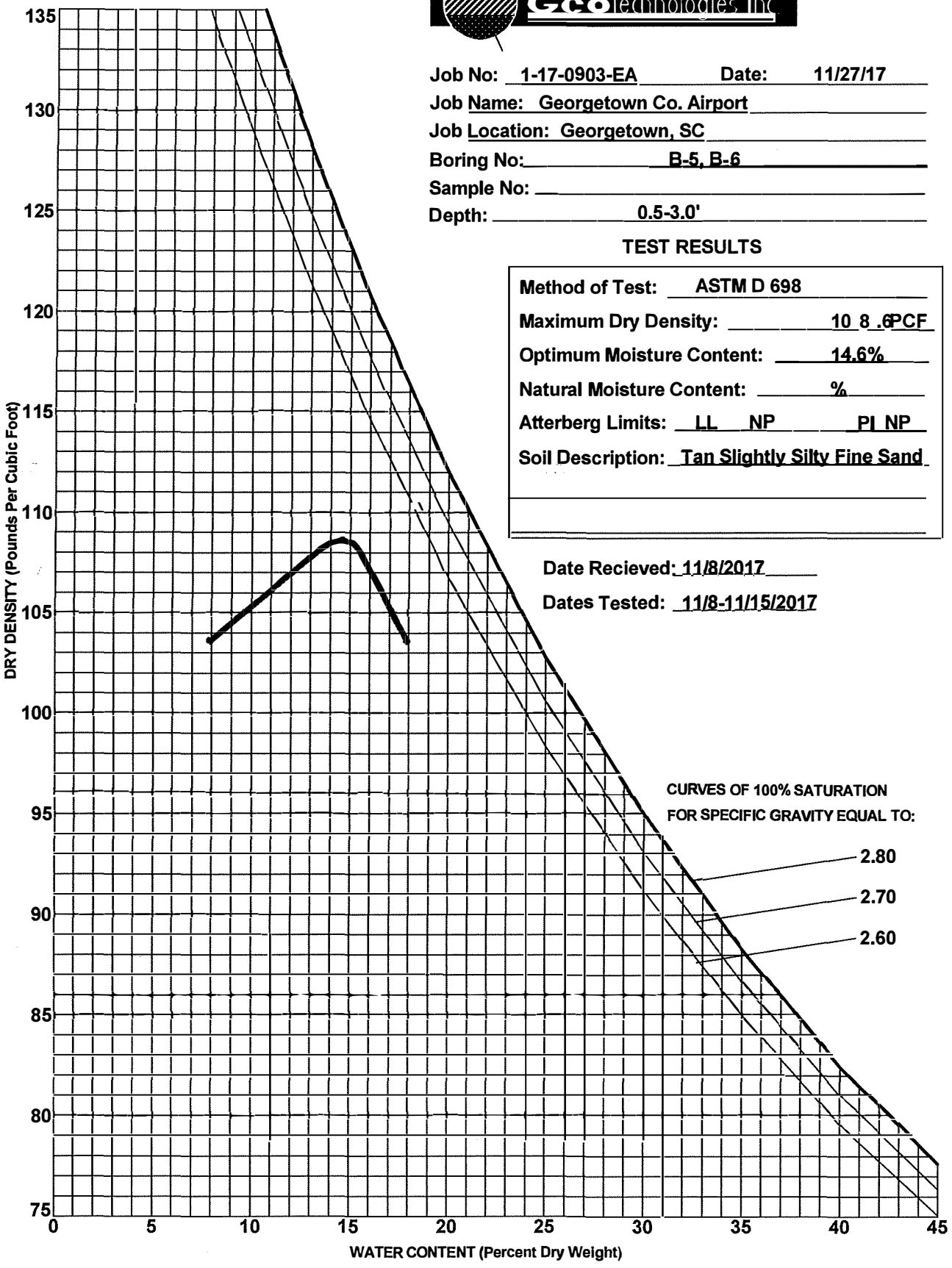
Method of Test: ASTM D 698
Maximum Dry Density: 107.2 PCF
Optimum Moisture Content: 15.0%
Natural Moisture Content: %
Atterberg Limits: LL NP PI NP
Soil Description: Tan Slightly Silty Fine Sand

Date Recieved: 11/8/2017
Dates Tested: 11/8-11/15/2017



MOISTURE-DENSITY RELATIONSHIP

3200 Wellington Court, Ste 108
Raleigh, NC 27615



GeoTechnologies Inc

Job No: 1-17-0903-EA Date: 11/27/17

Job Name: Georgetown Co. Airport

Job Location: Georgetown, SC

Boring No: B-5, B-6

Sample No:

Depth: 0.5-3.0'

TEST RESULTS

Method of Test: ASTM D 698

Maximum Dry Density: 10 8 .6PCF

Optimum Moisture Content: 14.6%

Natural Moisture Content: %

Atterberg Limits: LL NP PI NP

Soil Description: Tan Slightly Silty Fine Sand

Date Recieved: 11/8/2017

Dates Tested: 11/8-11/15/2017

MOISTURE-DENSITY RELATIONSHIP

3200 Wellington Court, Ste 108
Raleigh, NC 27615

APPENDIX ‘G’
CONSTRUCTION SAFETY PHASING PLAN (CSPP)

CONSTRUCTION SAFETY AND PHASING PLAN (CSPP)

APRON EXPANSION (PHASE IV)

AIP NO. 3-45-0024-019

GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA

Prepared For:

GEORGETOWN COUNTY, SOUTH CAROLINA AND GEORGETOWN COUNTY AIRPORT COMMISION

In Cooperation With:

FEDERAL AVIATION ADMINISTRATION

And

SOUTH CAROLINA AERONAUTICS COMMISION

Engineer:
TALBERT & BRIGHT, INC.
Engineering and Planning Consultants
4810 Shelley Drive
Wilmington, NC 28405
(910) 763-5350

TBI No. 2601-1702
January 2017
SC Engineering License No. C00386

CONSTRUCTION SAFETY AND PHASING PLAN (CSPP)

APRON EXPANSION (PHASE IV)

AIP NO. 3-45-0024-019

GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA

Prepared For:

GEORGETOWN COUNTY, SOUTH CAROLINA AND GEORGETOWN COUNTY AIRPORT COMMISION

In Cooperation With:

FEDERAL AVIATION ADMINISTRATION

And

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TBI No. 2601-1702
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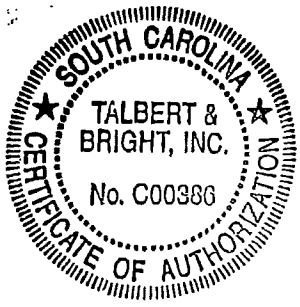
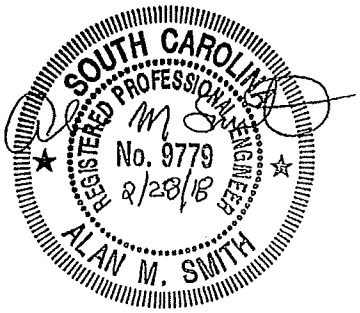




Construction Safety and Phasing Plan (CSPP)
Aron Expansion (Phase IV)
Georgetown County Airport

January 2018

INTRODUCTION

The Apron Expansion (Phase IV) project involves expanding the existing apron 4,250 square yards (425' x 90') to allow parking of larger aircraft currently utilizing the Airport while maintaining aircraft traffic flow through the existing apron area. The project includes earthwork, erosion control, paving, and marking. The project limits are depicted on the Drawings A1.2 and A1.3 attached in Appendix "A".

This project will not impact Runway 5-23, Runway 11-29, or Taxiway 'A'. As such, the Runways and Taxiway 'A' will remain open at all times during this project. Construction will occur adjacent to an existing section of Apron which will require closure of adjacent section of Apron and tie-down parking spaces.

This Construction Safety and Phasing Plan has been prepared in accordance with FAA Advisory Circular (AC) 150/5370-2G. The Plan is organized into 18 chapters corresponding to article 204 of Chapter 2 of the AC.

Chapter 1 - COORDINATION

a. **Pre-Bid Conference.** A pre-bid conference for the project will be held prior to the bid opening date. The conference will be attended by the Owner, Engineer and the construction community.

b. **Pre-Construction Conference.** A pre-construction conference will be held following contract award and prior to Notice-to-Proceed. Invitees will include representatives of the Owner, Engineer, Contractor, key sub-contractors and suppliers, FAA-ADO, FAA-SSC, and other interested parties.

c. **Construction Progress Meetings.** Progress meetings with representatives of the Owner and Engineer will be held throughout the project. Local SSC personnel will be invited. These meetings will generally be held bi-weekly, but may be more frequent during critical phases of the work. The purpose of these meetings will be scheduling and coordination of the work activities and discussion of operational, safety, and security matters. The Contractor will be required to have a qualified representative at each of these meetings. Safety, security, schedule, and local coordination (SSC/Airport/NOTAMs, etc.) will be standing agenda items.

d. **Scope or Schedule Changes.** Any work scope changes contemplated will be discussed and coordinated at progress meetings and formally approved as appropriate prior to implementation. The contractor is required to prepare, submit, and regularly update a detailed construction progress schedule for the project. The schedule, and any contemplated changes, will be discussed at the pre-construction conference and all progress meetings.

e. **FAA ATO Coordination.** This project will not involve any closures of the Runway 5-23 or Taxiway 'A'. Sections of apron will be closed for a short duration. The Airport will issue the appropriate NOTAMs for this closure.

Chapter 2 - PHASING

a. **Phase Elements.** The project involves earthwork, erosion control, paving, and marking. The Project Layout and Safety Plan (Sheet A1.2) shows detailed information about general operations and safety requirements, and barricade locations. The Phasing Plan (Sheet A1.3) shows phasing plan layout, safety requirements, and proposed sequence of construction. The areas of operations affected by the construction activity and mitigation of the effects are listed in Chapter 3: Areas of Operations Affected by the Construction.

Contract times, allowable hours of operations and liquidated damages for each Phase are shown below:

Table 1: Contract Time and Liquidated Damages

TABLE 1			
Work Phase	**Contract Time**	**Allowable Hours of Operation**	**Liquidated Damages**
Apron Expansion (Phase IV)	60 Calendar Days	24 Hours per Day	$1,500.00 per Calendar Day
Removal of Sedimentation and Erosion Control Items	3 Calendar Days	24 Hours per Day	$1,500 per Calendar Day

b. **Construction Safety Drawings.** The Project Layout and Safety Plan (Sheet A1.2) and Phasing Plan (Sheet A1.3) are included in Appendix 'A'. Information is also provided in Section PSP-6 of the Project Special Provisions.

Chapter 3 - AREAS AND OPERATIONS AFFECTED BY THE CONSTRUCTION ACTIVITY

a. **Identification of Affected Areas.** The project will require closure of a section of the existing apron to allow for the apron expansion construction. Runway 5-23, Runway 11-29, and Taxiway 'A' will remain open at all times, therefore should not have any significant effects on aircraft operations.

b. **Mitigation of Effects.** Sections of the apron will also be closed during construction which may pose some minor inconveniences on aircraft movements on the apron. The Contractor will be required to install lighted barricades for the impacted section of the apron. The Contractor will be required to provide 7 business days' notice prior to closure which will allow Airport Management sufficient time to coordinate the closure with Airport tenants and users. The Airport will issue the appropriate NOTAMs for the affected apron operations.

Mitigation of impacts will also be provided by careful scheduling and coordination of the work with Airport Management.

The Contractor will be required to communicate, coordinate, and cooperate with the Engineer, Resident Project Representative (RPR), and airport management regarding the work schedule and activities.

Chapter 4 - PROTECTION OF NAVIGATION AIDS (NAVAIDs)

The work areas of this project do not impact NAVAIDs on the Airport.

The requirements for protection of existing facilities are presented in Sections PSP-13, PSP-14, and PSP-15 of the Project Special Provisions.

Airport facilities staff will be invited to all project meetings to assure coordinated efforts to locate and protect the affected infrastructure.

Chapter 5 - CONTRACTOR ACCESS

a. **Location of Stockpiled Construction Materials.** All stockpiles of materials or equipment shall be located in the contractor staging areas as shown on the plans or as coordinated with the Airport. The staging area is shown on the Plans. All loose items within the staging areas shall be secured at all times. Prior to leaving work each day, the Contractor shall return all construction materials and equipment to the staging areas.

The contractor shall dispose all excess soil and debris from construction operations off Airport property in a properly permitted location.

b. **Vehicle and Pedestrian Operations**

1) **Construction site parking.** Personal cars shall be parked outside of secured airfield areas.

2) **Construction equipment parking.** Prior to leaving work each day, Contractor shall return all equipment to the staging areas. For locations of staging areas, see Sheet A1.2 and Sheet A1.3 of the Plans.

3) **Access and haul roads.** Access roads to be used under this Contract shall be those shown on Sheet A1.2 of the Plans. The Contractor shall confine his equipment and hauling where practical to existing roads on the Airport. If existing pavement or road surface is damage by the Contractor's operations, it shall be repaired to its original condition. Metal track vehicles will not be permitted to operate on or across existing pavement without protective matting to prevent marring of the pavement surface.

The Contractor shall conduct his operations in such a manner as to assure that such operations do not impede access to any area of the airfield at any time by the emergency vehicles. Emergency vehicle access shall be a standing agenda item for all progress meetings. The Contractor shall cooperate fully and immediately with any directives issued by Airport Management relative to emergency access.

4) **Marking and lighting of vehicles.** All vehicles operating in the AOA shall be lighted or flagged in accordance with FAA Advisory Circular 150/5210-5D, "Painting, Marking, and Lighting of Vehicles Used on an Airport". Copies of the Advisory Circular will be made available upon request.

5) **Description of proper vehicle operations.** All construction vehicles must be cleared for access by the Airport Management.

6) **Required escorts.** All Contractor personnel, including but not limited to, general laborers, subcontractors, drivers, and journeymen working within active air operations areas must at all times remain within visual and voice range of Contractor supervisory personnel. For the purposes of this project, the air operations areas (AOA) refer to all areas within the airport security fence.

7) **Situational awareness.** Men, equipment, or other construction-related material are not allowed within the RSA of an open runway or TSA of an open Taxiway at any time.

   Movement of construction vehicles will be restricted to construction areas by placement of lighted barricades. See Sheet A1.2 and Sheet A1.3 for barricade locations.

   Contractor will be required to ensure that no construction employees, employees of subcontractors or suppliers, or other persons enter any part of the Air Operations Areas (AOA) from the construction site unless authorized.

   During construction, adjacent apron areas, taxilanes, taxiways, and runway will be open to aircraft unless otherwise noted. Aircraft will have the right of way at all times. Contractor shall be aware of the aircraft movements and the jetblast and/or prop-wash associated with these aircraft. The Contractor shall secure loose items.

c. Two-Way Radio Communications

1) **General**. Radios will be provided by the Airport for the Contractor to use.

d. Airport Security

1) **Fencing and gates.** The Contractor shall coordinate ingress-egress requirements with the Airport Management. All open gates to secured airport areas shall be monitored continuously by Contractor's personnel to control access to secured area or shall be closed and locked. Contractor personnel shall not allow any unauthorized personnel or animals to enter through the construction gate. The Contractor shall be responsible for securing and locking all gates when not in use and at the end of each day's operations.

Prior to entering the secured AOA of the airport each day, the Contractor shall check in with the Airport. Close coordination for access to work areas and schedules between the Contractor, other Contractors working in the project area, and Airport will be required throughout the project. Contractor shall provide a list of all key holders for Contractor's locks seven days prior to construction.

2) Airports subject to 49 CFR Part 1542, Airport Security, must meet standards for access control, movement of ground vehicles, and identification of construction contractor and tenant personnel.

Chapter 6 - WILDLIFE MANAGEMENT

a. **Trash.** The Contractor shall clean all construction areas of litter, loose papers, debris, etc. on a daily basis, or as directed by the Engineer/Airport. Food scraps must be collected and properly disposed of by construction personnel. Prior to the close of daily operations, Contractor shall inspect all active Air Operations Areas and construction areas for litter. All debris shall be cleaned up and properly disposed of prior to release of crews from each shift.

b. **Standing Water.** If wet conditions are encountered during construction, Contractor is responsible for dewatering areas to remove standing water.

c. **Tall Grass and Seeds.** All seeding shall comply with the Seeding Specifications (T-901) to avoid seed mixtures that will attract wildlife. The Contractor shall protect seeded areas against traffic. Surfaces gullied or otherwise damaged following seeding shall be repaired by regrading and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.

d. **Poorly Maintained Fencing and Gates.** The airport perimeter fencing and gates shall be carefully protected by the Contractor. Any facilities damaged by the Contractor will be repaired immediately and restored to original condition at Contractor's cost

e. **Disruption of Existing Wildlife Habitat.** The airport actively manages wildlife. This project is not expected to disrupt any existing wildlife habitat.

Contractor shall notify Airport Management and Engineer immediately of any wildlife encounters and/or sightings.

Chapter 7 - FOREIGN OBJECT DEBRIS (FOD) MANAGEMENT

1. Waste and loose materials, commonly referred to as FOD, are capable of causing damage to aircraft landing gears, propellers, and jet engines. During construction operations, Contractor is responsible for monitoring and controlling FOD to the satisfaction of Airport Management and the Engineer. Prior to the close of daily operations, Contractor shall inspect all construction areas to ensure that they are clear of FOD.

2. Prior to reopening any construction work area, Contractor must perform a walk through with Airport Management and the Engineer to confirm that the areas are free of FOD or other hazards.

Chapter 8 - HAZARDOUS MATERIALS (HAZMAT) MANAGEMENT

1. Contractor shall be responsible for oil management and for expeditious containment and clean-up of spills on the Airport property resulting from fuel, lubricant or hydraulic fluid leaks from construction vehicles and/or equipment.

2. The Contractor shall furnish to the Engineer and Airport maintenance and safety staff, MSDS sheets for all chemicals used during construction, including but not limited to lime products.

3. Transport and handling of other hazardous materials on an Airport also requires special procedures. See AC 150/5320-15A, Management of Airport Industrial Waste.

Chapter 9 - NOTIFICATION OF CONSTRUCTION ACTIVITIES

a. Maintenance of a List of Responsible Representatives/Points of Contact

1) The Contractor and all subcontractors shall designate a representative and alternate to contact on a 24-hour basis should problems arise. The point of contact provided must be able to coordinate an immediate response to correct any construction-related activity that may adversely affect the operational safety of the Airport. The Contractor shall provide a listing of all contact persons of all supervisory personnel and all subcontractors.

2) The Contractor must also provide a safety/construction inspector familiar with airport safety to monitor construction activities.

3) The Contractor shall coordinate with airport management when working in areas containing airfield lighting cable.

Contacts are:
Airport Management (843) 545-3638

b. Notices to Airmen (NOTAM). The Owner will issue the necessary NOTAMS to reflect hazardous and operational conditions. The Contractor shall work with the Engineer and Owner to schedule NOTAM issuance and Airport Operations Area (AOA) closures, and shall provide the Owner and Engineer with advance notice of the need to issue or close a NOTAM. It is important that NOTAMS be kept current and reflects the actual conditions with respect to construction situations. Active NOTAMS shall be reviewed periodically and revised to reflect the current conditions.

The Contractor shall not begin work unless and until 72 hours prior notice has been given to the Engineer and Airport Management. Crossing of runways or taxiways is not allowed. Contractor is prohibited from entering the runway safety areas, taxiway safety areas, and NAVAID critical areas at any time unless the runway or taxiway are closed or Contractor is under radio control (See Chapter 5, Section 1).

c. Emergency Notification Procedures. In an emergency situation the Contractor is to call 911 and notify the Airport Management immediately. The Airport Management can be reached by phone at (843) 545-3638.

d. Coordination with ARFF Personnel. Emergency access routes will be coordinated with Airport Management and modified to work around proposed construction areas. See Sheet A1.2 and Sheet A1.3 for construction work areas. The airport safety staff will be invited to all project meetings for coordination of safety and security matters.

e. **Notification to the FAA**

1) **Part 77.** If Contractor utilizes cranes, bucket trucks, or other equipment exceeding 25 feet in height, Contractor is responsible for filing a "Notice of Proposed Construction or Alteration" (FAA Form 7460) with FAA prior to erecting equipment. Contractor should allow at least 30 days for FAA review. Detailed instructions can be found on the FAA website: https://oeaaa.faa.gov/oeaaa/external/portal.jsp.

2) **NAVAIDs.**

a) No NAVAIDs will be shut down during this project.

Chapter 10 - INSPECTION REQUIREMENTS

a. Daily Inspections

1) A daily start-up and shut-down checklist will be jointly prepared by the Contractor and Airport Management. The checklist will be followed throughout the project. This checklist shall include, but not be limited to, barricades, haul routes, securing of access gates, clean up, etc. The Contractor's site supervisor and labor crew shall not leave the work site until such time as the Airport has inspected the area and signed off on the daily checklist.

2) Frequent inspections will be made by the Airport Management during critical phases of the work to ensure that the Contractor is following the recommended airfield safety procedures.

b. Final Inspections

1) Prior to reopening the apron area, Contractor must perform a walkthrough of the construction area with Airport Management and the Engineer to confirm that the apron areas are free of FOD or other hazards.

2) Contractor shall be required to remedy any deficiencies immediately, whether caused by negligence, oversight, or project scope change to the satisfaction of Airport Management and the Engineer.

Chapter 11 - UNDERGROUND UTILITIES

1. Underground utilities are known to be located in the project areas. Existing underground utilities including but not limited to underground runway and taxiway lighting and ground systems, and other utilities are located near the construction. Locations of utilities if shown on the Plans are approximate only. All utilities and facilities are not necessarily indicated on Plans. It shall be the Contractor's responsibility to locate and protect existing utilities and facilities from damage. Utility contact information is listed in Chapter 9.(a)(3).

2. All existing facilities will be carefully protected by the Contractor. Any facilities damaged by the Contractor will be repaired immediately and restored to original condition at the Contractor's expense. All facilities to remain in service shall be protected by suitable means. If damaged by the Contractor, these and any other above or below ground facilities shall be repaired at the Contractor's expense, to the satisfaction of the Engineer and the Owner.

3. Facilities in the area include but are not limited to storm drain pipes and sanitary sewer pipes. The Contractor shall be solely responsible for location and protecting all existing above and underground facilities, and shall bear all associated costs within the Item "Mobilization". The Contractor shall employ a private utility locator service or shall obtain and utilize cable locating equipment in order to field locate existing cable runs not to be disturbed/replaced by this project.

4. It is understood and agreed that the Owner does not guarantee the accuracy or the completeness of the location information relating to existing utility services, facilities or structures that may be shown on the plans or encountered in the work. Any inaccuracy or omission in such information shall not relieve the Contractor of his/her responsibility to protect such existing features from damage or unscheduled interruption of service.

5. Should the Contractor damage or interrupt the operations of a utility service or facility outside the project limits by accident or otherwise, he shall immediately notify the proper authority and the Engineer and shall take all reasonable measures to prevent further damage or interruption of service. The Contractor, in such events, shall cooperate with the utility service or facility owner and the Engineer continuously until such damage has been repaired and service restored to the satisfaction of the utility or facility owner.

6. The Contractor shall bear all costs of damage and restoration of service to any utility service or facility due to his/her operations whether or not due to negligence or

accident. The Contract Owner reserves the right to deduct such costs from any monies due or which may become due to the Contractor.

Chapter 12 - PENALTIES

1. Crossing or entering active Air Operations Area without prior approval from Airport will subject Contractor personnel loss of privilege of moving across active Air Operations Areas.

Chapter 13 - SPECIAL CONDITIONS

1. The Contractor's supervisory personnel are expected to become knowledgeable regarding the airport's operational, safety and security requirements, actively participate in project meetings, establish effective communications with the Resident Project Representative, Airport Management and Safety Personnel. The Contractor shall cooperate with the airport in operational matters and during emergency response situations.

2. The Georgetown County Airport does not have an Airport Traffic Control Tower (ATCT). Aircraft pilots operating on the airfield must rely on NOTAMs, temporary markings, barricades, etc. to navigate safely around construction zones. This perspective should be considered when implementing closures.

