SPECIFICATIONS AND CONTRACT DOCUMENTS

COLT, ARKANSAS
DELTA REGIONAL AIRPORT

JET-A FUEL SYSTEM INSTALLATION

AIP PROJECT NO. 3-05-0091-0012-2019
GARVER PROJECT NO. 19A10120

ISSUED FOR BID

Prepared For:

DELTA REGIONAL AIRPORT AUTHORITY

October 2020

GARVER
GarverUSA.com

JET-A FUEL SYSTEM INSTALLATION
GARVER PROJECT NO. 19A10120

I hereby certify that the applicable portions of this project plans and specifications were prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the laws of the State of Arkansas.

SEAL AND SIGNATURE	APPLICABLE DIVISION OR PROJECT RESPONSIBILITY
Jordan Culver, P.E.  Digitally Signed: October 20, 2020	Civil Engineering
Nicholas Holland, P.E.  Digitally Signed: October 20, 2020	Electrical Engineering

GARVER, LLC CERTIFICATE OF AUTHORIZATION:

Expiration Date: 12/31/2020

DELTA REGIONAL AIRPORT AUTHORITY

JET-A FUEL SYSTEM INSTALLATION

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010000 - ADVERTISEMENT FOR BIDS

Sealed bids for **JET-A FUEL SYSTEM INSTALLATION**, to be constructed for DELTA REGIONAL AIRPORT AUTHORITY, Colt, Arkansas, will be received online in the QuestCDN online bid interface until 2:00 p.m., Thursday, November 12, 2020 , at which time the bids shall be publicly opened and read aloud via Microsoft Teams Conference Call. The conference call information will be sent to plan holders upon request.

The project includes, but is not limited to, the construction of a concrete pad and installation of a Jet-A fuel tank, dispensing equipment, and associated electrical work, as shown on the plans and indicated in the specifications.

Digital copies of the bid documents are available at http://Planroom.GarverUSA.com for a fee of $30. These documents may be downloaded by selecting this project from the “Plan Room” link, and by entering Quest Project Number 7369501 on the “Browse Projects” page. For assistance and free membership registration, contact QuestCDN at 952.233.1632 or info@questcdn.com. Addendums to the bid package will be issued through the online Garver Plan Holders List; therefore, all prime bidders shall be responsible for downloading the bid documents from the Garver online plan room in order to be included in the Plan Holders List. Bidders must enter the addenda numbers in the Proposal to verify receipt.

For this project, bids will only be accepted through the QuestCDN online electronic bid interface. To access the electronic bid form, download the project documents, refresh the project’s page on the online plan room, and then click the “on-line bid” button below the project name.

Proposals shall be accompanied by a cashier's or certified check upon a national or state bank in an amount not less than five percent (5%) of the total maximum bid price payable without recourse to the Owner, or a bid bond in the same amount from a reliable surety company, as a guarantee that the Bidder will enter into a contract and execute performance and payment bonds within ten (10) days after notice of award of Contract to him. Such bid guarantee shall be made payable to DELTA REGIONAL AIRPORT AUTHORITY.

The successful bidder must furnish a performance and payment bond upon the form provided in the amount of one hundred per cent (100%) of the contract price from an approved surety company holding a permit from the State of Arkansas to act as surety, or other surety or sureties acceptable to the Owner.

Bidders must be licensed to perform work within the state of Arkansas.

Delta Regional Airport Authority reserves the right to reject any or all bids, to waive irregularities in the bids and bidding deemed to be in the best interests of Delta Regional Airport Authority, and to reject nonconforming, nonresponsive, or conditional bids.

Bids must remain in effect for 60 days after the bid opening date.

Delta Regional Airport Authority

010200 - INSTRUCTIONS TO BIDDERS

1. PREPARATION OF BID

Each bid must be submitted through the QuestCDN online bidding interface. All bids must be signed by an individual authorized to bind the Bidder. All bids must be regular in every respect and no interlineations, excisions, or special conditions shall be made or included in the Proposal by the Bidder.

There are two unit price schedules. Bidders must submit proposals on both schedules. Bidders must quote on all items within a specific schedule; failure to do so may disqualify the bid.

There must be a bid on all items that may appear on the Unit Price Schedule(s). No bid will be considered which covers only a part of the work. A conditional bid will not be considered. Unit prices for the same work shall not vary between bid schedules.

The Proposal and Unit Price Schedule(s), along with other specific section items required in Section 010480 for the sealed bid, shall not be altered and these sections shall be submitted in their entirety. Submission must be at the place, and at or prior to the time specified in the Advertisement for Bids.

A bid that obviously is unbalanced may be rejected.

2. INTERPRETATIONS AND ADDENDA

No oral interpretation will be made to any Bidder as to the meaning of the Contract Documents or any part thereof. Every request for such an interpretation shall be made in writing to Garver, Attn: Jordan Culver, 4701 Northshore Drive, North Little Rock, AR 72118, or by email to jcculver@garverusa.com. Any inquiry received forty-eight (48) hours prior to the opening of bids will be given consideration. Every interpretation made to a Bidder will be in the form of an Addendum to the contract Documents, and when issued, will be sent to the Plan Holders list located in the electronic plan room at least twenty-four (24) hours before bids are opened. It shall be the Bidder's responsibility to make inquiry to the electronic plan room as to the Addenda issued. All such Addenda shall become part of the Contract and all Bidders shall be bound by such Addenda, whether or not received by the Bidders.