3. The Contractor and Engineer will coordinate with Airport Management staff to disseminate taxi route information to all tenants/operators and hangar tenants.

Chapter 14 - RUNWAY AND TAXIWAY VISUAL AIDS

a. **General.** Runway and taxiway visual aids include marking, lighting, and signs. The runway and taxiway visual aids ensure that areas where aircraft will be operating are clearly and visibly separated from construction areas. Throughout the duration of the construction project, the Contractor shall verify that these areas remain clearly marked and visible at all times and that marking, lighting, signs, and visual aids remain in place and operational. For locations, see Sheet A1.2 and Sheet A1.3 in the Plans.

b. **Markings.** Markings must be in compliance with the standards of AC 150/5340-1K, Standards for Airport Markings.

   1) **Temporarily Closed Apron Areas.** Temporary closed apron areas and tie-downs will be marked with low-profile lighted barricades on the apron.

c. **Lighting and Visual Aids –** No lighting shall be disabled for this project.

d. **Signs.** Signs must be in conformance with AC 150/5345-44J, Specification for Runway and Taxiway Signs and AC 150/5340-18F, Standard for Airport Sign Systems.

Chapter 15 - MARKING AND SIGNS FOR ACCESS ROUTES

1. The contractor access routes are shown on Sheet A1.2 and Sheet A1.3 of the Plans. Access points and on-airport access routes shall be discussed at the pre-construction conference and at progress meetings to address construction needs and airport operational safety and security considerations. Access route physical conditions shall be regularly reviewed. The Contractor is expected to maintain the haul routes in safe, clean, orderly condition at all times. Many of the routes are also used for maintenance access, security checks and emergency response; these routes must be passable at all times and in all weather conditions.

2. The Contractor shall provide signs and markings for access routes on the airport as needed to control and guide the construction traffic. All signs and markings shall be coordinated with the RPR and airport staff and reviewed for aircraft safety, and security.

Chapter 16 - HAZARD MARKINGS AND LIGHTING

a. Purpose. The hazard marking and lighting prevents pilots from entering areas closed to aircraft, and prevents construction personnel from entering areas open to aircraft. Hazard marking and lighting shall also identify open manholes, small areas under repair, stockpiled material, waste areas, and areas subject to jet blast.

b. Equipment

1) **Lighted barricades.** Low profile aviation barricades shall be constructed of 12 inch white PVC pipe (cut in half), FAA approved product or other material approved by the Engineer that is 6 feet in length. Spacing shall be 6 feet apart or as directed by the Engineer. See detail on Sheet A1.3 of the Plans.

2) **Lights must be red.** A steady burning red light shall be centered on each lighted barricade and must meet the luminance requirements of the State Highway Department. Lights must be securely mounted on barricades and spaced at no more than 10 feet. Lights must be operated between sunset and sunrise and during periods of low visibility whenever the airport is open for operations.

3) **Air Operations Area - General.** Barricades are not permitted in any active safety area. Within runway or taxiway object free areas, steady burning red lights mounted on barricades marked with diagonal, alternating orange and white stripes as noted above, shall be provided to separate all construction/maintenance areas from the movement area. All barricades adjacent to any open runway or taxiway/taxilane safety area must be as low as possible to the ground, and no more than 18 inches high, exclusive of supplementary lights. Barricades must be of low mass; easily collapsible upon contact with an aircraft or any of its components; and weighted or sturdily attached to the surface to prevent displacement from prop wash, jet blast, wing vortex, or other surface wind currents. If affixed to the surface, they must be frangible at grade level or as low as possible, but not to exceed 3 inches above the ground.

4) **Air Operations Area - Runway/Taxiway Intersections.** Highly reflective barricades with lights will be placed outside of the runway safety area leading to active runway.

5) **Maintenance.** The Contractor must have a person on call 24 hours a day for emergency maintenance of airport hazard lighting and barricades. The Contractor must file the contact person's information with the airport operations. Lighting should be checked for proper operation at least once per day, preferably at dusk.

Chapter 17 - PROTECTION

All the affected safety and object free areas for the project are shown on Sheets A1.2 and Sheet A1.3 in the Plans. Dimensions, location and protection of the safety areas and areas of open facilities will be discussed at the pre-construction conference and progress meetings.

a. **Runway Safety Area (RSA).** Runway Safety Area will not be affected by this project.

b. **Runway Object Free Area (ROFA).** Runway Object Free Area will not be affected by this project.

c. **Taxiway Safety Area (TSA).** Taxiway Safety Areas will not be affected by this project.

d. **Taxiway & Taxilane Object Free Area (TOFA, TLOFA).** Unlike the Runway Object Free Area, aircraft wings regularly penetrate *(extend into)* the taxiway or taxilane object free area during normal operations. Thus the restrictions are more stringent. Barricades and cones will be used to segregate construction zones from areas open to aircraft. Construction activities within the TLOFA are subject to the following conditions:

   1) **No construction may occur within the existing TLOFA** while the taxilane is open for aircraft operations. The TLOFA dimensions may be temporarily adjusted.

   2) **The airport operator must coordinate** the adjustment of the TLOFA width as permitted above with the appropriate FAA Airports Regional or District Office and the FAA air traffic manager and issue a NOTAM.

   3) **Five-foot clearance** is maintained between equipment and materials and any part of an aircraft (includes wingtip overhang). In these situations, flaggers must be used to direct construction equipment, and wing walkers will be necessary to guide aircraft. Wing walkers should be airport personnel rather than construction workers.

e. **Obstacle Free Zone (OFZ).** All personnel, materials, and/or equipment may not penetrate the OFZ while the runway is open for aircraft operations.

f. **Runway Approach/Departure Surfaces.** No work is proposed in the runway approaches for this project. Therefore all personnel, materials, and/or equipment

shall remain clear of the applicable threshold siting surfaces, as defined in Appendix 2, "Threshold Siting Requirements," of AC 150/5300-13A.

Chapter 18 - OTHER LIMITATIONS ON CONSTRUCTION

a. Prohibitions

1) **No use of tall equipment.** If Contractor utilizes cranes, bucket trucks, concrete pumps or other equipment exceeding 25 feet in height, Contractor is responsible for filing a "Notice of proposed Construction" (7460) with FAA prior to erecting equipment. Contractor should allow at least 30 days for FAA review. Detailed instructions can be found on the FAA website: https://oeaaa.faa.gov/oeaaa/external/portal.jsp.

2) **No use of open flame welding or torches.**

3) **No use of electrical blasting caps** on or within 1,000 feet of the airport property.

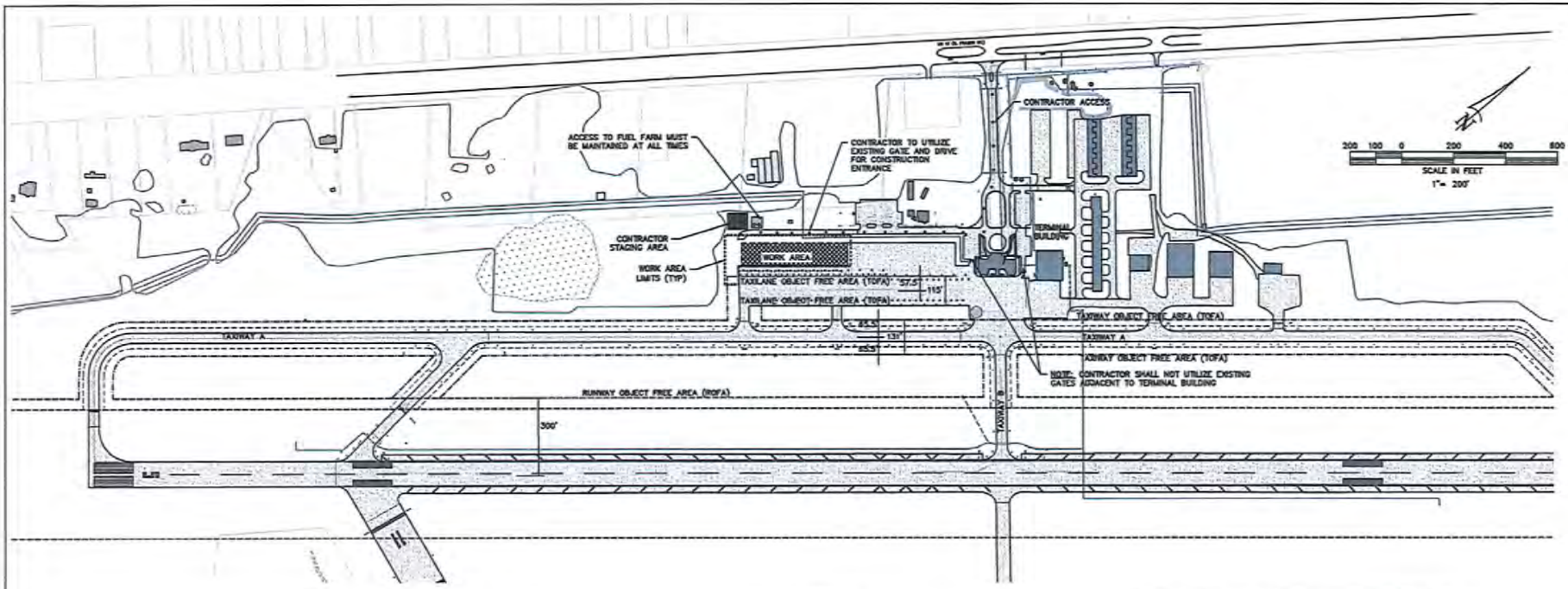
4) **No use of flare pots** within the AOA.

b. Restrictions

1) **Night time construction.** No restrictions for basic construction operations. Night time paving operations will not be allowed.

APPENDIX 'A'

Project Layout and Safety Plan (Sheet A1.2 and Sheet A1.3)



SAFETY PLAN REQUIREMENTS:

THE INTENT OF THIS PLAN IS TO ESTABLISH CERTAIN SAFETY REQUIREMENTS THAT MUST BE ADHERED TO BY THE CONTRACTOR DURING CONSTRUCTION OF THIS PROJECT. A SECTION THE APRON WILL BE CLOSED TO AIR TRAFFIC ON AN INTERMITTENT BASIS TO FACILITATE CONSTRUCTION DURING THIS PROJECT. TAXIWAY 'A' AND RUNWAY 5-23 SHALL REMAIN OPEN AT ALL TIMES. THE AIRPORT WILL REMAIN OPEN TO AIR TRAFFIC AT ALL TIMES. SEE SEQUENCE OF CONSTRUCTION ON SHEETS A1.3.

1. THE PROJECT AREA IS LOCATED WITHIN THE AIRCRAFT OPERATIONS AREA (AOA). THIS IS A CLOSELY MAINTAINED SECURITY AREA WITH RESTRICTED ACCESS. THE CONTRACTOR WILL BE REQUIRED TO MEET ALL REQUIREMENTS FOR ENTERING AND OPERATING IN THIS AREA AT ALL TIMES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH ALL REQUIREMENTS FOR ENTERING AND OPERATING IN THE AOA. FURTHER, IT WILL REMAIN THE CONTRACTOR'S RESPONSIBILITY TO KEEP HIMSELF ADVISED OF ANY CHANGES IN REQUIREMENTS, TO ADHERE TO CURRENT REGULATIONS. CONTRACTOR SHALL ALSO HAVE PERSONNEL TRAINED TO OPERATE AND MONITOR AIRPORT SECURITY GATES USED DURING THE PROJECT.
2. THE CONTRACTOR SHALL NOT BEGIN WORK UNLESS AND UNTIL 72 HOURS PRIOR NOTICE HAS BEEN GIVEN TO THE ENGINEER AND AIRPORT MANAGEMENT. CROSSING OF RUNWAYS OR TAXIWAYS IS ALLOWED ONLY IF THE RUNWAY OR TAXIWAY IS CLOSED. CONTRACTOR IS PROHIBITED FROM ENTERING THE RUNWAY 5-23 SAFETY AREA AT ANY TIME UNLESS THE RUNWAY IS CLOSED. SEE GENERAL NOTE 1.
3. IN AN EMERGENCY SITUATION THE CONTRACTOR SHALL CALL 911 AND NOTIFY THE AIRPORT MANAGEMENT IMMEDIATELY. THE AIRPORT CAN BE REACHED BY PHONE AT 843-545-3638.
4. SEE GENERAL NOTE 4 FOR AIRPORT ENTRY AND DEPARTURE PROCEDURES AND FOR VEHICLE MARKING REQUIREMENTS.
5. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL DESIGNATE A REPRESENTATIVE AND ALTERNATE TO CONTACT ON A 24 HOUR BASIS SHOULD PROBLEMS ARISE. THE CONTRACTOR SHALL PROVIDE A CONTACT LIST FOR ALL SUPERVISORY PERSONNEL AND ALL SUBCONTRACTORS.
6. A DAILY START-UP AND SHUT-DOWN CHECKLIST WILL BE JOINTLY PREPARED BY THE CONTRACTOR AND AIRPORT MANAGEMENT. THE CHECKLIST WILL BE FOLLOWED THROUGHOUT THE PROJECT. THIS CHECKLIST SHALL INCLUDE, BUT NOT BE LIMITED TO BARRICADES, FLAGS, MARKINGS, ROUTES, SECURING OF ACCESS GATES, CLEAN UP, ETC. THE CONTRACTOR'S SITE SUPERVISOR AND LABOR CREW SHALL NOT LEAVE THE WORK SITE UNTIL SUCH TIME AS THE AIRPORT HAS INSPECTED THE AREA AND SIGNED OFF ON THE DAILY CHECKLIST.
7. UNDERGROUND UTILITIES ARE KNOWN TO BE LOCATED IN THE PROJECT AREAS. EXISTING UNDERGROUND UTILITIES INCLUDING BUT NOT LIMITED TO AIRFIELD LIGHTING AND MARKER POWER AND CONTROL CABLES AND OTHER UTILITIES MAY BE IN THE PATH OF CONSTRUCTION. LOCATIONS OF UTILITIES IF SHOWN ON THE PLANS ARE APPROXIMATE ONLY. ALL UTILITIES AND FACILITIES ARE NOT NECESSARILY INDICATED ON PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT EXISTING UTILITIES AND FACILITIES FROM DAMAGE. SEE PROJECT SPECIAL PROVISIONS. THE CONTRACTOR SHALL COORDINATE WITH AIRPORT MANAGEMENT WHEN WORKING IN AREAS CONTAINING AIRFIELD LIGHTING OR MARKER CABLE.

CONTACTS ARE:
AIRPORT — MR. RICK WEISFALL — 843-545-3638

FOR ADDITIONAL REQUIREMENTS RELATED TO PROTECTION OF EXISTING UTILITIES, INCLUDING CABLES, CONTROLS, AND MARKERS SEE PROJECT SPECIAL PROVISIONS.

8. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS IN REGARD TO CONSTRUCTION NOISE AND EROSION CONTROL DURING CONSTRUCTION.
9. THE CONTRACTOR SHALL CLEAN ALL CONSTRUCTION AREAS OF LITTER, LOOSE PAPERS, DEBRIS, ETC. ON A DAILY BASIS, OR AS DIRECTED BY THE ENGINEER. PRIOR TO THE CLOSE OF DAILY OPERATIONS, CONTRACTOR SHALL INSPECT ALL ACTIVE AIR OPERATIONS AREAS AND CONSTRUCTION AREA FOR FOD AND LITTER. ALL DEBRIS SHALL BE CLEANED UP AND PROPERLY DISPOSED OF PRIOR TO RELEASE OF CREWS FROM EACH SHIFT.
10. MEN, EQUIPMENT OR OTHER CONSTRUCTION-RELATED MATERIAL ARE NOT ALLOWED WITHIN THE RUNWAY OBJECT FREE AREA (ROFA) OF AN OPEN RUNWAY AT ANY TIME UNLESS THE RUNWAY IS CLOSED. OR THE TAXIWAY OBJECT FREE AREA (TOFA) UNLESS THE SECTION OF TAXIWAY IS CLOSED (SEE GENERAL NOTE 1). MEN, EQUIPMENT OR OTHER CONSTRUCTION-RELATED MATERIAL WILL NOT BE PERMITTED CLOSER THAN 150 FEET FROM THE EDGE OF THE RUNWAY OR 50 FEET FROM THE EDGE OF ANY TAXIWAY WITHOUT PRIOR PERMISSION FROM THE AIRPORT MANAGEMENT.
11. DURING CONSTRUCTION, ADJACENT TAXIWAYS AND RUNWAY WILL BE OPEN TO AIRCRAFT UNLESS OTHERWISE NOTED. AIRCRAFT HAVE THE RIGHT OF WAY AT ALL TIMES. CONTRACTOR SHALL BE AWARE OF THE AIRCRAFT MOVEMENTS AND THE JETBLAST AND/OR PROP-WASH ASSOCIATED WITH THESE AIRCRAFT. THE CONTRACTOR SHALL SECURE LOOSE ITEMS AT ALL TIMES AND SHALL LOCATE STOCKPILES OF MATERIALS OR EQUIPMENT AWAY FROM AIRCRAFT OPERATION AREAS.
12. INSPECTION — FREQUENT INSPECTIONS WILL BE MADE BY AIRPORT MANAGEMENT DURING CRITICAL PHASES OF THE WORK TO ENSURE THAT THE CONTRACTOR IS FOLLOWING THE RECOMMENDED AIRFIELD SAFETY PROCEDURES.
13. EXCAVATIONS — CONTRACTOR MUST PROMINENTLY MARK OPEN TRENCHES AND EXCAVATIONS AT THE CONSTRUCTION SITE WITH RED OR ORANGE FLAGS, AS APPROVED BY THE AIRPORT, AND BACKFILL OR LIGHT THEM WITH RED LIGHTS DURING HOURS OF RESTRICTED VISIBILITY OR DARKNESS. OPEN TRENCHES OR EXCAVATIONS ARE NOT PERMITTED WITHIN 200 FEET OF THE RUNWAY CENTERLINE WHILE THE RUNWAY IS OPEN. IF THE RUNWAY MUST BE OPENED BEFORE EXCAVATIONS ARE BACKFILLED, COVER OR BACKFILL THE EXCAVATIONS APPROPRIATELY. CONDITIONS FOR OPEN TRENCHES OR EXCAVATIONS MUST BE OF SUFFICIENT STRENGTH TO SUPPORT THE WEIGHT OF THE HEAVIEST AIRCRAFT OPERATING ON THE RUNWAY.
14. ALL AIRFIELD LIGHTING AND LIGHTED SIGNS OUTSIDE AREAS CLOSED FOR CONSTRUCTION SHALL BE KEPT OPERATIONAL THROUGHOUT THE DURATION OF THE PROJECT.
15. NO WORK OR CONSTRUCTION ACTIVITY IS ALLOWED WITHIN THE RUNWAY OBJECT FREE AREA OF AN ACTIVE RUNWAY OR TAXIWAY OBJECT FREE AREA OF AN ACTIVE TAXIWAY. ANY WORK WITHIN AN ACTIVE RUNWAY OBJECT FREE AREA WILL REQUIRE CLOSURE OF THE RUNWAY. NO WORK OR CONSTRUCTION ACTIVITY IS ALLOWED WITHIN THE TAXIWAY OBJECT FREE AREA. ANY WORK WITHIN A ACTIVE TAXIWAY OBJECT FREE AREA WILL REQUIRE CLOSURE OF THE EFFECTED SECTION OF TAXIWAY. PULLBACKS FOR MEN AND EQUIPMENT WITHIN THE RUNWAY OBJECT FREE AREA WILL NOT BE ALLOWED (SEE GENERAL NOTE 1).

GENERAL NOTES:

1. IT IS THE INTENT OF THE OWNER THAT THE GEORGETOWN COUNTY AIRPORT WILL REMAIN OPEN TO AIR TRAFFIC AT ALL TIMES. RUNWAY 5-23 OR TAXIWAY 'A' SHALL NOT BE CLOSED. CONTRACTOR SHALL PROVIDE A MINIMUM 7 BUSINESS DAYS NOTICE TO AIRPORT MANAGEMENT AND ENGINEER PRIOR TO THE PROPOSED APRON AREA CLOSURE DATE. PRIOR TO REOPENING THE APRON, CONTRACTOR MUST REMOVE BARRICADES AND PERFORM A WALK THROUGH OF THE CONSTRUCTION AREA WITH AIRPORT MANAGEMENT, THE RESIDENT PROJECT REPRESENTATIVE, AND ENGINEER TO CONFIRM THAT THE APRON AND SAFETY AREAS ARE FREE OF FOD OR OTHER HAZARDS.
2. PRIOR TO LEAVING WORK EACH DAY, CONTRACTOR SHALL RETURN HIS EQUIPMENT AND MATERIALS TO THE STAGING AREA IDENTIFIED ON THE PLANS.
3. ALL CONTRACTOR PERSONNEL, INCLUDING BUT NOT LIMITED TO, GENERAL LABORERS, SUBCONTRACTORS, DRIVERS, AND SURVEYORS WORKING WITHIN ACTIVE AIR OPERATIONS AREAS MUST AT ALL TIMES REMAIN WITHIN VISUAL AND VOICE RANGE OF CONTRACTOR'S SUPERVISORY PERSONNEL. FOR THE PURPOSES OF THIS PROJECT, THE AIR OPERATIONS AREA (AOA) REFERS TO ALL AREAS WITHIN THE AIRPORT SECURITY FENCE.
4. PRIOR TO ENTERING THE SECURED AOA OF THE AIRPORT EACH DAY, THE CONTRACTOR SHALL CHECK IN WITH THE AIRPORT, CLOSE COORDINATION FOR ACCESS TO WORK AREAS AND SCHEDULES BETWEEN THE CONTRACTOR, OTHER CONTRACTORS WORKING IN THE PROJECT AREA, AND AIRPORT WILL BE REQUIRED THROUGHOUT THE PROJECT.

   THE CONTRACTOR SHALL COORDINATE ESCORTED-ESCORT REQUIREMENTS WITH THE AIRPORT MANAGEMENT AND RESIDENT PROJECT REPRESENTATIVE. ALL OPEN GATES TO SECURED AIRPORT AREAS SHALL BE MONITORED CONTINUOUSLY BY CONTRACTOR'S PERSONNEL TO CONTROL ACCESS TO SECURED AREA OR SHALL BE CLOSED AND LOCKED. CONTRACTOR PERSONNEL SHALL NOT ALLOW ANY UNAUTHORIZED PERSONNEL TO ENTER THROUGH THE CONSTRUCTION GATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING AND LOCKING ALL GATES WHEN NOT IN USE AND AT THE END OF EACH DAY'S OPERATIONS. CONTRACTOR SHALL INTERLOCK AT PADLOCKED GATES. CONTRACTOR SHALL PROVIDE A COPY OF ALL GATE KEYS TO THE AIRPORT AND ERR. CONTRACTOR SHALL PROVIDE A LIST OF ALL KEY HOLDERS WHICH SHALL BE KEPT UPDATED THROUGHOUT THE PROJECT.

   ALL CONSTRUCTION VEHICLES MUST BE CLEARED FOR ACCESS BY THE AIRPORT MANAGEMENT AND RESIDENT PROJECT REPRESENTATIVE. PERSONAL CARS SHALL BE PARKED IN STAGING AREA. ALL VEHICLES OPERATING IN THE AOA SHALL BE LIGHTED OR FLAGGED IN ACCORDANCE WITH FAA ADVISORY CIRCULAR 150/5370-2D. COPIES OF THE ADVISORY CIRCULAR WILL BE MADE AVAILABLE UPON REQUEST.
5. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ASSURE THAT SUCH OPERATIONS DO NOT IMPEDE ACCESS TO ANY AREA OF THE AIRFIELD AT ANY TIME FOR THE AIRCRAFT RESCUE AND FIRE FIGHTING (ARFF) VEHICLES AND OTHER EMERGENCY VEHICLES. EMERGENCY VEHICLE ACCESS SHALL BE A STANDING AGENDA ITEM FOR ALL PROGRESS MEETINGS. THE CONTRACTOR SHALL COOPERATE FULLY AND IMMEDIATELY WITH ANY DIRECTIVES ISSUED BY AIRPORT MANAGEMENT RELATIVE TO EMERGENCY ACCESS.
6. ACCESS ROADS TO BE USED UNDER THIS CONTRACT SHALL BE THOSE DESIGNATED AND APPROVED BY THE ENGINEER IN GENERAL. THE CONTRACTOR SHALL CONFINE HIS EQUIPMENT AND HAULING WHERE PRACTICAL TO EXISTING ROADS ON THE AIRPORT. IF EXISTING PAVEMENT OR ROAD SURFACE IS DAMAGED BY THE CONTRACTOR'S HAULING OPERATIONS, IT SHALL BE REPAIRED TO ITS ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE. HAUL ROADS ACROSS TURFED AREAS SHALL BE REPAIRED, SCARIFIED, SEEDED, MULCHED, AND FERTILIZED AT THE CONTRACTOR'S EXPENSE. METAL TRACK VEHICLES SHALL NOT BE PERMITTED TO OPERATE ON OR ACROSS EXISTING PAVEMENT WITHOUT PROTECTIVE MATTING TO PREVENT MARRING OF THE PAVEMENT SURFACE. ACCESS ROADS SHALL BE CONSTRUCTED BY CONTRACTOR AS REQUIRED. ALL COSTS ASSOCIATED WITH SURFACING, CONSTRUCTING, MAINTAINING AND RESTORING TEMPORARY HAUL AND ACCESS ROADS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "MOBILIZATION"
7. ALL EXISTING FACILITIES WILL BE CAREFULLY PROTECTED BY THE CONTRACTOR. ANY FACILITIES DAMAGED BY THE CONTRACTOR WILL BE REPAIRED IMMEDIATELY AND RESTORED TO ORIGINAL CONDITION AT CONTRACTOR'S COST.
8. CONTRACTOR WILL BY WATERING, CHEMICALS, VEGETATION, OR OTHER MEANS, PREVENT THE OCCURRENCE OF DUST WHICH WILL BE OBJECTIONABLE TO THE RESIDENTS OF THE AREA OR VIOLATE EXISTING LAWS OR REGULATION OR CAUSE HAZARDS TO AIR TRAFFIC.
9. CONTRACTOR MAY ENCOUNTER WET CONDITIONS DURING CONSTRUCTION. ALL COST FOR REMEDYING IS CONSIDERED INCIDENTAL TO COST OF ITEMS OF WORK BID UPON.
10. SEE PROJECT SPECIAL PROVISIONS FOR PROTECTION OF UTILITIES.

CONSTRUCTION CONTRACTOR'S RESPONSIBILITIES:

1. CONTRACTOR SHALL HAVE AVAILABLE A COPY OF THE CONSTRUCTION SAFETY AND PHASING PLAN (CSPP) AND PROJECT AIRPORT SAFETY PLAN ON SITE AT ALL TIMES. SEE APPENDIX 'C' OF THE SPECIFICATIONS.
2. CONTRACTOR SHALL COMPLY WITH THE AIRPORT SAFETY PLAN ASSOCIATED WITH THE CONSTRUCTION PROJECT AND ENSURE THAT CONSTRUCTION PERSONNEL ARE FAMILIAR WITH SAFETY PROCEDURES AND REGULATIONS ON THE AIRPORT.
3. CONTRACTOR SHALL PROVIDE A POINT OF CONTACT WHO WILL COORDINATE AN IMMEDIATE RESPONSE TO CORRECT ANY CONSTRUCTION-RELATED ACTIVITY THAT MAY ADVERSELY AFFECT THE OPERATIONAL SAFETY OF THE AIRPORT.
4. CONTRACTOR SHALL PROVIDE A SAFETY/CONSTRUCTION INSPECTOR FAMILIAR WITH AIRPORT SAFETY TO MONITOR CONSTRUCTION ACTIVITIES.
5. CONTRACTOR SHALL RESTRICT MOVEMENT OF CONSTRUCTION VEHICLES TO CONSTRUCTION AREAS BY FLAGGING AND BARRICADING, ERECTING TEMPORARY FENCING, OR PROVIDING FLAGMEN OR ESCORTS AS APPROPRIATE.
6. CONTRACTOR SHALL ENSURE THAT NO CONSTRUCTION EMPLOYEES, EMPLOYEES OF SUBCONTRACTORS OR SUPPLIERS, OR OTHER PERSONS ENTER ANY PART OF THE ACTIVE AIR OPERATIONS AREAS (AOA) FROM THE CONSTRUCTION SITE UNLESS AUTHORIZED.

NOTAMS (NOTICE TO AIRMEN):

THE AIRPORT MANAGEMENT WILL ISSUE THE NECESSARY NOTAMS TO REFLECT HAZARDOUS CONDITIONS. IT IS IMPORTANT THAT NOTAMS BE KEPT CURRENT AND REFLECT THE ACTUAL CONDITIONS WITH RESPECT TO CONSTRUCTION SITUATIONS. ACTIVE NOTAMS SHALL BE REVIEWED PERIODICALLY AND REVISED TO REFLECT THE CURRENT CONDITIONS.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION — TALBERT & BRIGHT, INC. — No. C00286

TALBERT & BRIGHT
ENGINEERING & PLANNING CONSULTANTS
MANNING, SC 29102
#28 BYPASS EAST
PHONE 803-435-4261
EMAIL: TBMANNING@AOL.COM
SC LICENSE NO. C00286

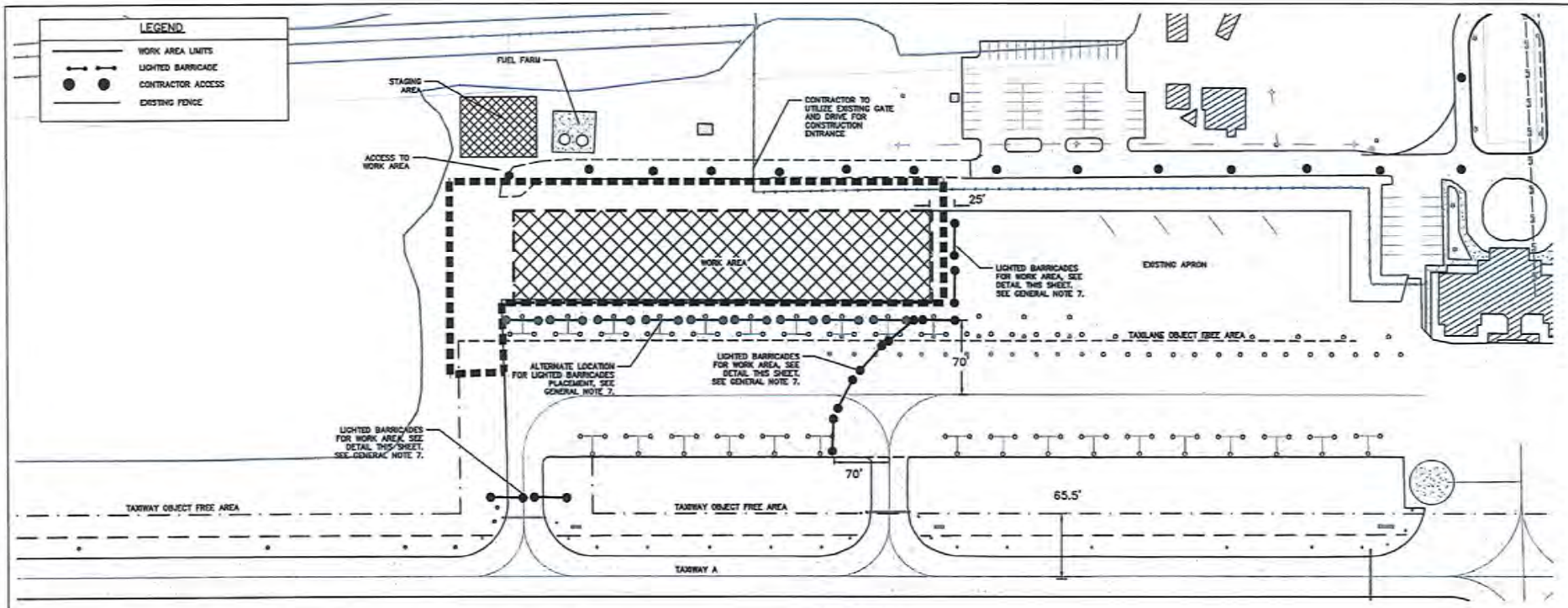
REV. NO.	DESCRIPTION	DATE
	REVISIONS	

GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA
APRON EXPANSION (PHASE IV)

PROJECT LAYOUT AND SAFETY PLAN

SOUTH CAROLINA — REGISTERED PROFESSIONAL ENGINEER — No. 22775 — 5/4/12 — ALAN M. SMITH

Date	JANUARY 2012
Scale	1" = 200'
Drawn	BPC/JDL
Checked	AMS
Project No.	2820-1202
Sheet No.	A1.2



THE SEQUENCE OF CONSTRUCTION FOR THIS PROJECT WILL FOLLOW TYPICAL PATTERN FOR PROJECTS OF THIS TYPE, INCLUDING ESTABLISHMENT OF STAGING AREA AND STOCKPILE AREA, INSTALLATION OF APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES, GRADING, PAVING, MARKING, AND SEEDING AND MULCHING.

THE FOLLOWING SEQUENCE OF CONSTRUCTION HAS BEEN DEVELOPED TO HELP THE CONTRACTOR UNDERSTAND THE OPERATIONAL NEEDS OF THE AIRPORT AND HELP ENSURE MINIMAL CLOSURE TIME TO THE APRON AREA. IN ACCORDANCE WITH THE SPECIFICATIONS THE CONTRACTOR SHALL PROVIDE A DETAILED SCHEDULE OF CONSTRUCTION TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. CONTRACTOR HAS 60 CALENDAR DAYS TO COMPLETE ALL WORK.

PRIOR TO BEGINNING PROJECT AND CONTRACT START TIME

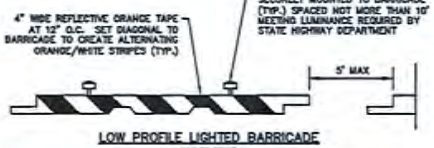
1. DEVELOP DETAILED SCHEDULE TO ENSURE CONSTRUCTION CAN BE COMPLETED FOR ALL WORK WITHIN CONSTRUCTION TIME ALLOTTED FOR THE PROJECT.
2. CONTRACTOR MAY COMPLETE REQUIRED SURVEY WORK ON PROJECT AREA PRIOR TO CONSTRUCTION START TIME. SCHEDULING FOR THE SURVEY WORK WILL BE REQUIRED TO BE APPROVED BY AIRPORT MANAGEMENT. SEE PROJECT SPECIAL PROVISIONS.

WORK AREA

1. MOBILIZE EQUIPMENT AND DEVELOP ACCESS ROAD AS REQUIRED. ESTABLISH STAGING AREA. THE LOCATION OF THE STAGING AREA SHALL BE COORDINATED WITH THE AIRPORT MANAGEMENT.
2. INSTALL LIGHTED BARRICADES AT LOCATIONS SHOWN. CONTRACTOR WILL BE WORKING ADJACENT TO ACTIVE APRON OPERATIONS AREAS AND SHALL UTILIZE CAUTION AS REQUIRED BY THE SAFETY PLAN.
3. INSTALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES.
4. COMPLETE EXCAVATION AND GRADING OPERATIONS AND FINE GRADING APRON SUBGRADE. COMPACT SUBGRADE AS REQUIRED.
5. COMPLETE PLACEMENT, GRADING, AND COMPACTION OF AGGREGATE BASE COURSE.
6. APPLY BITUMINOUS PRIME COAT IN ACCORDANCE WITH SPECIFICATIONS.
7. COMPLETE PAVING OPERATIONS ON THE APRON. PAVEMENT SHALL BE PLACED IN TWO LIFTS INCLUDING 2.5" LIFT (P-401 BITUMINOUS SURFACE COURSE) AND ONE 1.5" LIFT (P-601 FUEL RESISTANT BITUMINOUS SURFACE COURSE).
8. COMPLETE PLACEMENT OF SHOULDER FILL, COMPACT AND FINE GRADE SHOULDERS IN ACCORDANCE WITH DETAILS SHOWN ON THE PLANS.
9. COMPLETE THE FIRST APPLICATION OF PAVEMENT MARKING ON THE APRON. MARKING SHALL BE INSTALLED WITHOUT BEADS.
10. COMPLETE INSTALLATION OF SOD ALONG THE EDGE OF PAVEMENT AND SEEDING AND MULCHING OPERATIONS AS REQUIRED. RESTORE ALL DISTURBED AREAS AND SEED AND MULCH ALL AREAS AS REQUIRED.
11. REMOVE SILT FENCE ALONG PAVEMENT EDGE. GRADE, SEED, AND MULCH AS REQUIRED.
12. REMOVE ALL EQUIPMENT, MATERIALS, AND DEBRIS.
13. REMOVE LIGHTED BARRICADES AND RE-OPEN APRON TO AIR OPERATIONS.
14. AFTER SPECIFIED WAITING PERIOD, COMPLETE FINAL PAVEMENT MARKING APPLICATION WITH BEADS. CONTRACTOR WILL BE REQUIRED TO CLOSE SECTIONS OF THE APRON DURING MARKING APPLICATION. PLACE LIGHTED BARRICADES AS REQUIRED FOR CLOSING OF APRON AREA AS REQUIRED. REMOVE BARRICADES AFTER MARKING OPERATIONS ARE COMPLETED AND RE-OPEN APRON.

GENERAL NOTES:

1. SAFETY REQUIREMENTS AND LIGHTED BARRICADES SHOWN ARE TO BE UTILIZED DURING CONSTRUCTION. LIGHTED BARRICADES SHALL BE INSTALLED, REMOVED, OR RELOCATED AS REQUIRED FOR COMPLIANCE WITH SAFETY PLAN AND PHASING PLANS.
2. DURING WORK OPERATIONS IN PROJECT AREA, TAXIWAY "A" AND NORTHERN APRON AREA SHALL REMAIN OPEN. CONSTRUCTION PERSONNEL AND VEHICLES SHALL NOT ENTER ACTIVE AIR OPERATIONS AREAS WITHOUT PRIOR APPROVAL OF AIRPORT MANAGEMENT.
3. CONTRACTOR ACCESS TO WORK AREA WILL BE ALONG CONTRACTOR ACCESS ROAD AND THE SOUTHWEST END OF THE APRON. TAXIWAY "A" SHALL REMAIN AN ACTIVE AIR OPERATIONS AREA THROUGHOUT THE DURATION OF CONSTRUCTION. AIRCRAFT TRAFFIC SHALL HAVE THE RIGHT OF WAY AT ALL TIMES.
4. TAXILANE ACROSS NORTHERN APRON TO REMAIN OPEN AT ALL TIMES, AS SHOWN. THE NORTHERN PORTION OF THE APRON SHALL REMAIN OPEN AND BE UTILIZED FOR THE PARKING OF AIRCRAFT. CONTRACTOR SHALL UTILIZE EXTREME CAUTION WHEN CROSSING APRON AND APRON TAXILANE. AIRCRAFT SHALL HAVE THE RIGHT OF WAY AT ALL TIMES.
5. SEE SAFETY PLAN REQUIREMENTS, SHEET A1.2, AND PROJECT SPECIAL PROVISIONS FOR OTHER SAFETY RELATED ITEMS.
6. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN A POWER BROOM ON SITE AT ALL TIMES FOR CLEANUP OF SPILLAGE. THE CONTRACTOR SHALL CLOSELY MONITOR ADJACENT ACTIVE AIR OPERATION AREAS FOR SPILLAGE AND/OR DEBRIS. ALL SPILLAGE AND/OR DEBRIS SHALL BE IMMEDIATELY CLEANED UP AND REMOVED FROM THE AIR OPERATIONS AREA.
7. THE CONTRACTOR SHALL INSTALL LIGHTED BARRICADES AS SHOWN. FOR WEEKENDS WHEN CONTRACTOR IS NOT WORKING OR AS REQUESTED BY AIRPORT, THE CONTRACTOR SHALL RELOCATE LIGHTED BARRICADES TO ALTERNATE LOCATION TO OPEN APRON CONNECTOR TAXIWAY AND TO ALLOW AIRCRAFT PARKING ON SOUTHERN EDGE OF APRON. RELOCATION OF THE LIGHTED BARRICADES SHALL BE COORDINATED WITH RPR AND AIRPORT. LIGHTED BARRICADES SHALL BE RETURNED TO ORIGINAL LOCATION WHEN CONTRACTOR IS WORKING OR AS DIRECTED.



LOW PROFILE LIGHTED BARRICADE

NOT TO SCALE

AVIATION BARRICADE NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AVIATION BARRICADES IN SUFFICIENT QUANTITIES TO COMPLETE THE WORK FOR THIS CONTRACT.
2. LOW PROFILE LIGHTED BARRICADES SHALL BE MULTI-BARRIER AIRPORT RUNWAY BARRICADE ARTOKOS AND SOLAR LIGHTS SHALL BE PROVIDED FOR THE BARRICADES AS MANUFACTURED BY OFF THE WALL PRODUCTS, LLC. OR APPROVED EQUAL. THE CONTRACTOR SHALL PROVIDE WATER NECESSARY TO FILL THE BARRICADES AND ENSURE ADEQUATE WATER HAS BEEN PROVIDED TO ANCHOR THE BARRICADES IN PLACE.
3. CONTRACTOR SHALL CHECK LIGHTS DAILY TO VERIFY THAT THEY ARE IN WORKING CONDITION AND SHALL REPLACE LIGHTS AS REQUIRED.
4. CONTRACTOR SHALL INSTALL BARRICADES AT LOCATIONS SHOWN ON INDIVIDUAL PLAN SHEETS. BARRICADES SHALL BE MOVED AND RELOCATED AS REQUIRED. BARRICADES SHALL BE INSTALLED WITH MAXIMUM 5' SPACE BETWEEN BARRICADE AND CONTRACTOR SHALL LEAVE ONE 15' SPACE FOR EMERGENCY VEHICLES. PROVIDE HOLD DOWN AND LATERAL SUPPORT TO PREVENT OVERTURNING FROM PROP WASH AND JET BLAST.

TALBERT & BRIGHT
ENGINEERING & PLANNING CONSULTANTS
4410 SHELLEY DRIVE
FAX: 910-791-4241
SC LICENSE NO. C00394
EMAIL: TBBURTBRIGHT.COM

REVISIONS

REV. NO.	DESCRIPTION	DATE

GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA
APRON EXPANSION (PHASE IV)
PHASING PLAN

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 9170 ALAN M. SMITH 3/9/18

Date	JANUARY 2018
Scale	1" = 50'
Drawn	BPE/JDL
Checked	AMS
Project No.	2001-1702
Sheet No.	A1.3

GEORGETOWN COUNTY AIRPORT

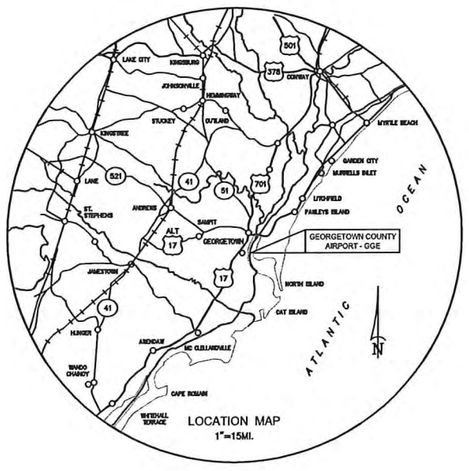
GEORGETOWN, SOUTH CAROLINA

CONSTRUCTION DRAWINGS FOR

APRON EXPANSION (PHASE IV)

AIP NO. 3-45-0024-019

BID NO. 18-040



LOCATION MAP

PLAN	TITLE OF DRAWING	DATE
A1.1	COVER SHEET	JANUARY 2018
A1.2	PROJECT LAYOUT AND SAFETY PLAN	JANUARY 2018
A1.3	PHASING PLAN	JANUARY 2018
S1.1	SURVEY LAYOUT PLAN	JANUARY 2018
EX1.1	EXISTING CONDITIONS AND REMOVAL PLAN	JANUARY 2018
G1.1	GRADING AND PAVING PLAN	JANUARY 2018
D1.1	TYPICAL SECTIONS AND PAVING DETAILS	JANUARY 2018
EC1.1	SEDIMENTATION AND EROSION CONTROL PLAN	JANUARY 2018
EC1.2	EROSION CONTROL NOTES AND DETAILS	JANUARY 2018
EC1.3	EROSION CONTROL DETAILS	JANUARY 2018
M1.1	MARKING PLAN AND MISCELLANEOUS DETAILS	JANUARY 2018
X1.1	CROSS SECTIONS	JANUARY 2018

TALBERT & BRIGHT
ENGINEERING & PLANNING CONSULTANTS
4810 SHELLEY DRIVE WILMINGTON, NC 28405
FAX: 910-792-6281 PHONE: 910-763-5350
SC LICENSE NO. C00386 EMAIL: TBILLMOTBILLM.COM

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

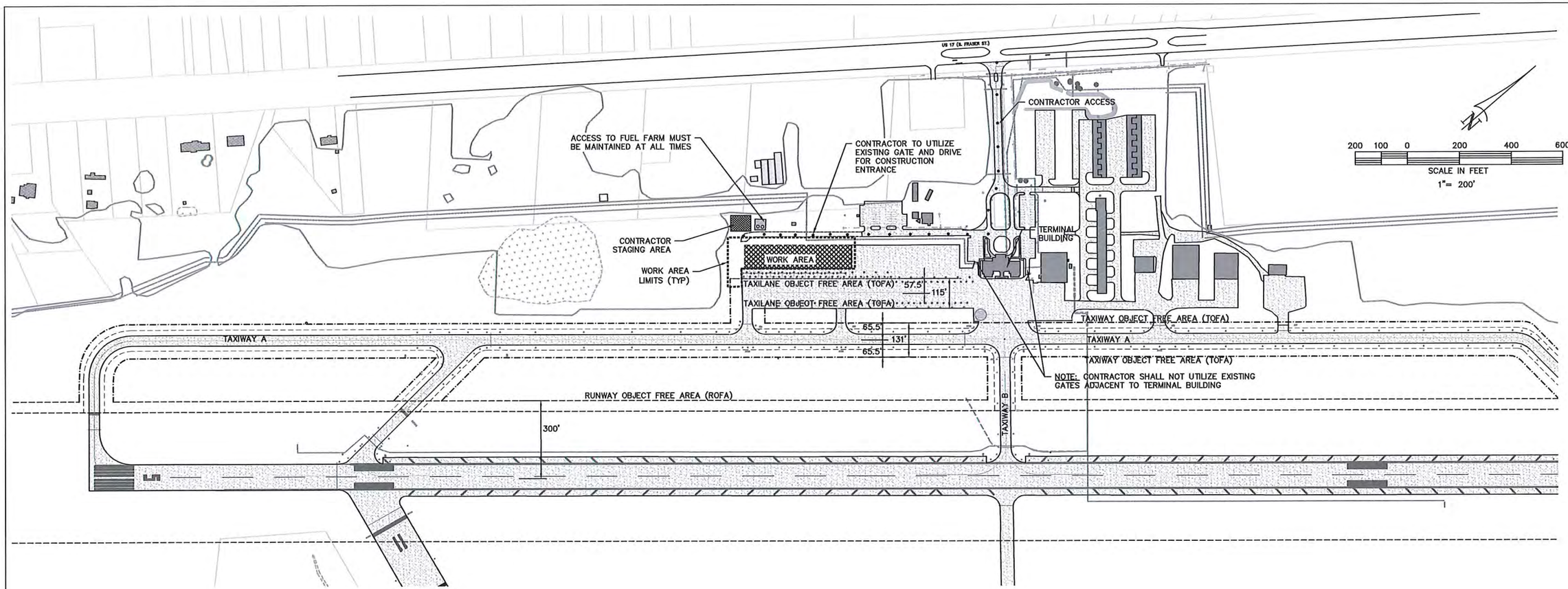
GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA
APRON EXPANSION (PHASE IV)

COVER SHEET

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 9779 3/9/18 ALAN M. SMITH

SOUTH CAROLINA TALBERT & BRIGHT, INC. No. C00386 CERTIFICATE OF AUTHORIZATION

Date	JANUARY 2018
Scale	NONE
Drawn	JDL
Checked	AMS
Project No.	2601-1702
Sheet No.	A1.1



SAFETY PLAN REQUIREMENTS

THE INTENT OF THIS PLAN IS TO ESTABLISH CERTAIN SAFETY REQUIREMENTS THAT MUST BE ADHERED TO BY THE CONTRACTOR DURING CONSTRUCTION OF THIS PROJECT. A SECTION THE APRON WILL BE CLOSED TO AIR TRAFFIC ON AN INTERMITTENT BASIS TO FACILITATE CONSTRUCTION DURING THIS PROJECT. TAXIWAY 'A' AND RUNWAY 5–23 SHALL REMAIN OPEN AT ALL TIMES. THE AIRPORT WILL REMAIN OPEN TO AIR TRAFFIC AT ALL TIMES. SEE SEQUENCE OF CONSTRUCTION ON SHEETS A1.3.