3. BIDDING DOCUMENTS

Complete sets of the bidding documents may be obtained as stated in the advertisement. Owner and Engineer, in making copies of these documents available, do so only for the purpose of obtaining bids for the work, and do not authorize or grant a license for any other use. Complete sets of the documents shall be used in preparing bids; neither the Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

4. INSPECTION OF SITE

Each Bidder shall visit the site of the proposed work and fully acquaint himself with the existing conditions there relating to construction and labor, and shall fully inform himself as to the facilities involved, laws and regulations, and the difficulties and restrictions in attending the performance of the Contract.

The Bidder shall thoroughly examine and familiarize himself with the Plans, Technical Specifications, other Contract Documents, and referenced items. The Bidder shall also carefully study all available reports of explorations and tests of subsurface conditions at or adjacent to the Site.

The Contractor, by the execution of the Contract, shall not be relieved of any obligation under it due to his failure to receive or examine any form or legal instrument or to visit the site and acquaint himself with the conditions there existing, and the Owner will be justified in rejecting any claim based on facts regarding which he should have been on notice as a result thereof.

It is the responsibility of each Bidder before submitting a bid to agree that the submission of a bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of the Contract Documents, that without exception the bid and all prices in the bid are premised upon performing and furnishing the work required by the Contract Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Contract Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the work.

5. BID GUARANTY

The bids must be accompanied by a Bid Guaranty, which shall not be less than five percent (5%), of the amount of the bid. At the option of the Bidder, the guaranty may be a certified check, or may be a Bid Bond that is similar to the attached form. No bid will be considered unless it is accompanied by the required guaranty. Certified check must be payable to the order of Delta Regional Airport Authority. Cash deposits will not be accepted. The Bid Guaranty shall insure the execution of the Agreement and the furnishing of the surety bond or bonds by the successful Bidder, all as required by the Contract Documents.

The guaranty of the apparent successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid Guaranty will be released. If the successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 10 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid Guaranty of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.

The Bid Guaranty of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the effective date of the Contract or 61 days after the Bid opening, whereupon Bid Guaranty furnished by such Bidders will be released.
Bid Guaranty of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be returned upon request as soon as feasible after the opening of the bids.

6. COLLUSION; SUBCONTRACTS

A Bidder submitting a Proposal to the Owner for the work contemplated by the Documents on which bidding is based shall not collude with any other person, firm, or corporation in regard to any bid submitted.

Before executing any subcontract, the successful Bidder shall submit Section 010440, LIST OF PROPOSED SUBCONTRACTORS for prior approval of the Owner.

If requested by Owner, the list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, or other individual or entity.

If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent successful Bidder to submit an acceptable substitute, in which case the apparent successful Bidder shall submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Award. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder.

If apparent successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in the General Conditions.

7. STATEMENT OF BIDDER'S QUALIFICATIONS

Each Bidder shall submit, on the form furnished for that purpose (a copy of which is included in the Contract Documents), a statement of the Bidder's qualifications, his experience record in construction of work similar to that which here is involved, and his organization and equipment available for the work contemplated; and when specifically requested by the Owner, a detailed financial statement. The Owner shall have the right to take such steps as it deems necessary to determine the ability of the Bidder to perform his obligations under the Contract and the Bidder shall furnish the Owner all such information and data for this purpose as it may request. The right is reserved to reject any bid where an investigation of the available evidence or information does not satisfy the Owner that the Bidder is qualified to carry out properly the terms of the Contract.

8. BALANCED BIDS; VARIATIONS IN QUANTITIES

The lump sum price and unit price for each of the several items in the Proposal of each Bidder shall be balanced and shall include its pro rata share of overhead.

The Owner shall have the right to increase or decrease the extent of the work, to change the location or gradient, or the dimensions of any part of the work, provided that the length of the improvement is not increased or decreased in excess of twenty-five percent (25%) of the length as determined by the Contract, or that the quantities of work to be done or the materials to be furnished are not increased or decreased in money value in excess of twenty-five percent (25%) of the total contract as determined by the Contract. Such changes shall not be considered as a waiver of any conditions of the Contract nor invalidate any of the provisions thereof. The Contractor shall perform the work as increased or decreased within the qualifying limits named and no allowance will be made for anticipated profits or increases or decreases so incurred. Change in length or in money value, within the twenty-five percent (25%) limits set out, shall not be cause for adjustment of any lump sum or unit price. Changes in items of work covered by unit prices and/or lump sum prices, within the twenty-five percent (25%) limits set out, shall not be cause for adjustment of any other (non-involved) lump sum or unit price.

Increases or decreases in items of work, and the cost thereof, shall be done in accordance with the Section entitled, CHANGES IN THE WORK under GENERAL CONDITIONS.