1. THE PROJECT AREA IS LOCATED WITHIN THE AIRCRAFT OPERATIONS AREA (AOA). THIS IS A CLOSELY MAINTAINED SECURITY AREA WITH RESTRICTED ACCESS. THE CONTRACTOR WILL BE REQUIRED TO MEET ALL REQUIREMENTS FOR ENTERING AND OPERATING IN THIS AREA AT ALL TIMES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH ALL REQUIREMENTS FOR ENTERING AND OPERATING IN THE AOA. FURTHER, IT WILL REMAIN THE CONTRACTOR'S RESPONSIBILITY TO KEEP HIMSELF ADVISED OF ANY CHANGES IN REQUIREMENTS, TO ADHERE TO CURRENT REGULATIONS. CONTRACTOR SHALL ALSO HAVE PERSONNEL TRAINED TO OPERATE AND MONITOR AIRPORT SECURITY GATES USED DURING THE PROJECT.
2. THE CONTRACTOR SHALL NOT BEGIN WORK UNLESS AND UNTIL 72 HOURS PRIOR NOTICE HAS BEEN GIVEN TO THE ENGINEER AND AIRPORT MANAGEMENT. CROSSING OF RUNWAYS OR TAXIWAYS IS ALLOWED ONLY IF THE RUNWAY OR TAXIWAY IS CLOSED. CONTRACTOR IS PROHIBITED FROM ENTERING THE RUNWAY 5–23 SAFETY AREA AT ANY TIME UNLESS THE RUNWAY IS CLOSED. SEE GENERAL NOTE 1.
3. IN AN EMERGENCY SITUATION THE CONTRACTOR SHALL CALL 911 AND NOTIFY THE AIRPORT MANAGEMENT IMMEDIATELY. THE AIRPORT CAN BE REACHED BY PHONE AT 843–545–3638.
4. SEE GENERAL NOTE 4 FOR AIRPORT ENTRY AND DEPARTURE PROCEDURES AND FOR VEHICLE MARKING REQUIREMENTS.
5. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL DESIGNATE A REPRESENTATIVE AND ALTERNATE TO CONTACT ON A 24 HOUR BASIS SHOULD PROBLEMS ARISE. THE CONTRACTOR SHALL PROVIDE A CONTACT LIST FOR ALL SUPERVISORY PERSONNEL AND ALL SUBCONTRACTORS.
6. A DAILY START–UP AND SHUT–DOWN CHECKLIST WILL BE JOINTLY PREPARED BY THE CONTRACTOR AND AIRPORT MANAGEMENT. THE CHECKLIST WILL BE FOLLOWED THROUGHOUT THE PROJECT. THIS CHECKLIST SHALL INCLUDE, BUT NOT BE LIMITED TO BARRICADES, FLAGS, HAUL ROUTES, SECURING OF ACCESS GATES, CLEAN UP, ETC. THE CONTRACTOR'S SITE SUPERVISOR AND LABOR CREW SHALL NOT LEAVE THE WORK SITE UNTIL SUCH TIME AS THE AIRPORT HAS INSPECTED THE AREA AND SIGNED OFF ON THE DAILY CHECKLIST.
7. UNDERGROUND UTILITIES ARE KNOWN TO BE LOCATED IN THE PROJECT AREAS. EXISTING UNDERGROUND UTILITIES INCLUDING BUT NOT LIMITED TO AIRFIELD LIGHTING AND NAVAID POWER AND CONTROL CABLES AND OTHER UTILITIES MAY BE IN THE PATH OF CONSTRUCTION. LOCATIONS OF UTILITIES IF SHOWN ON THE PLANS ARE APPROXIMATE ONLY. ALL UTILITIES AND FACILITIES ARE NOT NECESSARILY INDICATED ON PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT EXISTING UTILITIES AND FACILITIES FROM DAMAGE. SEE PROJECT SPECIAL PROVISIONS. THE CONTRACTOR SHALL COORDINATE WITH AIRPORT MANAGEMENT WHEN WORKING IN AREAS CONTAINING AIRFIELD LIGHTING OR NAVAID CABLE.

   CONTACTS ARE:
   AIRPORT MR. RICK WESTFALL 843–545–3638

   FOR ADDITIONAL REQUIREMENTS RELATED TO PROTECTION OF EXISTING UTILITIES, INCLUDING CABLES, CONTROLS, AND NAVAIDS SEE PROJECT SPECIAL PROVISIONS.
8. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS IN REGARD TO CONSTRUCTION NOISE AND EROSION CONTROL DURING CONSTRUCTION.
9. THE CONTRACTOR SHALL CLEAN ALL CONSTRUCTION AREAS OF LITTER, LOOSE PAPERS, DEBRIS, ETC. ON A DAILY BASIS, OR AS DIRECTED BY THE ENGINEER. PRIOR TO THE CLOSE OF DAILY OPERATIONS, CONTRACTOR SHALL INSPECT ALL ACTIVE AIR OPERATIONS AREAS AND CONSTRUCTION AREA FOR FOD AND LITTER. ALL DEBRIS SHALL BE CLEANED UP AND PROPERLY DISPOSED OF PRIOR TO RELEASE OF CREWS FROM EACH SHIFT.
10. MEN, EQUIPMENT OR OTHER CONSTRUCTION–RELATED MATERIAL ARE NOT ALLOWED WITHIN THE RUNWAY OBJECT FREE AREA (ROFA) OF AN OPEN RUNWAY AT ANY TIME UNLESS THE RUNWAY IS CLOSED OR THE TAXIWAY OBJECT FREE AREA (TOFA) UNLESS THE SECTION OF TAXIWAY IS CLOSED (SEE GENERAL NOTE 1). MEN, EQUIPMENT OR OTHER CONSTRUCTION–RELATED MATERIAL WILL NOT BE PERMITTED CLOSER THAN 150 FEET FROM THE EDGE OF THE RUNWAY OR 50 FEET FROM THE EDGE OF ANY TAXIWAY WITHOUT PRIOR PERMISSION FROM THE AIRPORT MANAGEMENT.
11. DURING CONSTRUCTION, ADJACENT TAXIWAYS AND RUNWAY WILL BE OPEN TO AIRCRAFT UNLESS OTHERWISE NOTED. AIRCRAFT HAVE THE RIGHT OF WAY AT ALL TIMES. CONTRACTOR SHALL BE AWARE OF THE AIRCRAFT MOVEMENTS AND THE JETBLAST AND/OR PROP–WASH ASSOCIATED WITH THESE AIRCRAFT. THE CONTRACTOR SHALL SECURE LOOSE ITEMS AT ALL TIMES AND SHALL LOCATE STOCKPILES OF MATERIALS OR EQUIPMENT AWAY FROM AIRCRAFT OPERATION AREAS.
12. INSPECTION – FREQUENT INSPECTIONS WILL BE MADE BY AIRPORT MANAGEMENT DURING CRITICAL PHASES OF THE WORK TO ENSURE THAT THE CONTRACTOR IS FOLLOWING THE RECOMMENDED AIRFIELD SAFETY PROCEDURES.
13. EXCAVATIONS – CONTRACTOR MUST PROMINENTLY MARK OPEN TRENCHES AND EXCAVATIONS AT THE CONSTRUCTION SITE WITH RED OR ORANGE FLAGS, AS APPROVED BY THE AIRPORT, AND BACKFILL OR LIGHT THEM WITH RED LIGHTS DURING HOURS OF RESTRICTED VISIBILITY OR DARKNESS. OPEN TRENCHES OR EXCAVATIONS ARE NOT PERMITTED WITHIN 200 FEET OF THE RUNWAY CENTERLINE WHILE THE RUNWAY IS OPEN. IF THE RUNWAY MUST BE OPENED BEFORE EXCAVATIONS ARE BACKFILLED, COVER OR BACKFILL THE EXCAVATIONS APPROPRIATELY. COVERINGS FOR OPEN TRENCHES OR EXCAVATIONS MUST BE OF SUFFICIENT STRENGTH TO SUPPORT THE WEIGHT OF THE HEAVIEST AIRCRAFT OPERATING ON THE RUNWAY.
14. ALL AIRFIELD LIGHTING AND LIGHTED SIGNS OUTSIDE AREAS CLOSED FOR CONSTRUCTION SHALL BE KEPT OPERATIONAL THROUGHOUT THE DURATION OF THE PROJECT.
15. NO WORK OR CONSTRUCTION ACTIVITY IS ALLOWED WITHIN THE RUNWAY OBJECT FREE AREA OF AN ACTIVE RUNWAY OR TAXIWAY OBJECT FREE AREA OF AN ACTIVE TAXIWAY. ANY WORK WITHIN AN ACTIVE RUNWAY OBJECT FREE AREA WILL REQUIRE CLOSURE OF THE RUNWAY. NO WORK OR CONSTRUCTION ACTIVITY IS ALLOWED WITHIN THE TAXIWAY OBJECT FREE AREA. ANY WORK WITHIN A ACTIVE TAXIWAY OBJECT FREE AREA WILL REQUIRE CLOSURE OF THE EFFECTED SECTION OF TAXIWAY. PULLBACKS FOR MEN AND EQUIPMENT WITHIN THE RUNWAY OBJECT FREE AREA WILL NOT BE ALLOWED (SEE GENERAL NOTE 1).

GENERAL NOTES:

1. IT IS THE INTENT OF THE OWNER THAT THE GEORGETOWN COUNTY AIRPORT WILL REMAIN OPEN TO AIR TRAFFIC AT ALL TIMES. RUNWAY 5–23 OR TAXIWAY 'A' SHALL NOT BE CLOSED. CONTRACTOR SHALL PROVIDE A MINIMUM 7 BUSINESS DAYS NOTICE TO AIRPORT MANAGEMENT AND ENGINEER PRIOR TO THE PROPOSED APRON AREA CLOSURE DATE. PRIOR TO REOPENING THE APRON, CONTRACTOR MUST REMOVE BARRICADES AND PERFORM A WALK THROUGH OF THE CONSTRUCTION AREA WITH AIRPORT MANAGEMENT, THE RESIDENT PROJECT REPRESENTATIVE, AND ENGINEER TO CONFIRM THAT THE APRON AND SAFETY AREAS ARE FREE OF FOD OR OTHER HAZARDS.
2. PRIOR TO LEAVING WORK EACH DAY, CONTRACTOR SHALL RETURN HIS EQUIPMENT AND MATERIALS TO THE STAGING AREA IDENTIFIED ON THE PLANS.
3. ALL CONTRACTOR PERSONNEL, INCLUDING BUT NOT LIMITED TO, GENERAL LABORERS, SUBCONTRACTORS, DRIVERS, AND JOURNEYMEN WORKING WITHIN ACTIVE AIR OPERATIONS AREAS MUST AT ALL TIMES REMAIN WITHIN VISUAL AND VOICE RANGE OF CONTRACTOR SUPERVISORY PERSONNEL. FOR THE PURPOSES OF THIS PROJECT, THE AIR OPERATIONS AREA (AOA) REFERS TO ALL AREAS WITHIN THE AIRPORT SECURITY FENCE.
4. PRIOR TO ENTERING THE SECURED AOA OF THE AIRPORT EACH DAY, THE CONTRACTOR SHALL CHECK IN WITH THE AIRPORT. CLOSE COORDINATION FOR ACCESS TO WORK AREAS AND SCHEDULES BETWEEN THE CONTRACTOR, OTHER CONTRACTORS WORKING IN THE PROJECT AREA, AND AIRPORT WILL BE REQUIRED THROUGHOUT THE PROJECT.

   THE CONTRACTOR SHALL COORDINATE INGRESS–EGRESS REQUIREMENTS WITH THE AIRPORT MANAGEMENT AND RESIDENT PROJECT REPRESENTATIVE. ALL OPEN GATES TO SECURED AIRPORT AREAS SHALL BE MONITORED CONTINUOUSLY BY CONTRACTOR'S PERSONNEL TO CONTROL ACCESS TO SECURED AREA OR SHALL BE CLOSED AND LOCKED. CONTRACTOR PERSONNEL SHALL NOT ALLOW ANY UNAUTHORIZED PERSONNEL TO ENTER THROUGH THE CONSTRUCTION GATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING AND LOCKING ALL GATES WHEN NOT IN USE AND AT THE END OF EACH DAY'S OPERATIONS. CONTRACTOR SHALL INTERLOCK AT PADLOCKED GATES. CONTRACTOR SHALL PROVIDE A COPY OF ALL GATE KEYS TO THE AIRPORT AND RPR. CONTRACTOR SHALL PROVIDE A LIST OF ALL KEY HOLDERS WHICH SHALL BE KEPT UPDATED THROUGHOUT THE PROJECT.

   ALL CONSTRUCTION VEHICLES MUST BE CLEARED FOR ACCESS BY THE AIRPORT MANAGEMENT AND RESIDENT PROJECT REPRESENTATIVE. PERSONAL CARS SHALL BE PARKED IN STAGING AREA. ALL VEHICLES OPERATING IN THE AOA SHALL BE LIGHTED OR FLAGGED IN ACCORDANCE WITH FAA ADVISORY CIRCULAR 150/5370–2G. COPIES OF THE ADVISORY CIRCULAR WILL BE MADE AVAILABLE UPON REQUEST.
5. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ASSURE THAT SUCH OPERATIONS DO NOT IMPEDE ACCESS TO ANY AREA OF THE AIRFIELD AT ANY TIME FOR THE AIRCRAFT RESCUE AND FIRE FIGHTING (ARFF) VEHICLES AND OTHER EMERGENCY VEHICLES. EMERGENCY VEHICLE ACCESS SHALL BE A STANDING AGENDA ITEM FOR ALL PROGRESS MEETINGS. THE CONTRACTOR SHALL COOPERATE FULLY AND IMMEDIATELY WITH ANY DIRECTIVES ISSUED BY AIRPORT MANAGEMENT RELATIVE TO EMERGENCY ACCESS.
6. ACCESS ROADS TO BE USED UNDER THIS CONTRACT SHALL BE THOSE DESIGNATED AND APPROVED BY THE ENGINEER. IN GENERAL, THE CONTRACTOR SHALL CONFINE HIS EQUIPMENT AND HAULING WHERE PRACTICAL TO EXISTING ROADS ON THE AIRPORT. IF EXISTING PAVEMENT OR ROAD SURFACE IS DAMAGED BY THE CONTRACTOR'S HAULING OPERATIONS, IT SHALL BE REPAIRED TO ITS ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE. HAUL ROADS ACROSS TURFED AREAS SHALL BE REPAIRED, SCARIFIED, SEEDED, MULCHED, AND FERTILIZED AT THE CONTRACTOR'S EXPENSE. METAL TRACK VEHICLES WILL NOT BE PERMITTED TO OPERATE ON OR ACROSS EXISTING PAVEMENT WITHOUT PROTECTIVE MATTING TO PREVENT MARRING OF THE PAVEMENT SURFACE. ACCESS ROADS SHALL BE CONSTRUCTED BY CONTRACTOR AS REQUIRED. ALL COSTS ASSOCIATED WITH SUPPLYING, CONSTRUCTING, MAINTAINING AND RESTORING TEMPORARY HAUL AND ACCESS ROADS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "MOBILIZATION"
7. ALL EXISTING FACILITIES WILL BE CAREFULLY PROTECTED BY THE CONTRACTOR. ANY FACILITIES DAMAGED BY THE CONTRACTOR WILL BE REPAIRED IMMEDIATELY AND RESTORED TO ORIGINAL CONDITION AT CONTRACTOR'S COST.
8. CONTRACTOR WILL, BY WATERING, CHEMICALS, VEGETATION, OR OTHER MEANS, PREVENT THE OCCURRENCE OF DUST WHICH WILL BE OBJECTIONABLE TO THE RESIDENTS OF THE AREA OR VIOLATE EXISTING LAWS OR REGULATION OR CAUSE HAZARDS TO AIR TRAFFIC.
9. CONTRACTOR MAY ENCOUNTER WET CONDITIONS DURING CONSTRUCTION. ALL COST FOR DEWATERING IS CONSIDERED INCIDENTAL TO COST OF ITEMS OF WORK BID UPON.
10. SEE PROJECT SPECIAL PROVISIONS FOR PROTECTION OF UTILITIES.

NOTAMS (NOTICE TO AIRMEN)

THE AIRPORT MANAGEMENT WILL ISSUE THE NECESSARY NOTAMS TO REFLECT HAZARDOUS CONDITIONS. IT IS IMPORTANT THAT NOTAMS BE KEPT CURRENT AND REFLECT THE ACTUAL CONDITIONS WITH RESPECT TO CONSTRUCTION SITUATIONS. ACTIVE NOTAMS SHALL BE REVIEWED PERIODICALLY AND REVISED TO REFLECT THE CURRENT CONDITIONS.

CONSTRUCTION CONTRACTOR'S RESPONSIBILITIES

1. CONTRACTOR SHALL HAVE AVAILABLE A COPY OF THE CONSTRUCTION SAFETY AND PHASING PLAN (CSPP) AND PROJECT AIRPORT SAFETY PLAN ON SITE AT ALL TIMES. SEE APPENDIX 'G' OF THE SPECIFICATIONS.
2. CONTRACTOR SHALL COMPLY WITH THE AIRPORT SAFETY PLAN ASSOCIATED WITH THE CONSTRUCTION PROJECT AND ENSURE THAT CONSTRUCTION PERSONNEL ARE FAMILIAR WITH SAFETY PROCEDURES AND REGULATIONS ON THE AIRPORT.
3. CONTRACTOR SHALL PROVIDE A POINT OF CONTACT WHO WILL COORDINATE AN IMMEDIATE RESPONSE TO CORRECT ANY CONSTRUCTION–RELATED ACTIVITY THAT MAY ADVERSELY AFFECT THE OPERATIONAL SAFETY OF THE AIRPORT.
4. CONTRACTOR SHALL PROVIDE A SAFETY/CONSTRUCTION INSPECTOR FAMILIAR WITH AIRPORT SAFETY TO MONITOR CONSTRUCTION ACTIVITIES.
5. CONTRACTOR SHALL RESTRICT MOVEMENT OF CONSTRUCTION VEHICLES TO CONSTRUCTION AREAS BY FLAGGING AND BARRICADING, ERECTING TEMPORARY FENCING, OR PROVIDING FLAGMEN OR ESCORTS AS APPROPRIATE.
6. CONTRACTOR SHALL ENSURE THAT NO CONSTRUCTION EMPLOYEES, EMPLOYEES OF SUBCONTRACTORS OR SUPPLIERS, OR OTHER PERSONS ENTER ANY PART OF THE ACTIVE AIR OPERATIONS AREAS (AOA) FROM THE CONSTRUCTION SITE UNLESS AUTHORIZED.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION TALBERT & BRIGHT, INC. No. C00386

TALBERT & BRIGHT
ENGINEERING & PLANNING CONSULTANTS
4810 SHELLEY DRIVE WILMINGTON, NC 28405
FAX: 910-762-6281 PHONE: 910-763-5350
SC LICENSE NO. C00386 EMAIL: TBWILM@TBWILM.COM

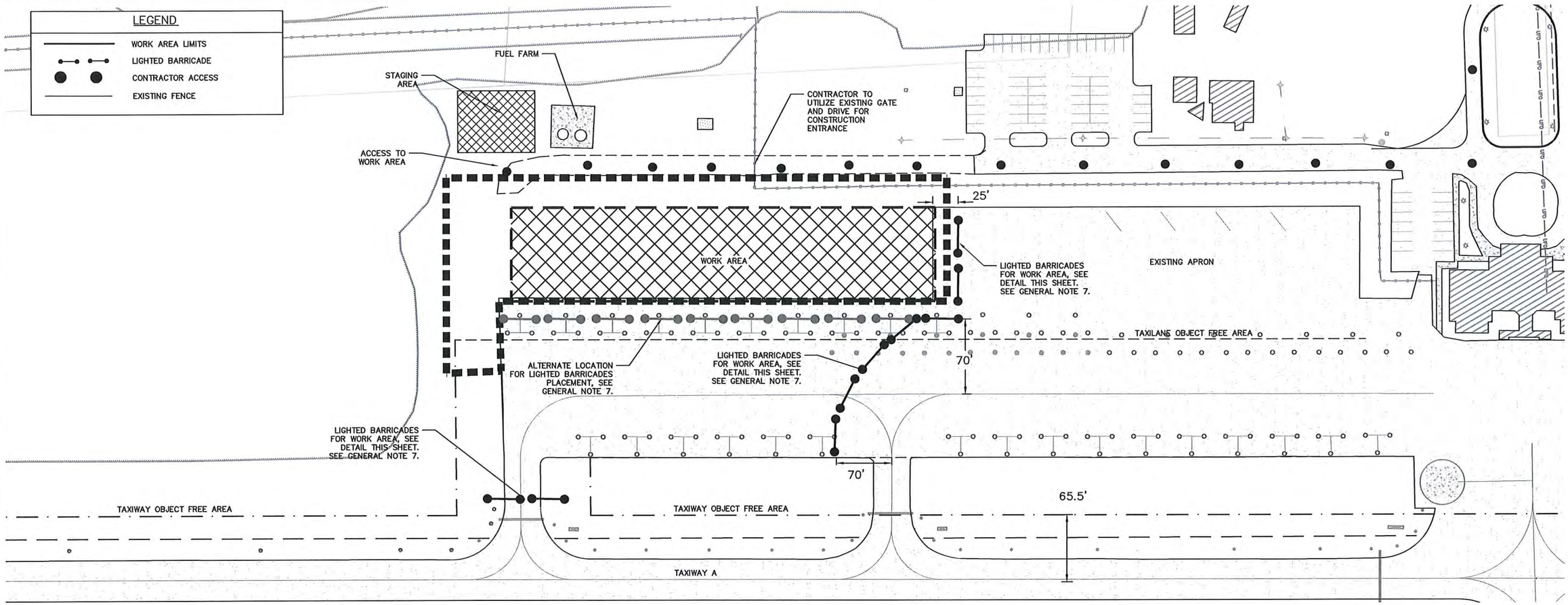
REV. NO.	DESCRIPTION	DATE
	REVISIONS	

GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA
APRON EXPANSION (PHASE IV)

PROJECT LAYOUT AND SAFETY PLAN

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 9779 5/9/18 ALAN M. SMITH

Date	JANUARY 2018
Scale	1" = 200'
Drawn	BPE/JDL
Checked	AMS
Project No.	2601–1702
Sheet No.	A1.2



THE SEQUENCE OF CONSTRUCTION FOR THIS PROJECT WILL FOLLOW TYPICAL PATTERN FOR PROJECTS OF THIS TYPE, INCLUDING ESTABLISHMENT OF STAGING AREA AND STOCKPILE AREA, INSTALLATION OF APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES, GRADING, PAVING, MARKING, AND SEEDING AND MULCHING.

THE FOLLOWING SEQUENCE OF CONSTRUCTION HAS BEEN DEVELOPED TO HELP THE CONTRACTOR UNDERSTAND THE OPERATIONAL NEEDS OF THE AIRPORT AND HELP ENSURE MINIMAL CLOSURE TIME TO THE APRON AREA. IN ACCORDANCE WITH THE SPECIFICATIONS THE CONTRACTOR SHALL PROVIDE A DETAILED SCHEDULE OF CONSTRUCTION TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. CONTRACTOR HAS 60 CALENDAR DAYS TO COMPLETE ALL WORK.

PRIOR TO BEGINNING PROJECT AND CONTRACT START TIME

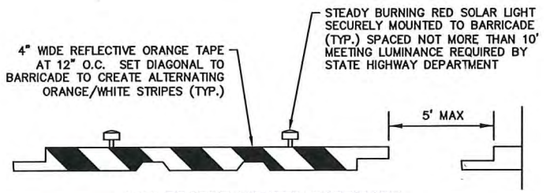
1. DEVELOP DETAILED SCHEDULE TO ENSURE CONSTRUCTION CAN BE COMPLETED FOR ALL WORK WITHIN CONSTRUCTION TIME ALLOTTED FOR THE PROJECT.
2. CONTRACTOR MAY COMPLETE REQUIRED SURVEY WORK ON PROJECT AREA PRIOR TO CONSTRUCTION START TIME. SCHEDULING FOR THE SURVEY WORK WILL BE REQUIRED TO BE APPROVED BY AIRPORT MANAGEMENT. SEE PROJECT SPECIAL PROVISIONS.

WORK AREA

1. MOBILIZE EQUIPMENT AND DEVELOP ACCESS ROAD AS REQUIRED. ESTABLISH STAGING AREA. THE LOCATION OF THE STAGING AREA SHALL BE COORDINATED WITH THE AIRPORT MANAGEMENT.
2. INSTALL LIGHTED BARRICADES AT LOCATIONS SHOWN. CONTRACTOR WILL BE WORKING ADJACENT TO ACTIVE APRON OPERATIONS AREAS AND SHALL UTILIZE CAUTION AS REQUIRED BY THE SAFETY PLAN.
3. INSTALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES.
4. COMPLETE EXCAVATION AND GRADING OPERATIONS AND FINE GRADING APRON SUBGRADE. COMPACT SUBGRADE AS REQUIRED.
5. COMPLETE PLACEMENT, GRADING, AND COMPACTION OF AGGREGATE BASE COURSE.
6. APPLY BITUMINOUS PRIME COAT IN ACCORDANCE WITH SPECIFICATIONS.
7. COMPLETE PAVING OPERATIONS ON THE APRON. PAVEMENT SHALL BE PLACED IN TWO LIFTS INCLUDING 2.5" LIFT (P-401 BITUMINOUS SURFACE COURSE) AND ONE 1.5" LIFT (P-601 FUEL RESISTANT BITUMINOUS SURFACE COURSE).
8. COMPLETE PLACEMENT OF SHOULDER FILL, COMPACT AND FINE GRADE SHOULDERS IN ACCORDANCE WITH DETAILS SHOWN ON THE PLANS.
9. COMPLETE THE FIRST APPLICATION OF PAVEMENT MARKING ON THE APRON. MARKING SHALL BE INSTALLED WITHOUT BEADS.
10. COMPLETE INSTALLATION OF SOD ALONG THE EDGE OF PAVEMENT AND SEEDING AND MULCHING OPERATIONS AS REQUIRED. RESTORE ALL DISTURBED AREAS AND SEED AND MULCH ALL AREAS AS REQUIRED.
11. REMOVE SILT FENCE ALONG PAVEMENT EDGE. GRADE, SEED, AND MULCH AS REQUIRED.
12. REMOVE ALL EQUIPMENT, MATERIALS, AND DEBRIS.
13. REMOVE LIGHTED BARRICADES AND RE-OPEN APRON TO AIR OPERATIONS.
14. AFTER SPECIFIED WAITING PERIOD, COMPLETE FINAL PAVEMENT MARKING APPLICATION WITH BEADS. CONTRACTOR WILL BE REQUIRED TO CLOSE SECTIONS OF THE APRON DURING MARKING APPLICATION. PLACE LIGHTED BARRICADES AS REQUIRED FOR CLOSING OF APRON AREA AS REQUIRED. REMOVE BARRICADES AFTER MARKING OPERATIONS ARE COMPLETED AND RE-OPEN APRON.

GENERAL NOTES:

1. SAFETY REQUIREMENTS AND LIGHTED BARRICADES SHOWN ARE TO BE UTILIZED DURING CONSTRUCTION. LIGHTED BARRICADES SHALL BE INSTALLED, REMOVED, OR RELOCATED AS REQUIRED FOR COMPLIANCE WITH SAFETY PLAN AND PHASING PLANS.
2. DURING WORK OPERATIONS IN PROJECT AREA, TAXIWAY "A" AND NORTHERN APRON AREA SHALL REMAIN OPEN. CONSTRUCTION PERSONNEL AND VEHICLES SHALL NOT ENTER ACTIVE AIR OPERATIONS AREAS WITHOUT PRIOR APPROVAL OF AIRPORT MANAGEMENT.
3. CONTRACTOR ACCESS TO WORK AREA WILL BE ALONG CONTRACTOR ACCESS ROAD AND THE SOUTHWEST END OF THE APRON. TAXIWAY "A" SHALL REMAIN AN ACTIVE AIR OPERATIONS AREA THROUGHOUT THE DURATION OF CONSTRUCTION. AIRCRAFT TRAFFIC SHALL HAVE THE RIGHT OF WAY AT ALL TIMES.
4. TAXILANE ACROSS NORTHERN APRON TO REMAIN OPEN AT ALL TIMES, AS SHOWN. THE NORTHERN PORTION OF THE APRON SHALL REMAIN OPEN AND BE UTILIZED FOR THE PARKING OF AIRCRAFT. CONTRACTOR SHALL UTILIZE EXTREME CAUTION WHEN CROSSING APRON AND APRON TAXILANE. AIRCRAFT SHALL HAVE THE RIGHT OF WAY AT ALL TIMES.
5. SEE SAFETY PLAN REQUIREMENTS, SHEET A1.2, AND PROJECT SPECIAL PROVISIONS FOR OTHER SAFETY RELATED ITEMS.
6. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN A POWER BROOM ON SITE AT ALL TIMES FOR CLEANUP OF SPILLAGE. THE CONTRACTOR SHALL CLOSELY MONITOR ADJACENT ACTIVE AIR OPERATION AREAS FOR SPILLAGE AND/OR DEBRIS. ALL SPILLAGE AND/OR DEBRIS SHALL BE IMMEDIATELY CLEANED UP AND REMOVED FROM THE AIR OPERATIONS AREA.
7. THE CONTRACTOR SHALL INSTALL LIGHTED BARRICADES AS SHOWN. FOR WEEKENDS WHEN CONTRACTOR IS NOT WORKING OR AS REQUESTED BY AIRPORT, THE CONTRACTOR SHALL RELOCATE LIGHTED BARRICADES TO ALTERNATE LOCATION TO OPEN APRON CONNECTOR TAXIWAY AND TO ALLOW AIRCRAFT PARKING ON SOUTHERN EDGE OF APRON. RELOCATION OF THE LIGHTED BARRICADES SHALL BE COORDINATED WITH RPR AND AIRPORT. LIGHTED BARRICADES SHALL BE RETURNED TO ORIGINAL LOCATION WHEN CONTRACTOR IS WORKING OR AS DIRECTED.

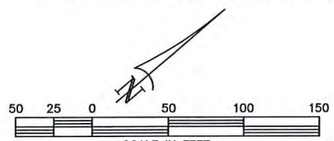


LOW PROFILE LIGHTED BARRICADE

NOT TO SCALE

AVIATION BARRICADE NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AVIATION BARRICADES IN SUFFICIENT QUANTITIES TO COMPLETE THE WORK FOR THIS CONTRACT.
2. LOW PROFILE LIGHTED BARRICADES SHALL BE MULTI-BARRIER AIRPORT RUNWAY BARRICADE AR10X96 AND SOLAR LIGHTS SHALL BE PROVIDED FOR THE BARRICADES AS MANUFACTURED BY OFF THE WALL PRODUCTS, LLC. OR APPROVED EQUAL. THE CONTRACTOR SHALL PROVIDE WATER NECESSARY TO FILL THE BARRICADES AND ENSURE ADEQUATE WATER HAS BEEN PROVIDED TO ANCHOR THE BARRICADES IN PLACE.
3. CONTRACTOR SHALL CHECK LIGHTS DAILY TO VERIFY THAT THEY ARE IN WORKING CONDITION AND SHALL REPLACE LIGHTS AS REQUIRED.
4. CONTRACTOR SHALL INSTALL BARRICADES AT LOCATIONS SHOWN ON INDIVIDUAL PLAN SHEETS. BARRICADES SHALL BE MOVED AND RELOCATED AS REQUIRED. BARRICADES SHALL BE INSTALLED WITH MAXIMUM 5' SPACE BETWEEN BARRICADE AND CONTRACTOR SHALL LEAVE ONE 15' SPACE FOR EMERGENCY VEHICLES. PROVIDE HOLD DOWN AND LATERAL SUPPORT TO PREVENT OVERTURNING FROM PROP WASH AND JET BLAST.



SOUTH CAROLINA TALBERT & BRIGHT, INC. No. C00386 CERTIFICATE OF AUTHORIZATION

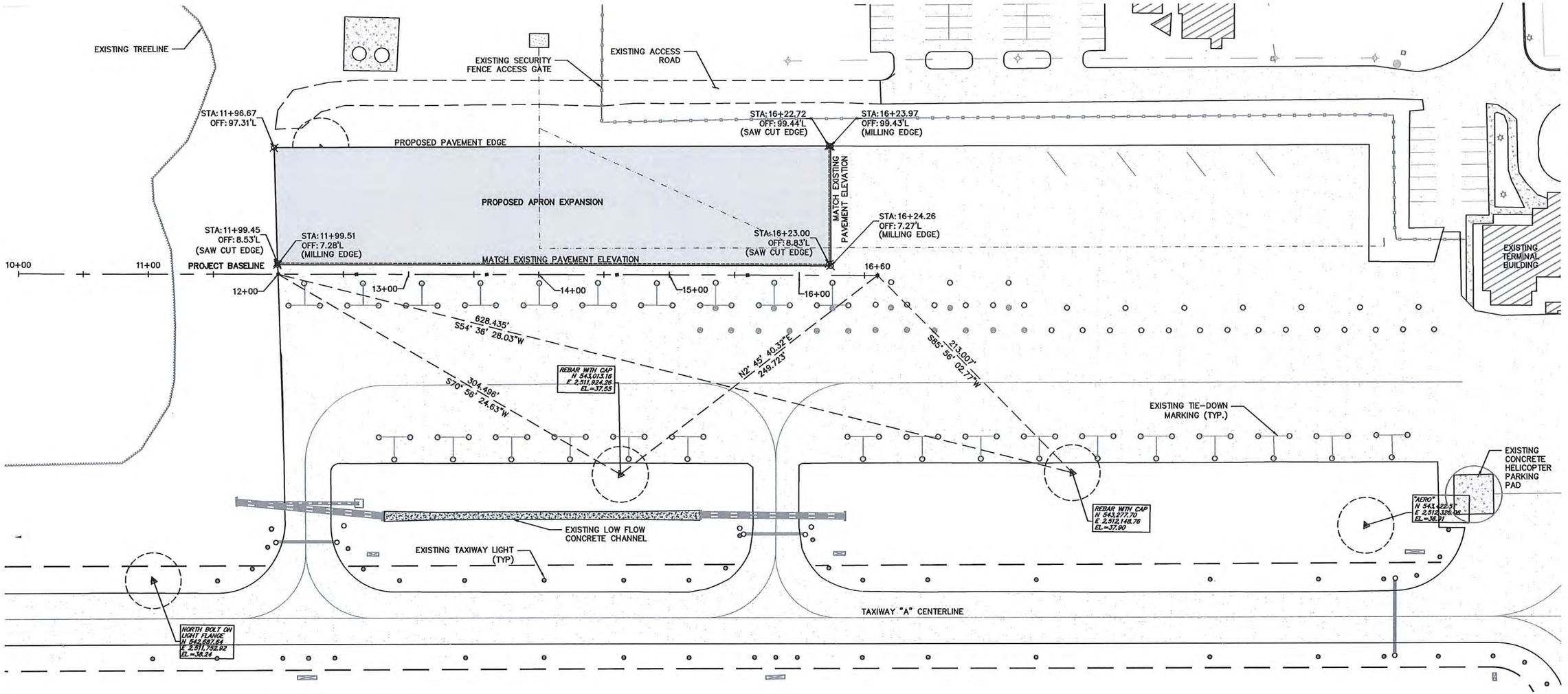
TALBERT & BRIGHT
ENGINEERING & PLANNING CONSULTANTS
4810 SHELLEY DRIVE WILMINGTON, NC 28405
FAX: 910-792-0281 PHONE: 910-763-5350
SC LICENSE NO. C00386 EMAIL: TBWLM@TBWLM.COM

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA
APRON EXPANSION (PHASE IV)
PHASING PLAN

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 9779 3/1/18 ALAN M. SMITH

Date	JANUARY 2018
Scale	1" = 50'
Drawn	BPE/JDL
Checked	AMS
Project No.	2601-1702
Sheet No.	A1.3



GENERAL NOTES:

1. PROJECT BASE MAPPING AND CONTROL FROM CUNNINGHAM LAND SURVEYING, LLC SURVEY DATED OCTOBER 24, 2017.
2. THIS PROPERTY IS LOCATED IN FLOOD ZONE X, PER F.I.R.M. COMMUNITY PANEL 450085 0379 D, REVISED MARCH 16, 1989.

HORIZONTAL AND VERTICAL CONTROL NOTES

1. CONTRACTOR SHALL USE SOUTH CAROLINA GEODETIC SURVEY MONUMENT 'USC & GS AERO AS MK 3' AS PRIMARY CONTROL POINT FOR THE PROJECT.
2. ALL BEARINGS AND COORDINATES SHOWN HEREON ARE BASED ON SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM 1983.
3. ELEVATIONS SHOWN HEREON BASED ON VERTICAL DATUM NAVD '88.
4. COORDINATE VALUES ARE SC GRID LOCALIZED ABOUT SCGS MONUMENT "USC & GS AERO AS MK 3". THE COMBINED FACTOR IS 0.99981317.
5. ALL DISTANCES ARE HORIZONTAL GROUND IN U.S. SURVEY FEET UNLESS OTHERWISE SHOWN.

LAYOUT PLAN NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING VERTICAL AND HORIZONTAL CONTROL FOR THE PROJECT. BENCHMARKS AND CONTROL POINTS ARE AS SHOWN ON THIS SHEET. CONTRACTOR SHALL PROVIDE ADDITIONAL TEMPORARY BENCH MARKS FOR CONTROL OF CONSTRUCTION ACTIVITIES IF REQUIRED. CONTRACTOR SHALL COMPLETE NECESSARY LEVEL LOOPS TO VERIFY ACCURACY OF INSTALLED BENCH MARKS.
2. FOR SEQUENCE OF CONSTRUCTION, SEE SHEETS A1.3.

40 20 0 40 80 120
SCALE IN FEET
1"= 40'

LEGEND

- EXISTING CONCRETE PAVEMENT
- EXISTING BITUMINOUS PAVEMENT
- PAVEMENT TO BE MILLED
- 15.0 EXISTING CONTOUR
- EXISTING TREELINE
- EXISTING DRAINAGE DITCH/SWALE
- EXISTING MANHOLE
- EXISTING DROP INLET
- EXISTING SECURITY FENCE
- EXISTING TAXIWAY CIRCUIT
- EXISTING TAXIWAY LIGHT (BASE MOUNTED)
- EXISTING ELECTRICAL DUCT
- EXISTING LIGHTED SIGN
- EXISTING STORM DRAIN
- EXISTING LIGHTING CONDUIT
- B1/A1 APPROXIMATE BORING LOCATION
- WORK AREA LIMITS
- EXISTING AIRCRAFT TIE DOWNS

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ENGINEERING & PLANNING CONSULTANTS
4810 SHELLEY DRIVE WILMINGTON, NC 28405
FAX: 910-762-6251 PHONE: 910-763-5350
SC LICENSE NO. C00386 EMAIL: TBWILM@TBWILM.COM

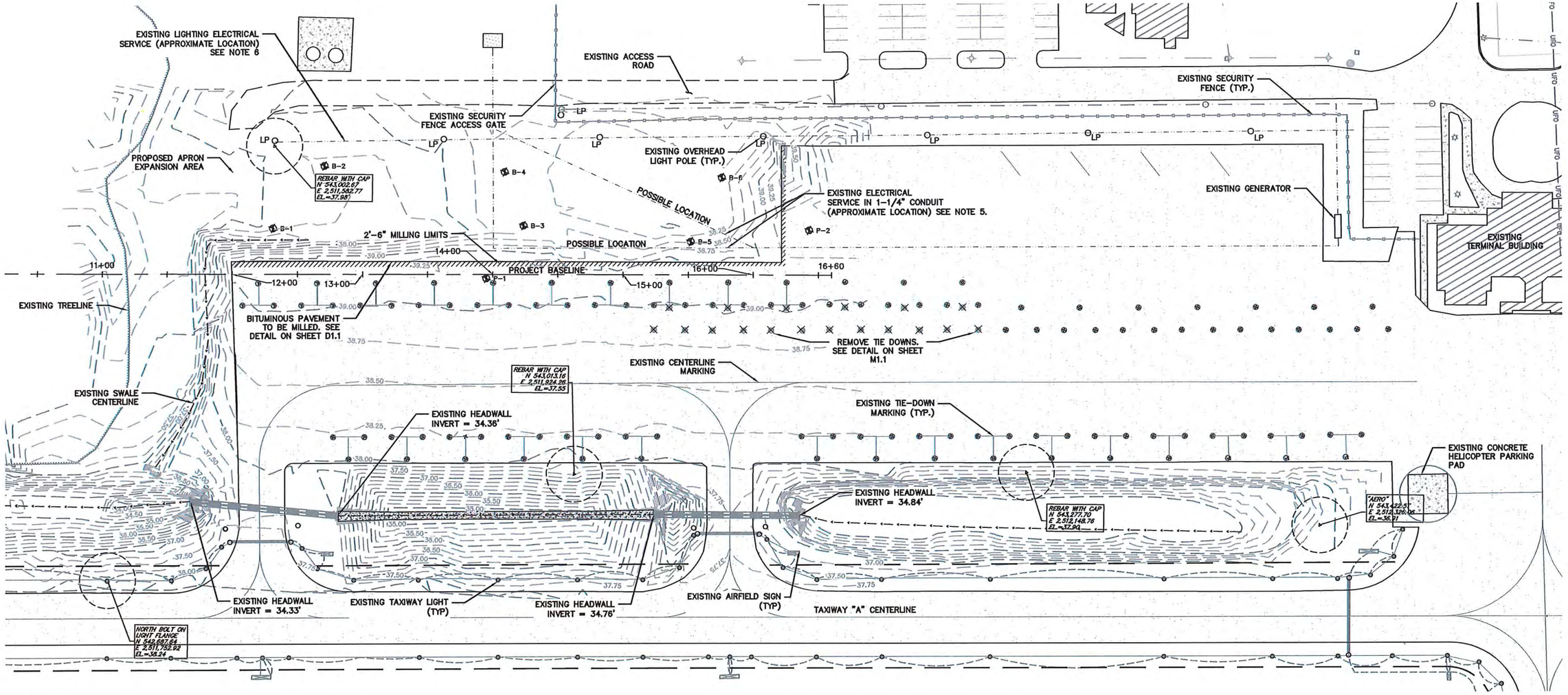
REV. NO.	DESCRIPTION	DATE
	REVISIONS	

GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA
APRON EXPANSION (PHASE IV)

SURVEY LAYOUT PLAN

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 9779 3/9/18 ALAN M. SMITH

Date	JANUARY 2018
Scale	1" = 40'
Drawn	JDL
Checked	AMS
Project No.	2601-1702
Sheet No.	S1.1



LEGEND

- EXISTING CONCRETE PAVEMENT
- EXISTING BITUMINOUS PAVEMENT
- MARKING TO BE REMOVED
- 15.0 EXISTING CONTOUR
- EXISTING TREELINE
- EXISTING DRAINAGE DITCH/SWALE
- EXISTING MANHOLE
- EXISTING DROP INLET
- EXISTING SECURITY FENCE
- EXISTING ELECTRICAL CIRCUIT
- EXISTING TAXIWAY LIGHT (BASE MOUNTED)
- EXISTING ELECTRICAL DUCT
- EXISTING LIGHTED SIGN
- EXISTING STORM DRAIN
- EXISTING LIGHTING CONDUIT
- B-1 APPROXIMATE BORING LOCATION
- EXISTING TIE DOWN TO BE REMOVED
- EXISTING TIE DOWN

GENERAL NOTES:

1. SEE SHEET S1.1 FOR BENCHMARKS AND CONTROL POINT LOCATIONS.
2. BORING LOGS AND TEST DATA ARE CONTAINED IN APPENDIX "F" OF THE SPECIFICATIONS AND ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR SHALL USE DATA AT HIS OWN RISK.
3. FOR SEQUENCE OF CONSTRUCTION SEE SHEETS A1.3.
4. CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THE VICINITY OF EXISTING UNDERGROUND CABLES, DUCTS, AND TAXIWAY LIGHTS TO PREVENT DAMAGE. LOCATIONS SHOWN ARE APPROXIMATE AND ARE BASED ON RECORD INFORMATION. ANY DAMAGE CAUSED BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
5. EXISTING ELECTRICAL CONDUIT ENCASED IN CONCRETE UNDER EXISTING APRON. THE CONTRACTOR SHALL LOCATE CONDUIT IN PROJECT AREA BY HAND DIGGING PRIOR TO BEGINNING EXCAVATION OPERATIONS. CONTRACTOR SHALL USE EXTREME CAUTION DURING EXCAVATION OPERATIONS NOT TO DAMAGE EXISTING CONDUIT INSTALLATION ELECTRICAL CONDUIT SHALL REMAIN IN PLACE AND BE CONCRETE ENCASED. SEE DETAIL SHEET D1.1. IF CONDUIT IS DAMAGED, CONTRACTOR SHALL COMPLETE NECESSARY REPAIR AS DIRECTED BY ENGINEER. REPAIRS SHALL BE COMPLETED AT CONTRACTOR'S EXPENSE. COST OF LOCATING CONDUIT, EXCAVATION, CONCRETE ENCASEMENT AND BACKFILL SHALL BE PAID FOR UNDER ITEM "CONCRETE ENCASEMENT FOR 1 ¼" CONDUIT."
6. THE CONTRACTOR SHALL LOCATE EXISTING LIGHTING SERVICE AND PROTECT DURING CONSTRUCTION. IF THE SERVICE IS DAMAGED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL COMPLETE NECESSARY REPAIR AS DIRECTED BY ENGINEER. REPAIRS SHALL BE COMPLETED AT CONTRACTOR'S EXPENSE.

40 20 0 40 80 120
SCALE IN FEET
1"= 40'

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REV. NO.	DESCRIPTION	DATE
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GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA
APRON EXPANSION (PHASE IV)

EXISTING CONDITIONS AND REMOVAL PLAN

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 9779 3/9/18 ALAN M. SMITH

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION TALBERT & BRIGHT, INC. No. C00386

Date	JANUARY 2018
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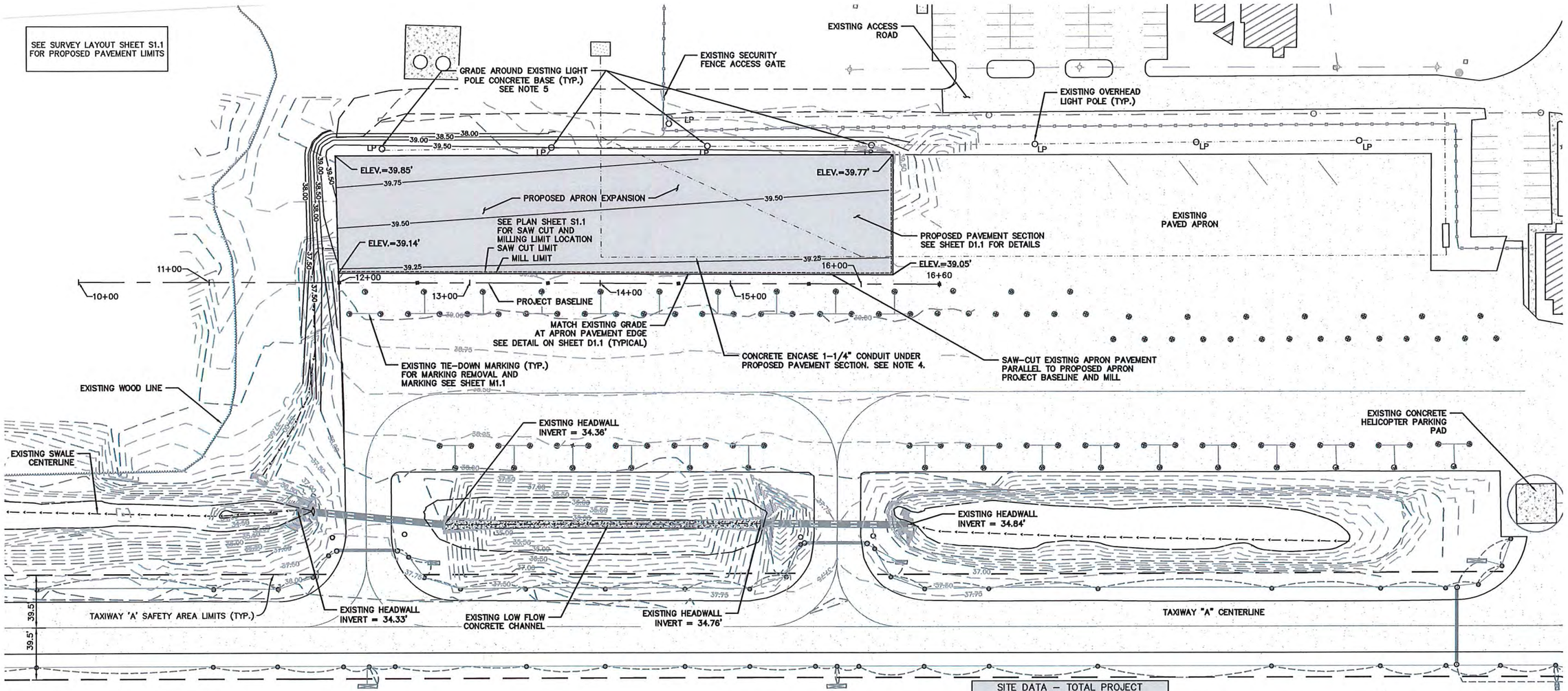
Project No.	2601-1702
Sheet No.	EX1.1



NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR COMPLETION OF AS-BUILT SURVEY. SEE SECTION PSP-20 OF THE PROJECT SPECIFICATIONS FOR AS-BUILT SURVEY REQUIREMENTS.
2. THE MODIFICATION OF THE EXISTING DRY DETENTION POND WAS DESIGNED TO ACCOMMODATE THIS CURRENT PROJECT IMPERVIOUS AREA.

NOTES:

1. PROPOSED CONTOURS SHOWN ON THIS SHEET ARE THE FINISHED GRADE CONTOURS AFTER COMPLETION OF ALL PAVING.
2. FOR TYPICAL PAVEMENT SECTION AND DETAILS SEE SHEET D1.1.
3. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH FOR ALL CONDUITS AND ELECTRICAL SERVICES PRIOR TO BEGINNING EXCAVATION OPERATIONS. FIELD VERIFICATION SHALL BE INCLUDED UNDER ITEM "CONCRETE ENCASEMENT FOR 1¼" CONDUIT."
4. CONTRACTOR SHALL LOCATE EXISTING CONDUIT BY HAND DIGGING PRIOR TO BEGINNING EXCAVATION OPERATIONS. CONTRACTOR SHALL USE EXTREME CAUTION DURING EXCAVATION OPERATIONS SO AS TO NOT DAMAGE EXISTING CONDUIT INSTALLATION. ELECTRICAL CONDUIT SHALL REMAIN IN PLACE AND BE CONCRETE ENCASED. SEE DETAIL SHEET D1.1. IF CONDUIT IS DAMAGED, CONTRACTOR SHALL COMPLETE NECESSARY REPAIRS AS DIRECTED BY THE ENGINEER. REPAIRS SHALL BE COMPLETED AT THE CONTRACTOR'S EXPENSE. COST OF LOCATING CONDUIT, EXCAVATION, CONCRETE ENCASEMENT AND BACKFILL SHALL BE PAID FOR UNDER ITEM "CONCRETE ENCASEMENT FOR 1¼" CONDUIT."
5. CONTRACTOR SHALL USE EXTREME CAUTION DURING GRADING TO NOT DAMAGE LIGHTS BASES OR POLES. IF LIGHT BASES OR POLES ARE DAMAGED, CONTRACTOR SHALL COMPLETE NECESSARY REPAIRS AS DIRECTED BY THE ENGINEER. REPAIRS SHALL BE COMPLETED AT THE CONTRACTOR'S EXPENSE.

SITE DATA – TOTAL PROJECT DRAINAGE AREA	
DRAINAGE AREA =	17.29 AC
TOTAL IMPERVIOUS AREA =	7.49 AC
GRASSED AREA =	9.80 AC
WEIGHTED CN =	65
SOIL =	LAKELAND

SITE DATA – IMPERVIOUS AREA	
BUILDINGS =	0.02 AC
PAVEMENTS =	7.47 AC
SIDEWALKS =	0.00 AC
PADS =	0.00 AC
PONDS =	0.00 AC
TOTAL =	7.49 AC

EXISTING DRY DETENTION BASIN – POND SUMMARY TABLE	
STAGE-STORAGE ELEVATION	ELEVATION
2-YR STORM =	34.96'
10-YR STORM =	35.72'
25-YR STORM =	35.82'
100-YR STORM =	36.10'
TOP OF BANK =	38.00'
EMERGENCY SPILLWAY =	37.00'
OUTLET STRUCTURE WEIR =	35.30'
OUTLET STRUCTURE ORIFICE =	31.39'
BOTTOM OF DRY DETENTION BASIN =	31.39'

NOTE: ABOVE DATA GENERATED UNDER PREVIOUSLY COMPLETED APRON EXPANSION – PHASE III PROJECT (TBI NO 2601-1502)

40 20 0 40 80 120
SCALE IN FEET
1"= 40'

LEGEND

- EXISTING CONCRETE PAVEMENT
- EXISTING BITUMINOUS PAVEMENT
- PROPOSED PAVEMENT
- 15.0 EXISTING CONTOUR
- EXISTING TREELINE
- EXISTING DRAINAGE DITCH/SWALE
- EXISTING MANHOLE
- EXISTING DROP INLET
- EXISTING SECURITY FENCE
- EXISTING TAXIWAY LIGHT (BASE MOUNTED)
- EXISTING ELECTRICAL DUCT
- EXISTING LIGHTED SIGN
- EXISTING STORM DRAIN
- 15.0 PROPOSED CONTOUR
- PROPOSED STORM DRAIN

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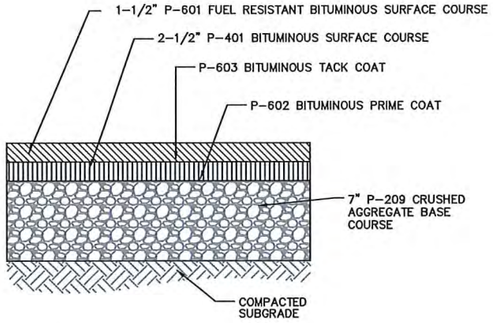
REV. NO.	DESCRIPTION	DATE
	REVISIONS	

GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA
APRON EXPANSION (PHASE IV)

GRADING AND PAVING PLAN

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 9779 3/9/18 ALAN M. SMITH

Date	JANUARY 2018
Scale	1" = 40'
Drawn	JDL
Checked	AMS
Project No.	2601-1702
Sheet No.	G1.1

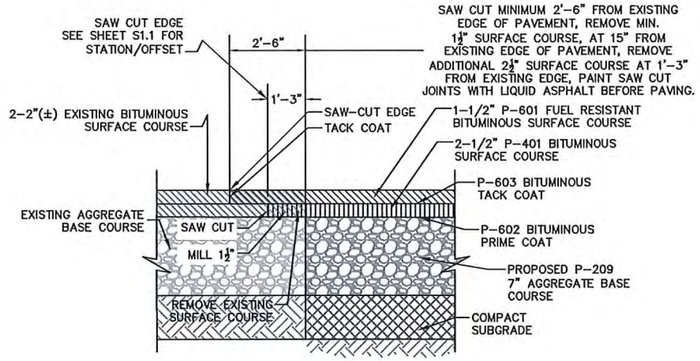


APRON PAVEMENT SECTION
NOT TO SCALE

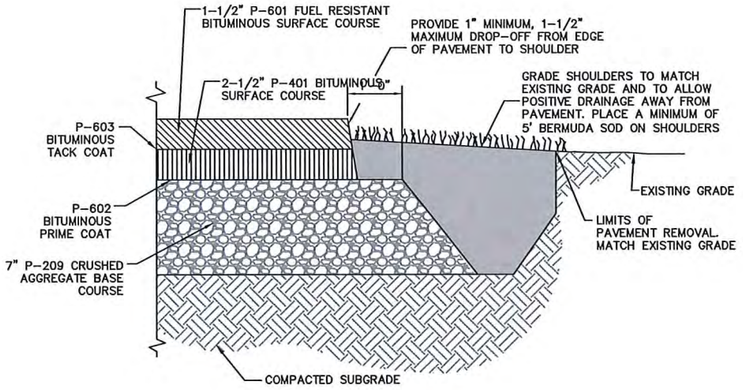
NOTE:

WHERE REQUIRED, FILL MATERIAL PLACED UNDER THE PROPOSED PAVEMENT SECTION SHALL BE BORROW EMBANKMENT (P–152) COMPACTED IN ACCORDANCE WITH SPECIFICATION SECTION P–152.

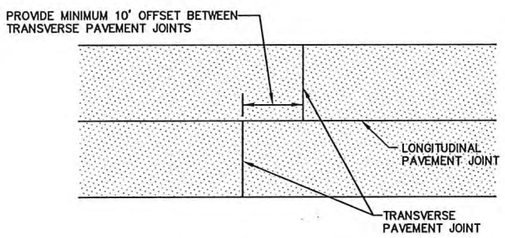
WHERE PAVEMENT SECTION IS CONSTRUCTED DIRECTLY ON EXISTING SUBGRADE, THE EXPOSED SUBGRADE SHALL BE COMPACTED IN ACCORDANCE WITH SPECIFICATION SECTION P–152.



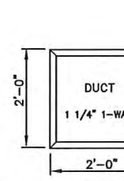
TYPICAL PAVEMENT TIE–IN DETAIL AT APRON EDGE – 4"(±) OF EXISTING BITUMINOUS
NOT TO SCALE



APRON PAVEMENT EDGE DETAIL
NOT TO SCALE

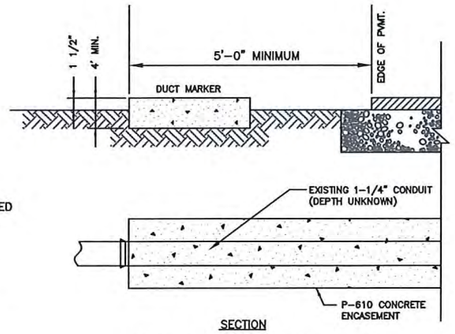


TRANSVERSE PAVEMENT JOINTS
NOT TO SCALE



1. MARKER DESIGNATIONS SHALL BE INSCRIBED ON MARKER IN LETTERS 4" HIGH x 3" WIDE WITH 1/2" LINE THICKNESS SPACED 1 1/2" APART IN A MANNER ACCEPTABLE TO THE ENGINEER. SEE ITEM L–108 OF THE SPECS.
2. DUCT MARKER SHOULD INDICATE NUMBER AND SIZE (i.e. 2W–4in.) OF DUCT.
3. ARROWS SHALL BE ADDED, WHEN NECESSARY, TO INDICATE CHANGE OF DIRECTION OF CABLE RUN.

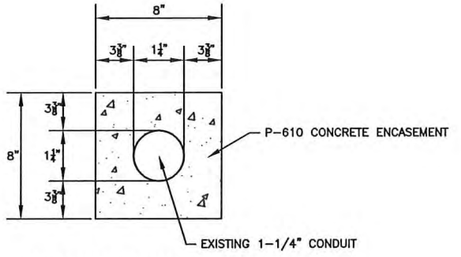
DUCT MARKER DETAIL
NOT TO SCALE



SECTION

UNDERGROUND DUCT & MARKER
NOT TO SCALE

NOTE: CONTRACTOR SHALL USE EXTREME CAUTION DURING EXCAVATION OPERATIONS TO NOT DAMAGE CONDUIT INSTALLATION. ELECTRICAL CONDUIT SHALL REMAIN IN PLACE AND BE CONCRETE ENCASED. IF CONDUIT IS DAMAGED, CONTRACTOR SHALL COMPLETE NECESSARY REPAIR AS DIRECTED BY ENGINEER. REPAIRS SHALL BE COMPLETED AT CONTRACTOR'S EXPENSE.



CONCRETE ENCASEMENT FOR 1¼" CONDUIT
NOT TO SCALE

NOTE: CONCRETE ENCASEMENT OF CONDUIT SHALL BE MEASURED AND PAID FOR ON A LINEAR FOOT BASIS UNDER ITEM "CONCRETE ENCASEMENT FOR 1¼" CONDUIT" INCLUDING CONDUIT LOCATING, EXCAVATION, CONDUIT ENCASEMENT AND BACKFILL. THIS PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS AND FOR ALL PREPARATION, DELIVERY AND INSTALLATION OF THESE MATERIALS AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

LEGEND

- P–601 FUEL RESISTANT BITUMINOUS SURFACE COURSE
- P–401 BITUMINOUS PAVEMENT
- P–209 CRUSHED AGGREGATE BASE COURSE
- SHOULDER GRADING
- EXISTING SUBGRADE

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PHONE: 910-763-5350
SC LICENSE NO. C00386
EMAIL: TBBJM@TBBJM.COM

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA
APRON EXPANSION (PHASE IV)

TYPICAL SECTIONS AND PAVING DETAILS

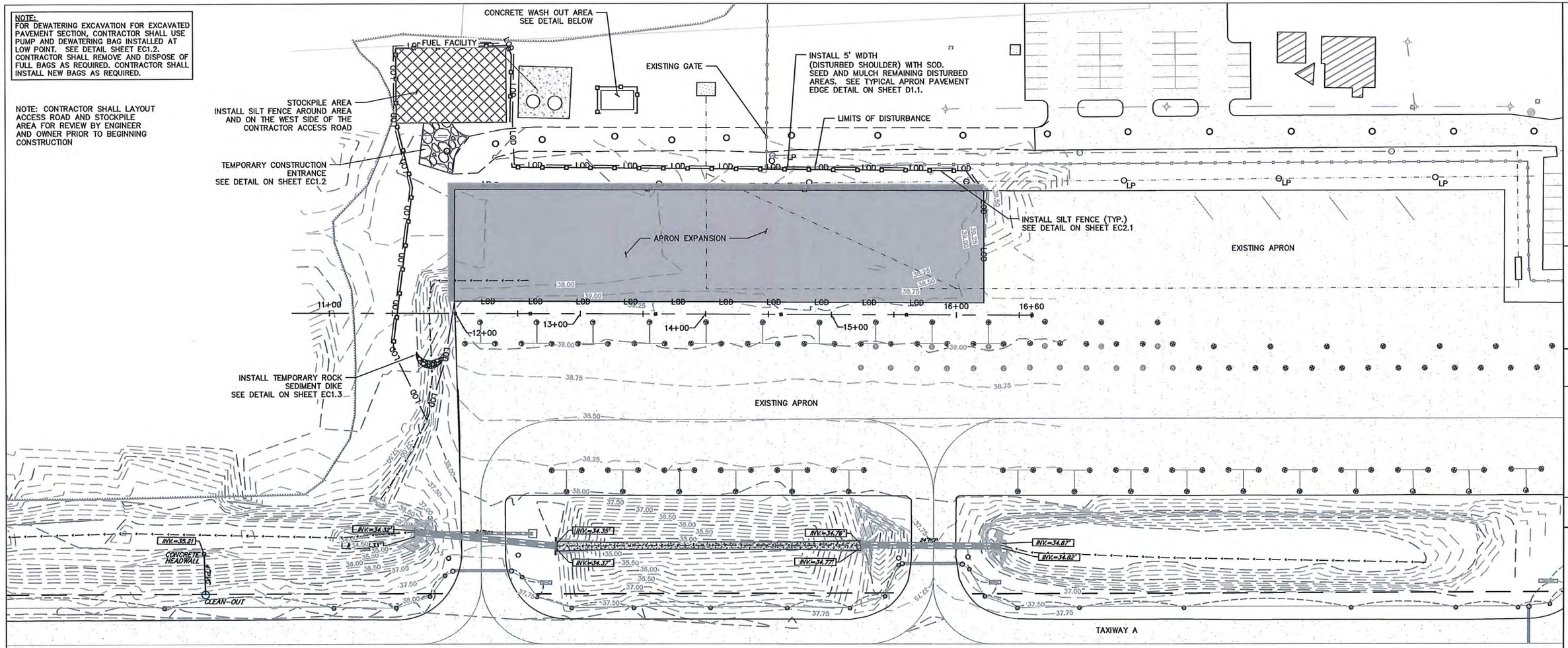
SOUTH CAROLINA PROFESSIONAL ENGINEER
No. 9779
3/9/18
ALAN M. SMITH

Date	JANUARY 2018
Scale	NOT TO SCALE
Drawn	JDL
Checked	AMS
Project No.	2601–1702
Sheet No.	D1.1

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
TALBERT & BRIGHT, INC.
No. C00386

NOTE:
FOR DEWATERING EXCAVATION FOR EXCAVATED PAVEMENT SECTION, CONTRACTOR SHALL USE PUMP AND DEWATERING BAG INSTALLED AT LOW POINT. SEE DETAIL SHEET EC1.2. CONTRACTOR SHALL REMOVE AND DISPOSE OF FULL BAGS AS REQUIRED. CONTRACTOR SHALL INSTALL NEW BAGS AS REQUIRED.

NOTE: CONTRACTOR SHALL LAYOUT ACCESS ROAD AND STOCKPILE AREA FOR REVIEW BY ENGINEER AND OWNER PRIOR TO BEGINNING CONSTRUCTION



SEQUENCE OF CONSTRUCTION

THE FOLLOWING SEQUENCE OF CONSTRUCTION HAS BEEN DEVELOPED TO HELP THE CONTRACTOR UNDERSTAND THE OPERATIONAL NEEDS OF THE AIRPORT AND HELP ENSURE MINIMAL CLOSURE TIME TO APRON AREA. IN ACCORDANCE WITH THE SPECIFICATIONS THE CONTRACTOR SHALL PROVIDE A DETAILED SCHEDULE OF CONSTRUCTION TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. CONTRACTOR HAS 60 CALENDAR DAYS TO COMPLETE ALL WORK.

PRIOR TO BEGINNING PROJECT AND CONTRACT START TIME

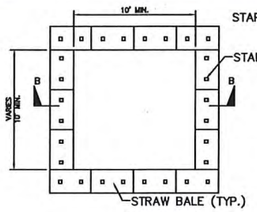
1. OBTAIN ALL NECESSARY PERMITS BEFORE STARTING CONSTRUCTION.
2. NOTIFY DHEC AT LEAST 48 HOURS PRIOR TO BEGINNING WORK.
3. DEVELOP DETAILED SCHEDULE TO ENSURE CONSTRUCTION CAN BE COMPLETED WITHIN CONSTRUCTION TIME ALLOTTED FOR THE PROJECT.
4. CONTRACTOR MAY COMPLETE REQUIRED SURVEY WORK ON PROJECT AREA PRIOR TO CONSTRUCTION START TIME. SCHEDULING FOR THE SURVEY WORK WILL BE REQUIRED TO BE APPROVED BY AIRPORT MANAGEMENT. SEE PROJECT SPECIAL PROVISIONS.

WORK AREA

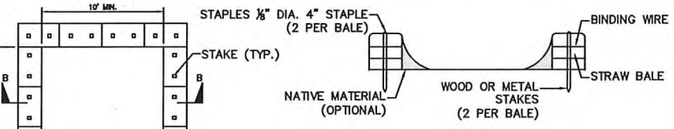
1. MOBILIZE EQUIPMENT AND DEVELOP ACCESS ROAD AS REQUIRED. ESTABLISH STAGING AREA. THE LOCATION OF THE STAGING AREA SHALL BE COORDINATED WITH THE AIRPORT MANAGEMENT.
2. INSTALL LIGHTED BARRICADES AT LOCATIONS SHOWN.
3. INSTALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES.
4. COMPLETE EXCAVATION AND GRADING OPERATIONS AND FINE GRADING APRON SUBGRADE. COMPACT SUBGRADE AS REQUIRED.
5. COMPLETE PLACEMENT, GRADING, AND COMPACTION OF AGGREGATE BASE COURSE.
6. APPLY BITUMINOUS PRIME COAT IN ACCORDANCE WITH SPECIFICATIONS.
7. COMPLETE PAVING OPERATIONS ON THE APRON. PAVEMENT SHALL BE PLACED IN TWO LIFTS INCLUDING A 2–1/2" LIFT (P–401 BITUMINOUS SURFACE COURSE) AND A 1–1/2" LIFT (P–601 FUEL RESISTANT BITUMINOUS SURFACE COURSE).
8. COMPLETE PLACEMENT OF SHOULDER FILL, COMPACT, AND FINE GRADE SHOULDERS IN ACCORDANCE WITH DETAILS SHOWN ON THE PLANS.
9. COMPLETE THE FIRST APPLICATION OF PAVEMENT MARKING ON THE APRON. MARKING SHALL BE INSTALLED WITHOUT BEADS.
10. COMPLETE INSTALLATION OF SOD ALONG THE EDGE OF PAVEMENT AND SEEDING AND MULCHING OPERATIONS AS REQUIRED. RESTORE ALL DISTURBED AREAS AND SEED AND MULCH ALL AREAS AS REQUIRED.
11. REMOVE SILT FENCE ALONG EDGE OF WORK AREA. GRADE, SEED, AND MULCH AS REQUIRED.
12. REMOVE ALL EQUIPMENT, MATERIALS, AND DEBRIS FROM WORK AREA.
13. REMOVE LIGHTED BARRICADES AND RE–OPEN APRON TO AIR OPERATIONS.
14. AFTER SPECIFIED WAITING PERIOD, COMPLETE FINAL PAVEMENT MARKING APPLICATION. CONTRACTOR WILL BE REQUIRED TO CLOSE SECTIONS OF THE APRON DURING MARKING APPLICATION. PLACE LIGHTED BARRICADES AS REQUIRED FOR CLOSING OF APRON AREA AS REQUIRED. REMOVE BARRICADES AFTER MARKING OPERATIONS ARE COMPLETED AND RE–OPEN APRON.
15. SUBMIT NOTICE OF TERMINATION (NOT) AND AS–BUILT TO DHEC.

GENERAL NOTES:

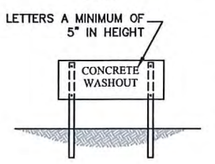
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE OS–SWPPP FOR THE PROJECT. THE OS–SWPPP SHALL BE LOCATED AND MAINTAINED IN ROOM 119 OF THE AIRPORT TERMINAL BUILDING.
2. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE AN AS–BUILT SURVEY FOR THE PROJECT IN ACCORDANCE WITH SECTION PSP–13 OF THE SPECIAL PROVISIONS. THE SURVEY SHALL BE PREPARED BY A SOUTH CAROLINA LICENSED LAND SURVEYOR.



PLAN



SECTION B–B



CONCRETE WASHOUT SIGN DETAIL

NOTES:

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. INSTALL CONCRETE WASHOUT SIGN (24"X24", MINIMUM) WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. TEMPORARY WASHOUT AREA MUST BE AT LEAST 50' FROM A STORM DRAIN, CREEK BANK OR PERIMETER CONTROL.
4. CLEAN OUT CONCRETE WASHOUT AREA WHEN 50% FULL.
5. THE KEY TO FUNCTIONAL CONCRETE WASHOUTS IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR CLEAN OUT.
6. SILT FENCE SHALL BE INSTALLED AROUND PERIMETER OF CONCRETE WASHOUT AREA EXCEPT FOR THE SIDE UTILIZED FOR ACCESSING THE WASHOUT.

CONCRETE WASHOUT AREA DETAIL

NOT TO SCALE

LEGEND

- EXISTING BITUMINOUS PAVEMENT
- EXISTING STORMDRAIN
- EXISTING DRAINAGE DITCH/SWALE
- EXISTING RSA
- EXISTING ROFA
- PROPOSED BITUMINOUS PAVEMENT
- LOD LOD — LIMITS OF DISTURBANCE
- TEMPORARY SILT FENCE
- PROPOSED BERMUDA SOD
- CONTRACTOR'S ACCESS

40 20 0 40 80 120

SCALE IN FEET

1"= 40'

I HAVE PLACED MY SIGNATURE AND SEAL ON THE DESIGN DOCUMENTS SUBMITTED SIGNIFYING THAT I ACCEPT RESPONSIBILITY FOR THE DESIGN OF THE SYSTEM. FURTHER, I CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THE DESIGN IS CONSISTENT WITH THE REQUIREMENTS OF TITLE 48, CHAPTER 14 OF THE CODE OF LAWS OF SC, 1976, AS AMENDED, PURSUANT TO REGULATION 72–300 ET SEQ. (IF APPLICABLE), AND IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF SCR100000."

SOUTH CAROLINA — TALBERT & BRIGHT, INC. — No. C00386 — CERTIFICATE OF AUTHORIZATION

TALBERT & BRIGHT
ENGINEERING & PLANNING CONSULTANTS
4810 SHELLEY DRIVE — WILMINGTON, NC 28405
FAX: 910-762-5251 — PHONE: 910-763-5350
SC LICENSE NO. C00386 — EMAIL: TBWILM@TBWILM.COM

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA
APRON EXPANSION (PHASE IV)

EROSION AND SEDIMENT CONTROL PLAN

SOUTH CAROLINA — REGISTERED PROFESSIONAL ENGINEER — No. 9779 — 3/9/18 — ALAN M. SMITH

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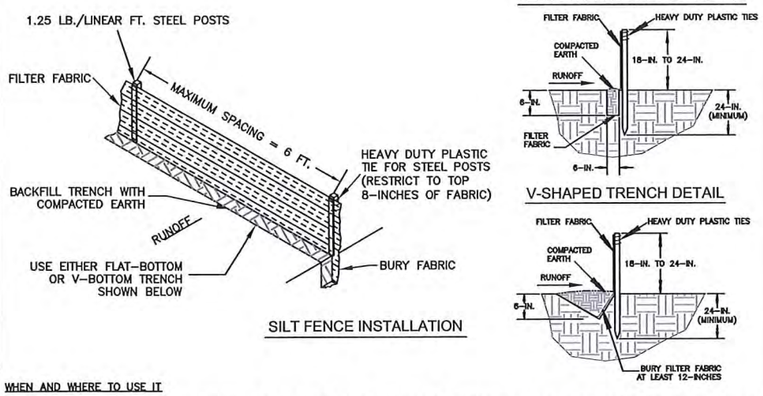


SILT FENCE INSTALLATION

WHEN AND WHERE TO USE IT

DO NOT PLACE SILT FENCE ACROSS CHANNELS OR IN OTHER AREAS SUBJECT TO CONCENTRATED FLOWS. SILT FENCE SHOULD NOT BE USED AS A VELOCITY CONTROL BMP. CONCENTRATED FLOWS ARE ANY FLOWS GREATER THAN 0.5 CFS. MAXIMUM SHEET OR OVERLAND FLOW PATH LENGTH TO THE SILT FENCE SHALL BE 100-FEET. MAXIMUM SLOPE STEEPNESS (NORMAL [PERPENDICULAR] TO THE FENCE LINE) SHALL BE 2:1. SILT FENCE JOINTS, WHEN NECESSARY, SHALL BE COMPLETED BY ONE OF THE FOLLOWING OPTIONS: WRAP EACH FABRIC TOGETHER AT A SUPPORT POST WITH BOTH ENDS FASTENED TO THE POST, WITH A 1-FOOT MINIMUM OVERLAP; OVERLAP SILT FENCE BY INSTALLING 3-FEET PASSED THE SUPPORT POST TO WHICH THE NEW SILT FENCE ROLL IS ATTACHED. ATTACH OLD ROLL TO NEW ROLL WITH HEAVY-DUTY PLASTIC TIES; OR, OVERLAP ENTIRE WIDTH OF EACH SILT FENCE ROLL FROM ONE SUPPORT POST TO THE NEXT SUPPORT POST.

ATTACH FILTER FABRIC TO THE STEEL POSTS USING HEAVY-DUTY PLASTIC TIES THAT ARE EVENLY SPACED WITHIN THE TOP 8-INCHES OF THE FABRIC. INSTALL THE SILT FENCE PERPENDICULAR TO THE DIRECTION OF THE STORMWATER FLOW AND PLACE THE SILT FENCE THE PROPER DISTANCE FROM THE TOE OF STEEP SLOPES TO PROVIDE SEDIMENT STORAGE AND ACCESS FOR MAINTENANCE AND CLEANOUT. INSTALL SILT FENCE CHECKS (TIE-BACKS) EVERY 50-100 FEET, DEPENDENT ON SLOPE, ALONG SILT FENCE THAT IS INSTALLED WITH SLOPE AND WHERE CONCENTRATED FLOWS ARE EXPECTED OR ARE DOCUMENTED ALONG THE PROPOSED/INSTALLED SILT FENCE.

MATERIALS

STEEL POSTS

USE 48-INCH LONG STEEL POSTS THAT MEET THE FOLLOWING MINIMUM PHYSICAL REQUIREMENTS: COMPOSED OF HIGH STRENGTH STEEL WITH MINIMUM YIELD STRENGTH OF 50,000 PSI. HAVE A STANDARD "T" SECTION WITH A NOMINAL FACE WIDTH OF 1.38-INCHES AND NOMINAL "T" LENGTH OF 1.48-INCHES. WEIGH 1.25 POUNDS PER FOOT (± 8%). HAVE A SOIL STABILIZATION PLATE WITH A MINIMUM CROSS SECTION AREA OF 17-SQUARE INCHES ATTACHED TO THE STEEL POSTS. PAINTED WITH A WATER BASED BAKED ENAMEL PAINT.

USE STEEL POSTS WITH A MINIMUM LENGTH OF 48 INCHES, WEIGHING 1.25 POUNDS PER LINEAR FOOT (± 8%) WITH PROJECTIONS TO AID IN FASTENING THE FABRIC. WHEN HEAVY CLAY SOILS ARE PRESENT ON SITE, STEEL POSTS WILL HAVE A METAL SOIL STABILIZATION PLATE WELDED NEAR THE BOTTOM SUCH THAT WHEN THE POST IS DRIVEN TO THE PROPER DEPTH, THE PLATE WILL BE BELOW THE GROUND LEVEL FOR ADDED STABILITY. THE SOIL PLATES SHOULD HAVE THE FOLLOWING CHARACTERISTICS: BE COMPOSED OF MINIMUM 15 GAUGE STEEL AND HAVE A MINIMUM CROSS SECTION AREA OF 17-SQUARE INCHES.

GEOTEXTILE FILTER FABRIC

SILT FENCE MUST BE COMPOSED OF WOVEN GEOTEXTILE FILTER FABRIC THAT CONSISTS OF THE FOLLOWING REQUIREMENTS: COMPOSED OF FIBERS CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS OF AT LEAST 85% BY WEIGHT OF POLYOLEFINS, POLYESTERS, OR POLYAMIDES THAT ARE FORMED INTO A NETWORK SUCH THAT THE FILAMENTS OR YARNS RETAIN DIMENSIONAL STABILITY RELATIVE TO EACH OTHER; FREE OF ANY TREATMENT OR COATING WHICH MIGHT ADVERSELY ALTER ITS PHYSICAL PROPERTIES AFTER INSTALLATION; FREE OF ANY DEFECTS OR FLAWS THAT SIGNIFICANTLY AFFECT ITS PHYSICAL AND/OR FILTERING PROPERTIES; AND HAVE A MINIMUM WIDTH OF 36-INCHES.

USE ONLY FABRIC APPEARING ON SC DOT'S QUALIFIED PRODUCTS LISTING (QPL), APPROVAL SHEET #34, MEETING THE REQUIREMENTS OF THE MOST CURRENT EDITION OF THE SC DOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION. 12-INCHES OF THE FABRIC SHOULD BE PLACED WITHIN EXCAVATED TRENCH AND TOED IN WHEN THE TRENCH IS BACKFILLED. FILTER FABRIC SHALL BE PURCHASED IN CONTINUOUS ROLLS AND CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. FILTER FABRIC SHALL BE INSTALLED AT A MINIMUM OF 24-INCHES ABOVE THE GROUND.

INSTALLATION

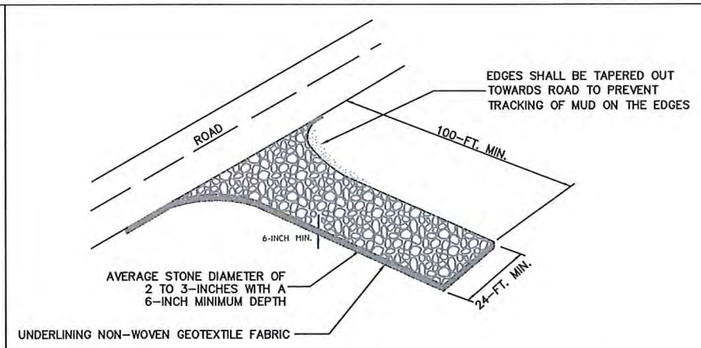
EXCAVATE A TRENCH APPROXIMATELY 6-INCHES WIDE AND 6-INCHES DEEP WHEN PLACING FABRIC BY HAND. PLACE 12-INCHES OF GEOTEXTILE FABRIC INTO THE 6-INCH DEEP TRENCH, EXTENDING THE REMAINING 6-INCHES TOWARDS THE UPSLOPE SIDE OF THE TRENCH. BACKFILL THE TRENCH WITH SOIL OR GRAVEL AND COMPACT. BURY 12-INCHES OF FABRIC INTO THE GROUND WHEN PNEUMATICALLY INSTALLING SILT FENCE WITH A SLICING METHOD. PURCHASE FABRIC IN CONTINUOUS ROLLS AND CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, WRAPPED THE FABRIC TOGETHER AT A SUPPORT POST WITH BOTH ENDS FASTENED TO THE POST, WITH A 6-INCH MINIMUM OVERLAP. INSTALL POSTS TO A MINIMUM DEPTH OF 24-INCHES. INSTALL POSTS A MINIMUM OF 1 TO 2 INCHES ABOVE THE FABRIC, WITH NO MORE THAN 3-FEET OF THE POST ABOVE THE GROUND. SPACE POSTS TO MAXIMUM 6-FEET CENTERS. ATTACH FABRIC TO THE STEEL POSTS USING HEAVY-DUTY PLASTIC TIES THAT ARE EVENLY SPACED AND PLACED IN A MANNER TO PREVENT SAGGING OR TEARING OF THE FABRIC. IN ALL CASES, TIES SHOULD BE AFFIXED IN NO LESS THAN 4 PLACES. INSTALL THE FABRIC A MINIMUM OF 24-INCHES ABOVE THE GROUND. WHEN NECESSARY, THE HEIGHT OF THE FENCE ABOVE GROUND MAY BE GREATER THAN 24-INCHES. IN TIDAL AREAS, EXTRA SILT FENCE HEIGHT MAY BE REQUIRED. THE POST HEIGHT WILL BE TWICE THE EXPOSED POST HEIGHT. POST SPACING WILL REMAIN THE SAME AND EXTRA HEIGHT FABRIC WILL BE 4-, 5-, OR 6-FEET TALL. LOCATE SILT FENCE CHECKS EVERY 100 FEET MAXIMUM AND AT LOW POINTS. INSTALL THE FENCE PERPENDICULAR TO THE DIRECTION OF FLOW AND PLACE THE FENCE THE PROPER DISTANCE FROM THE TOE OF STEEP SLOPES TO PROVIDE SEDIMENT STORAGE AND ACCESS FOR MAINTENANCE AND CLEANOUT.

INSPECTION AND MAINTENANCE

THE KEY TO FUNCTIONAL SILT FENCE IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR SEDIMENT REMOVAL. REGULAR INSPECTIONS OF SILT FENCE SHALL BE CONDUCTED ONCE EVERY CALENDAR WEEK AND, AS RECOMMENDED, WITHIN 24-HOURS AFTER EACH RAINFALL EVEN THAT PRODUCES 1/2-INCH OR MORE OF PRECIPITATION. ATTENTION TO SEDIMENT ACCUMULATIONS ALONG THE SILT FENCE IS EXTREMELY IMPORTANT. ACCUMULATED SEDIMENT SHOULD BE CONTINUALLY MONITORED AND REMOVED WHEN NECESSARY. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES 1/3 THE HEIGHT OF THE SILT FENCE REMOVED SEDIMENT SHALL BE PLACED IN STOCKPILE STORAGE AREAS OR SPREAD THINLY ACROSS DISTURBED AREA. STABILIZE THE REMOVED SEDIMENT AFTER IT IS RELOCATED. CHECK FOR AREAS WHERE STORMWATER RUNOFF HAS ERODED A CHANNEL BENEATH THE SILT FENCE, OR WHERE THE FENCE HAS SAGGED OR COLLAPSED DUE TO RUNOFF OVERTOPPING THE SILT FENCE. INSTALL CHECKS/TIE-BACKS AND/OR REINSTALL SILT FENCE, AS NECESSARY. CHECK FOR TEARS WITHIN THE SILT FENCE, AREAS WHERE SILT FENCE HAS BEGUN TO DECOMPOSE, AND FOR ANY OTHER CIRCUMSTANCE THAT MAY RENDER THE SILT FENCE INEFFECTIVE. REMOVED DAMAGED SILT FENCE AND REINSTALL NEW SILT FENCE IMMEDIATELY. SILT FENCE SHOULD BE REMOVED WITHIN 30 DAYS AFTER FINAL STABILIZATION IS ACHIEVED AND ONCE IT IS REMOVED, THE RESULTING DISTURBED AREA SHALL BE PERMANENTLY STABILIZED.

TEMPORARY SILT FENCE

NOT TO SCALE



WHEN AND WHERE TO USE IT

STABILIZED CONSTRUCTION ENTRANCES SHOULD BE USED AT ALL POINTS WHERE TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE AND MOVING DIRECTLY ONTO A PUBLIC ROAD.

IMPORTANT CONSIDERATIONS

IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFFSITE. WASHDOWN FACILITIES SHALL BE REQUIRED AS DIRECTED BY SCDHEC AS NEEDED. WASHDOWN AREAS IN GENERAL MUST BE ESTABLISHED WITH CRUSHED GRAVEL AND DRAIN INTO A SEDIMENT TRAP OR SEDIMENT BASIN. CONSTRUCTION ENTRANCES SHOULD BE USED IN CONJUNCTION WITH THE STABILIZATION OF CONSTRUCTION ROADS TO REDUCE THE AMOUNT OF MUD PICKED UP BY VEHICLES.

INSTALLATION:

REMOVE ALL VEGETATION AND ANY OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM STONES TO A SEDIMENT TRAP OR BASIN. INSTALL A NON-WOVEN GEOTEXTILE FABRIC PRIOR TO PLACING ANY STONE. THE ENTRANCE SHALL CONSIST OF 1-INCH TO 3-INCH D50 STONE PLACED AT A MINIMUM DEPTH OF 6-INCHES. MINIMUM DIMENSIONS OF THE ENTRANCE SHALL BE 24-FEET WIDE BY 100-FEET LONG, AND MAY BE MODIFIED AS NECESSARY TO ACCOMMODATE SITE CONSTRAINTS. THE EDGES OF THE ENTRANCE SHALL BE TAPERED OUT TOWARDS THE ROAD TO PREVENT TRACKING OF MUD AT THE EDGE OF THE ENTRANCE.

INSPECTION AND MAINTENANCE:

INSPECT CONSTRUCTION ENTRANCES EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24-HOURS AFTER EACH RAINFALL EVENT THAT PRODUCES ½-INCHES OR MORE OF PRECIPITATION, OR AFTER HEAVY USE. CHECK FOR MUD AND SEDIMENT BUILDUP AND PAD INTEGRITY. MAKE DAILY INSPECTIONS DURING PERIODS OF WET WEATHER. MAINTENANCE IS REQUIRED MORE FREQUENTLY IN WET WEATHER CONDITIONS. RESHAPE THE STONE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL.

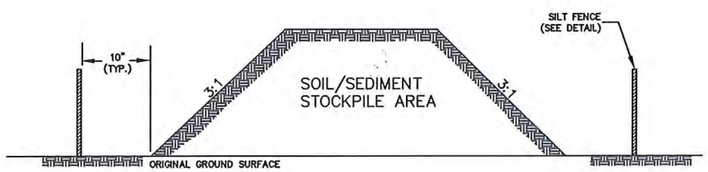
WASH OR REPLACE STONES AS NEEDED AND AS DIRECTED BY THE INSPECTOR. THE STONE IN THE ENTRANCE SHOULD BE WASHED OR REPLACED WHENEVER THE ENTRANCE FAILS TO REDUCE MUD BEING CARRIED OFF-SITE BY VEHICLES. FREQUENT WASHING WILL EXTEND THE USEFUL LIFE OF STONE.

IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS BY BRUSHING OR SWEEPING. FLUSHING SHOULD ONLY BE USED WHEN THE WATER CAN BE DISCHARGED TO A SEDIMENT TRAP OR BASIN.

REPAIR ANY BROKEN PAVEMENT IMMEDIATELY.

TEMPORARY CONSTRUCTION ENTRANCE/EXIT

NOT TO SCALE

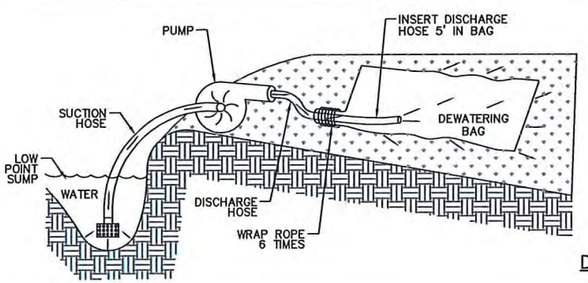


NOTES:

1. SILT FENCE TO EXTEND AROUND ENTIRE PERIMETER OF STOCKPILE, OR IF STOCKPILE AREA IS LOCATED ON/NEAR A SLOPE THE SILT FENCE IS TO EXTEND ALONG CONTOURS OF THE DOWN-GRADIENT AREA.
2. IF STOCKPILE IS TO REMAIN FOR MORE THAN 14 DAYS, TEMPORARY STABILIZATION MEASURES MUST BE IMPLEMENTED.
3. SILT FENCE SHALL BE MAINTAINED UNTIL STOCKPILE AREA HAS EITHER BEEN REMOVED OR PERMANENTLY STABILIZED.
4. THE KEY TO FUNCTIONAL TEMPORARY STOCKPILE AREAS IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR SEDIMENT REMOVAL.

TEMPORARY STOCKPILE AREA

NOT TO SCALE



DEWATERING BAG

NOT TO SCALE

NOTE:

1. A SEDCATCH DEWATERING BAG OR APPROVED EQUAL SHOULD BE USED ANYTIME WATER IS PUMPED FROM EXCAVATED AREAS ON SITE.

INSTALLATION AND USE:

2. PLACE DEWATERING BAG ON THE GROUND OR ON A TRAILER OVER A LEVEL STABILIZED AREA.
3. INSERT DISCHARGE PIPE A MINIMUM OF 5 FEET INSIDE DEWATERING BAG AND SECURE WITH A ROPE WRAPPED 6 TIMES AROUND THE SNOUT OVER A 6 INCH WIDTH OF THE BAG.
4. REPLACE DEWATERING BAG WHEN HALF FULL OF SEDIMENT OR WHEN THE SEDIMENT HAS REDUCED THE FLOW RATE OF THE PUMP DISCHARGE TO AN IMPRACTICAL AMOUNT.

MAINTENANCE AND DISPOSAL:

1. REMOVE AND DISPOSE OF ACCUMULATED SEDIMENT AWAY FROM WATERWAYS OR ENVIRONMENTALLY SENSITIVE AREAS. SLIT OPEN SEDIMENT BAG AND REMOVE ACCUMULATED SEDIMENT AND DISPERSE IN GRADED AREAS AND STABILIZE. DISPOSE OF BAG AT AN APPROPRIATE RECYCLING OR SOLID WASTE FACILITY.

EROSION AND SEDIMENT CONTROL STANDARD NOTES:

1. IF NECESSARY, SLOPES, WHICH EXCEED EIGHT (8) VERTICAL FEET SHOULD BE STABILIZED WITH SYNTHETIC OR VEGETATIVE MATS, IN ADDITION TO HYDROSEEDING. IT MAY BE NECESSARY TO INSTALL TEMPORARY SLOPE DRAINS DURING CONSTRUCTION. TEMPORARY BERMS MAY BE NEEDED UNTIL THE SLOPE IS BROUGHT TO GRADE.
2. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOURTEEN (14) DAYS AFTER WORK HAS CEASED, EXCEPT AS STATED BELOW.
   - 2.1. WHERE STABILIZATION BY THE 14TH DAY IS PRECLUDED BY SNOW COVER OR FROZEN GROUND CONDITIONS STABILIZATION MEASURES MUST BE INITIATED AS SOON AS PRACTICABLE.
   - 2.2. WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH-DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 14 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE.
3. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED ONCE A CALENDAR WEEK. IF PERIODIC INSPECTIONS OR OTHER INFORMATION INDICATES THAT A BMP HAS BEEN INAPPROPRIATELY, OR INCORRECTLY INSTALLED, THE PERMITTEE MUST ADDRESS THE NECESSARY REPLACEMENT OR MODIFICATION REQUIRED TO CORRECT THE BMP WITHIN 48 HOURS OF IDENTIFICATION.
4. PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED, AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY INSTALLATION. FILL, COVER, AND TEMPORARY SEEDING AT THE END OF EACH DAY ARE RECOMMENDED. IF WATER IS ENCOUNTERED WHILE TRENCHING, THE WATER SHOULD BE FILTERED TO REMOVE ANY SEDIMENTS BEFORE BEING PUMPED BACK INTO ANY WATERS OF THE STATE.
5. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
6. THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO PAVED ROADWAY(S) FROM CONSTRUCTION AREAS AND THE GENERATION OF DUST. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT, AS MAY BE REQUIRED.
7. RESIDENTIAL SUBDIVISIONS REQUIRE EROSION CONTROL FEATURES FOR INFRASTRUCTURE AS WELL AS FOR INDIVIDUAL LOT CONSTRUCTION. INDIVIDUAL PROPERTY OWNERS SHALL FOLLOW THESE PLANS DURING CONSTRUCTION OR OBTAIN APPROVAL OF AN INDIVIDUAL PLAN IN ACCORDANCE WITH S.C REG. 72-300 ET SEQ. AND SCR100000.
8. TEMPORARY DIVERSION BERMS AND/OR DITCHES WILL BE PROVIDED AS NEEDED DURING CONSTRUCTION TO PROTECT WORK AREAS FROM UPSLOPE RUNOFF AND/OR TO DIVERT SEDIMENT-LADEN WATER TO APPROPRIATE TRAPS OR STABLE OUTLETS.
9. ALL WATERS OF THE STATE (WOS), INCLUDING WETLANDS, ARE TO BE FLAGGED OR OTHERWISE CLEARLY MARKED IN THE FIELD. A DOUBLE ROW OF SILT FENCE IS TO BE INSTALLED IN ALL AREAS WHERE A 50-FOOT BUFFER CAN'T BE MAINTAINED BETWEEN THE DISTURBED AREA AND ALL WOS. A 10-FOOT BUFFER SHOULD BE MAINTAINED BETWEEN THE LAST ROW OF SILT FENCE AND ALL WOS.
10. LITTER, CONSTRUCTION DEBRIS, OILS, FUELS, AND BUILDING PRODUCTS WITH SIGNIFICANT POTENTIAL FOR IMPACT (SUCH AS STOCKPILES OF FRESHLY TREATED LUMBER) AND CONSTRUCTION CHEMICALS THAT COULD BE EXPOSED TO STORM WATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE IN STORM WATER DISCHARGES.
11. A COPY OF THE SWPPP, INSPECTIONS RECORDS, AND RAINFALL DATA MUST BE RETAINED AT THE CONSTRUCTION SITE OR A NEARBY LOCATION EASILY ACCESSIBLE DURING NORMAL BUSINESS HOURS, FROM THE DATE OF COMMENCEMENT OF CONSTRUCTION ACTIVITIES TO THE DATE THAT FINAL STABILIZATION IS REACHED.
12. INITIATE STABILIZATION MEASURES ON ANY EXPOSED STEEP SLOPE (3H:1V OR GREATER) WHERE LAND-SIDTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED, AND WILL NOT RESUME FOR A PERIOD OF 7 CALENDAR DAYS.
13. MINIMIZE SOIL COMPACTION AND, UNLESS INFEASIBLE, PRESERVE TOPSOIL.
14. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER, AND OTHER WASH WATERS. WASH WATERS MUST BE TREATED IN A SEDIMENT BASIN OR ALTERNATIVE CONTROL THAT PROVIDES EQUIVALENT OR BETTER TREATMENT PRIOR TO DISCHARGE.
15. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM DEWATERING OF TRENCHES AND EXCAVATED AREAS. THESE DISCHARGES ARE TO BE ROUTED THROUGH APPROPRIATE BMPS (SEDIMENT BASIN, FILTER BAG, ETC.).
16. THE FOLLOWING DISCHARGES FROM SITES ARE PROHIBITED:
   - 16.1. WASTEWATER FROM WASHOUT OF CONCRETE, UNLESS MANAGED BY AN APPROPRIATE CONTROL;
   - 16.2. WASTEWATER FROM WASHOUT AND CLEANOUT OF STUCCO, PAIN, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS;
   - 16.3. FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE; AND
   - 16.4. SOAPS OR SOLVENTS USED IN VEHICLE AND EQUIPMENT WASHING.
17. AFTER CONSTRUCTION ACTIVITIES BEGIN, INSPECTIONS MUST BE CONDUCTED AT A MINIMUM OF AT LEAST ONCE EVERY CALENDAR WEEK AND MUST BE CONDUCTED UNTIL FINAL STABILIZATION IS REACHED ON ALL AREAS OF THE CONSTRUCTION SITE.
18. IF EXISTING BMPs NEED TO BE MODIFIED OR IF ADDITIONAL BMPs ARE NECESSARY TO COMPLY WITH THE REQUIREMENTS OF THIS PERMIT AND/OR SC'S WATER QUALITY STANDARDS, IMPLEMENTATION MUST BE COMPLETED BEFORE THE NEXT STORM EVENT WHENEVER PRACTICABLE. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICAL, THE SITUATION MUST BE DOCUMENTED IN THE SWPPP AND ALTERNATIVE BMPs MUST BE IMPLEMENTED AS SOON AS REASONABLY POSSIBLE.
19. A PRE-CONSTRUCTION CONFERENCE MUST BE HELD FOR EACH CONSTRUCTION SITE WITH AN APPROVED ON-SITE SWPPP PRIOR TO THE IMPLEMENTATION OF CONSTRUCTION ACTIVITIES. FOR NON-LINEAR PROJECTS THAT DISTURB 10 ACRES OR MORE THIS CONFERENCE MUST BE HELD ON-SITE UNLESS THE DEPARTMENT HAS APPROVED OTHERWISE.

PERMANENT SEED MIXES SHALL BE APPLIED AS FOLLOWS:

SEED	MINIMUM SEED PURITY (PERCENT)	MINIMUM GERMINATION (PERCENT)	RATE OF APPLICATION (LBS/ACRE)	SEEDING DATES
HULLED COMMON BERMUDA GRASS	80%	70%	70	MARCH 1 – JULY 31
UNHULLED COMMON BERMUDA GRASS	80%	70%	70	AUGUST 1 – FEB. 28
RYE (GRAIN)	80%	70%	120	

TEMPORARY SEED MIXES SHALL BE APPLIED AS FOLLOWS:

SEED	MINIMUM SEED PURITY (PERCENT)	MINIMUM GERMINATION (PERCENT)	RATE OF APPLICATION (LBS/ACRE)	SEEDING DATES
HULLED COMMON BERMUDA GRASS	80%	70%	70	MARCH 1 – JULY 31
RYE (GRAIN)	76%	70%	120	AUGUST 1 – FEB. 28

SEED MIXTURE AND PLANTING DATES

NOT TO SCALE

TALBERT & BRIGHT
ENGINEERING & PLANNING CONSULTANTS
4810 SHELLEY DRIVE WILMINGTON, NC 28405
FAX: 910-762-6281 PHONE: 910-763-5350
SC LICENSE NO. C00386 EMAIL: TB@MYTB.IM.COM

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

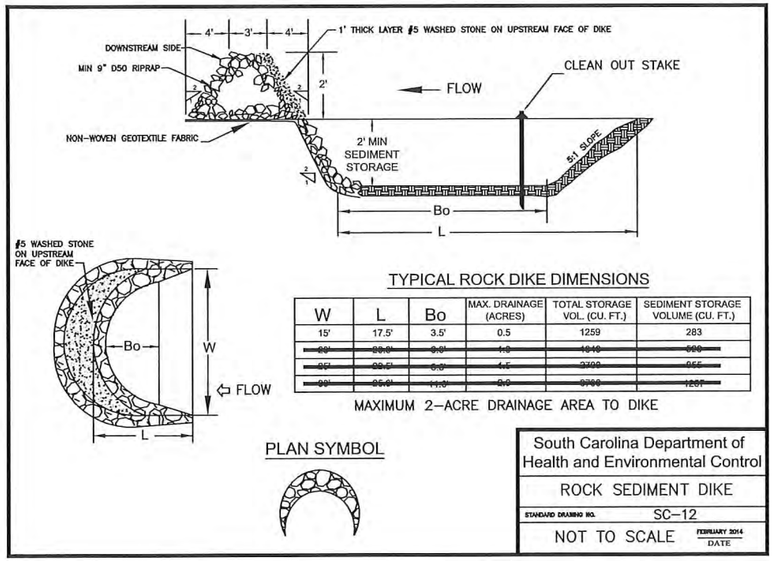
GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA
APRON EXPANSION (PHASE IV)

EROSION CONTROL NOTES AND DETAILS

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 9779 3/9/18 ALAN M. SMITH

Date	JANUARY 2018
Scale	NOT TO SCALE
Drawn	JDL
Checked	AMS
Project No.	2601-1702
Sheet No.	EC1.2

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION TALBERT & BRIGHT, INC. No. C00386



TYPICAL ROCK DIKE DIMENSIONS

W	L	Bo	MAX. DRAINAGE (ACRES)	TOTAL STORAGE VOL. (CU. FT.)	SEDIMENT STORAGE VOLUME (CU. FT.)
15'	17.5'	3.5'	0.5	1259	283
~~20'~~	~~22.5'~~	~~3.5'~~	~~1.0~~	~~1919~~	~~509~~
~~25'~~	~~28.5'~~	~~3.5'~~	~~1.5~~	~~2709~~	~~955~~
~~30'~~	~~35.5'~~	~~4.0'~~	~~2.0~~	~~3798~~	~~1634~~

MAXIMUM 2–ACRE DRAINAGE AREA TO DIKE

PLAN SYMBOL

South Carolina Department of Health and Environmental Control

ROCK SEDIMENT DIKE

STANDARD DRAWING NO. SC–12

NOT TO SCALE — FEBRUARY 2014 DATE

ROCK SEDIMENT DIKE – GENERAL NOTES

1. Rock sediment dikes should not be placed in Waters of the State or USGS blue–line streams (unless approved by Federal Authorities).
2. A non–woven geotextile fabric shall be installed over the soil surface where the rock sediment dike is to be placed.
3. The body of a rock sediment dike shall be composed of 9–inch D50 riprap at a minimum.
4. The upstream face of the rock sediment dike shall be composed of a 1–foot thick layer of 3/4–inch to 1–inch D50 washed stone placed at a slope of 2H:1V.
5. Rock sediment dikes shall have a minimum top flow length of 3–feet (2–foot flow length through the riprap and 1–foot flow length through the washed stone).
6. The rock must be placed by hand or mechanical placement (no dumping of rock to form the sediment dike) to achieve proper dimensions.
7. A sediment sump shall be located on the upstream side of the structure to provide sediment storage. The upstream side of the sump shall have a slope of 5H:1V to inhibit erosion of the sediment storage area. The minimum depth of the sump shall be 2–feet.
8. Mark the sediment clean–out level of the sediment dike with a stake in the field.
9. Seed and mulch all disturbed areas.

ROCK SEDIMENT DIKE – INSPECTION AND MAINTENANCE

1. The key to a functional rock sediment dike is weekly inspection, routine maintenance and regular sediment removal.
2. Attention to sediment accumulations within the rock sediment dike is extremely important. Accumulated sediment deposition should be continually monitored in the trap and removed when necessary.
3. Remove accumulated sediment when it reaches 50% of the designed sediment storage volume as marked by the clean–out stake.
4. Removed sediment from the rock sediment dike shall be placed in stockpile storage areas or spread thinly across the disturbed area. Stabilize the removed sediment after it is relocated.
5. Regular inspections of rock sediment dikes should be conducted once every calendar week and, as recommended, within 24–hours after each rainfall event that produces ½–inch or more of precipitation.
6. All rock sediment dikes should be removed within 30 days after final stabilization is achieved. Dispose of all construction materials appropriately. Disturbed area resulting from removal shall be permanently stabilized.

South Carolina Department of Health and Environmental Control

ROCK SEDIMENT DIKE

STANDARD DRAWING NO. SC–12

GENERAL NOTES — FEBRUARY 2014 DATE

TALBERT & BRIGHT
ENGINEERING & PLANNING CONSULTANTS
4810 SHELLEY DRIVE
FAX: 910-762-5251
WILMINGTON, NC 28405
PHONE: 910-763-5350
SC LICENSE NO. C00386
EMAIL: TBILLM@TBILLM.COM

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GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA
APRON EXPANSION (PHASE IV)

EROSION CONTROL NOTES AND DETAILS

SOUTH CAROLINA PROFESSIONAL ENGINEER
No. 9779
3/9/18
ALAN M. SMITH

Date	JANUARY 2018
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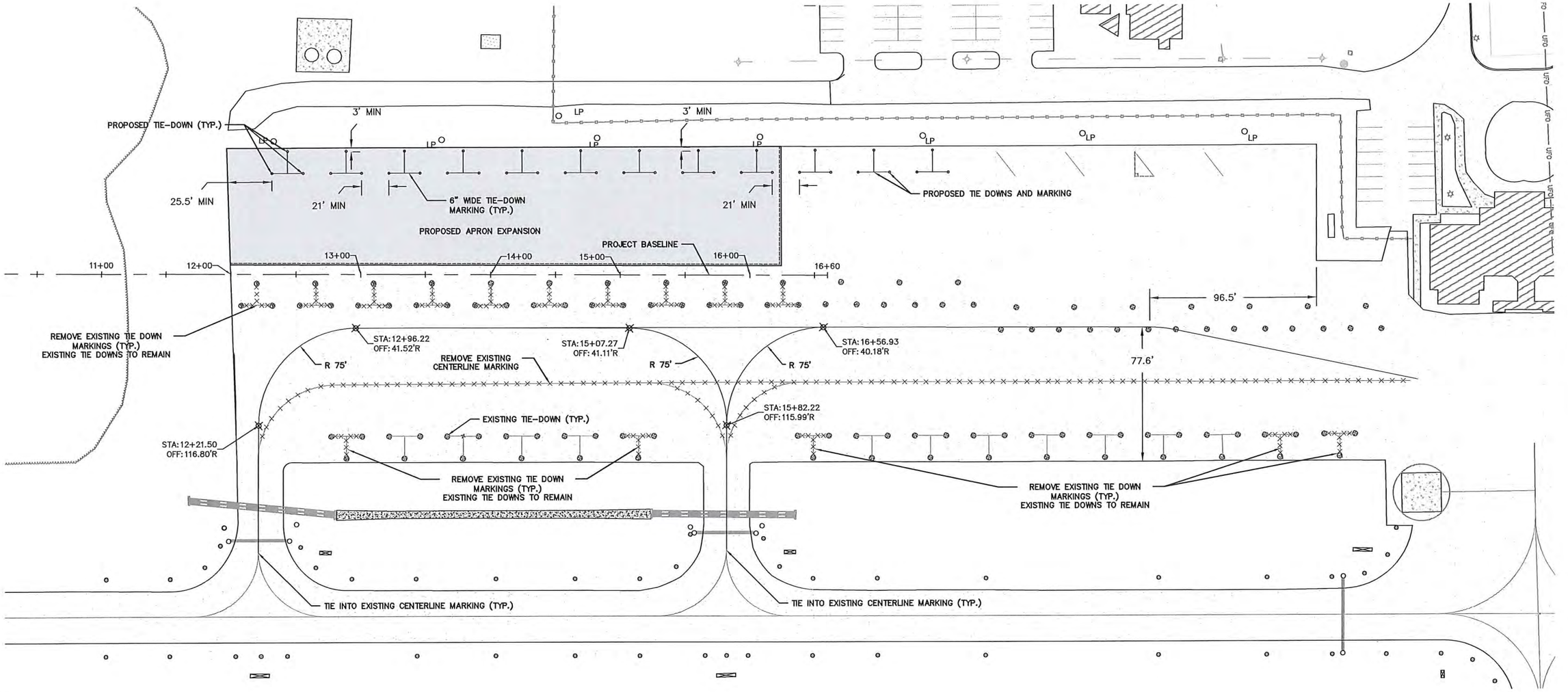
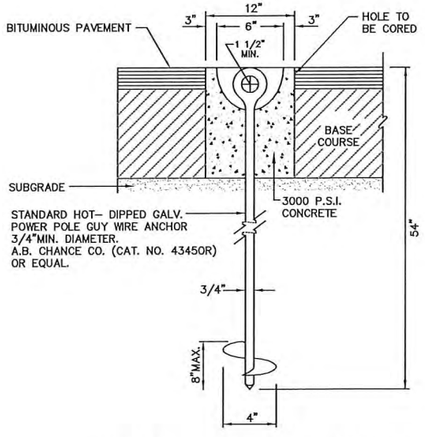


NOTES:

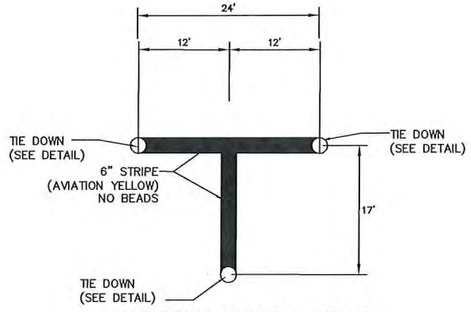
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT OF MARKINGS FOR APRON. THE ENGINEER SHALL REVIEW LAYOUT PRIOR TO CONTRACTOR BEGINNING PAINTING OPERATIONS.
2. REFLECTIVE BEADS SHALL BE APPLIED ON ALL APPLICATIONS OF MARKINGS (EXCEPT BLACK OUTLINES). ALL MARKING SHALL HAVE NEAT AND SHARP FINISHED EDGES AND ENDS. CONTRACTOR MAY UTILIZE SHINGLES OR OTHER MEANS TO MARK LINE ENDS AND MINIMIZE OVERSPRAY.
3. SEE PROJECT SPECIFICATIONS FOR SEAL COAT REQUIREMENTS.

LEGEND

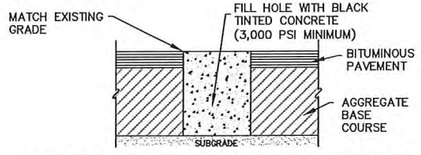
- PROPOSED SEAL COAT
- EXISTING BITUMINOUS PAVEMENT
- PROPOSED PAVEMENT
- EXISTING TREELINE
- EXISTING SECURITY FENCE
- EXISTING TAXIWAY LIGHT (BASE MOUNTED)
- EXISTING ELECTRICAL DUCT
- EXISTING LIGHTED SIGN
- PROPOSED STORM DRAIN
- PROPOSED MARKING



TIE DOWN INSTALLATION DETAIL
NOT TO SCALE



TIE DOWN MARKING DETAIL
NOT TO SCALE

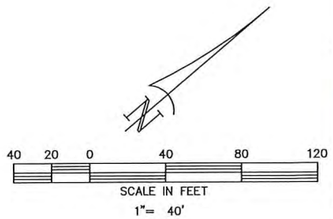


PAVEMENT REPAIR FOR TIE DOWN REMOVAL
NOT TO SCALE

TIE DOWN REMOVAL NOTES:

1. CORE THROUGH PAVEMENT AND AGGREGATE BASE COURSE. CONTRACTOR SHALL UTILIZE 8" DIAMETER CORE (MINIMUM) TO REMOVE ALL REMNANTS OF EXISTING TIE DOWNS. CONTRACTOR SHALL REMOVE EXISTING PAVEMENT AND TIE DOWN ANCHOR. ALL DEBRIS SHALL BE DISPOSED OF OFF AIRPORT PROPERTY.
2. CONTRACTOR SHALL USE CARE DURING REMOVAL OPERATIONS TO MINIMIZE DAMAGE TO EXISTING PAVEMENT TO REMAIN.
3. BACKFILL CORED HOLE WITH CONCRETE. MINIMUM DEPTH OF CONCRETE SHALL BE 12". MATCH EXISTING GRADES WITH CONCRETE PLACEMENT. USE CARE WHEN PLACING CONCRETE TO PROVIDE A NEAT AND FINISHED REPAIR.
4. TIE DOWN REMOVAL SHALL BE MEASURED AND PAID FOR ON A PER EACH BASIS.

NOTE: TIE DOWNS TO BE INSTALLED SHALL BE MEASURED AND PAID FOR ON A PER EACH BASIS. THIS PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS AND FOR PREPARATION, DELIVERY AND INSTALLATION OF THESE MATERIALS AND FOR ALL LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.



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ENGINEERING & PLANNING CONSULTANTS
4810 SHELLEY DRIVE
FAX: 910-762-6281
WILMINGTON, NC 28405
PHONE: 910-763-5350
EMAIL: TBWILMOTBWLM.COM
SC LICENSE NO. C00386

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GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA
APRON EXPANSION (PHASE IV)

MARKING PLAN AND MISCELLANEOUS DETAILS

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 9779 3/9/18 ALAN M. SMITH

Date	JANUARY 2018
Scale	1" = 40'
Drawn	JDL
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Project No.	2601-1702
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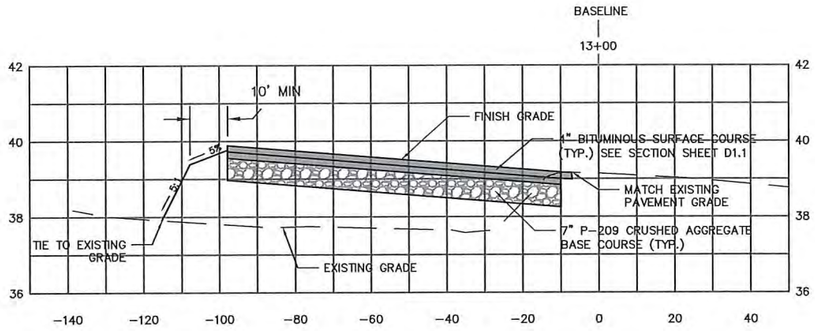
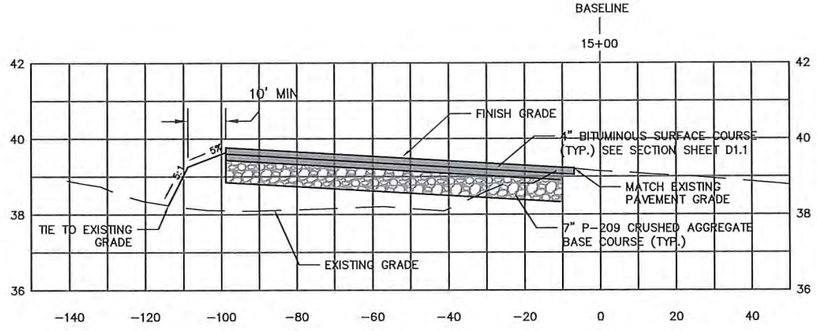
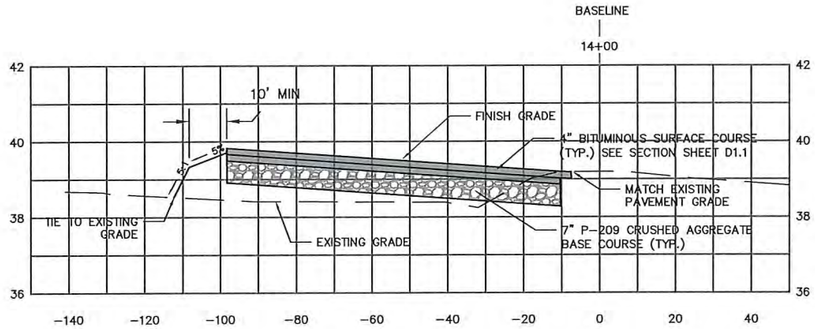
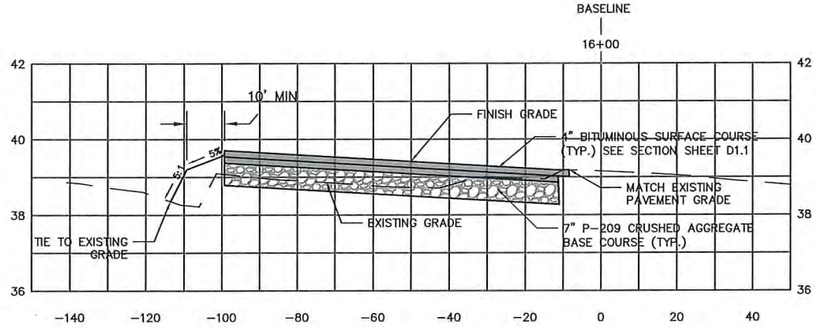
SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION TALBERT & BRIGHT, INC. No. C00386









PROJECT BASELINE CROSS SECTIONS (APRON)

H: 1"=20'
V: 1"=2'

TALBERT & BRIGHT
ENGINEERING & PLANNING CONSULTANTS
4810 SHELLEY DRIVE
FAX: 910-762-6281
WILMINGTON, NC 28405
PHONE: 910-763-5350
SC LICENSE NO. C00386
EMAIL: TBWILM@TBWILM.COM

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GEORGETOWN COUNTY AIRPORT
GEORGETOWN, SOUTH CAROLINA
APRON EXPANSION (PHASE IV)

CROSS SECTIONS

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER
No. 9779
3/1/18
ALAN M. SMITH

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
TALBERT & BRIGHT, INC.
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