9. TIME FOR RECEIVING BIDS

A bid received prior to the advertised hour of opening will remain secured until the hour of opening. The QuestCDN online interface clock will decide when the specified time has arrived, and any bid received subsequent to that time will not be accepted.

10. OPENING OF BIDS

At the time and place fixed for the opening of bids, the Owner will cause the bids to be opened and publicly read aloud, irrespective of any irregularities therein. Bidders and other persons properly interested may be present, in person or by representative. Bid qualification may be evaluated before and/or after the bid opening, at the Owner's discretion.

11. WITHDRAWAL OF BIDS

Bids may be withdrawn on written request if the request is received prior to the time fixed for the opening of bids. Bidder may withdraw its Bid within 24 hours after Bids are open and Bid Guaranty will be returned if Bidder files a duly signed written notice with the Owner and promptly demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid. The Bidder shall not be allowed to submit a revised Bid.

12. AWARD OF CONTRACT; REJECTION OF BIDS

The Contract will be awarded to the responsive and responsible Bidder submitting the lowest total bid complying with the conditions of the Advertisement for Bids and other parts of these Contract Documents.

The criteria which will be used to determine the lowest responsive and responsible Bidder are as follows:

12.1 Responsive Bidder: Means a Bidder who has submitted a complete bid which conforms in all material respects and requirements to the Contract Documents.

12.2 Responsible Bidder: Means a Bidder who has the capacity and capability in all respects to perform fully the contract requirements and who has the integrity and reliability to assure good faith performance. Among factors to be considered in determining whether the Bidder meets these standards are the Bidder's financial responsibility, performance responsibility, technical feasibility, his equipment, and his past performance in completing similar work.

A Bidder's failure to submit a complete bid or required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

The Bidder to whom the award is made will be notified at the earliest possible date, but not later than sixty (60) days after the opening of bids. The Owner, however, reserves the right to reject any or all bids and to waive any informality in bids received whenever such rejection or waiver is in its interests. The Owner also reserves the right to consider as unqualified to do the work any Bidder who does not habitually perform with his own forces the major portions of such work as is involved in construction of these improvements.

13. EXECUTION OF CONTRACT; PERFORMANCE AND PAYMENT BOND

Subsequent to the award and within ten (10) days after the prescribed forms are presented for signature, the successful Bidder shall execute and deliver to the Owner a Contract in the form included in the Contract Documents in such number of copies as the Owner may require.

Having satisfied all conditions of award as set forth elsewhere in these Documents, the successful Bidder shall, within the period specified above, furnish a surety bond in a penal sum not less than the amount of the Contract as awarded, as security for the faithful performance of the Contract, and for the payment of all persons, firms or corporations to whom the Contractor may become legally indebted for labor, materials, tools, equipment, or services of any nature, including utility and transportation services employed or used by him in performing the work. Such bond shall be as included in the Contract Documents and shall bear the same date as, or a date subsequent to, that of the Agreement. The current power of attorney for the person who signs for any surety company shall be attached to such bond.

The failure of the successful Bidder to execute such Contract and to supply the required bond or bonds within ten (10) days after the prescribed forms are presented for signature, or within such extended period as the Owner may grant, based upon reasons determined sufficient by the Owner, shall constitute a default, and the Owner may either award the Contract to the next lowest responsible Bidder or re-advertise for bids.

14. BONDS AND INSURANCE

Attention of Bidders is called to Arkansas Code Annotation §§ 22-9-401 et. Seq., which has certain requirements pertaining to Performance Bonds, labor bonds, employer's liability insurance, public liability insurance, workmen's compensation insurance, and property damage insurance.

All companies furnishing Bid Bonds and Performance Bonds shall furnish evidence of being on the U.S. Treasury Department's most current list (Circular 570, as amended) and be authorized to transact business in the State of Arkansas.

15. CONTRACTOR'S LIABILITY INSURANCE REQUIREMENTS

The Bidder shall provide with the Proposal a listing of both automobile and personal liability insurance coverage currently in force, along with a copy of a Certificate of Insurance as verification of that coverage.

In the event the Owner determines that the low Bidder's coverage in force is inadequate, the Owner may require the low Bidder to procure additional coverage in accordance with the requirements as specified herein.

In the event the lower Bidder is unable, after diligent effort, to procure such additional coverage as may be required by the Owner, the Owner may provide such additional coverage, naming the Contractor as insured or, at the option of the Owner, reduce the amount of additional coverage required or waive any requirement for additional coverage.

16. THIRD PARTY COVERAGE

The Contractor shall provide insurance coverage for the Engineer and the Owner as indicated in Section 010800, GENERAL CONDITIONS.

17. SIGNATORY AND CONTRACT SUBMITTALS

The Contract Documents call for all Bidders, and for the awarded Contractor, to complete and/or submit information concerning equal employment opportunity, quality control, labor items, etc. A list of required items to be submitted with each bid is listed in the Bidders Checklist.

The following is a list of completed forms/submittals that the apparent low Bidder will be required to complete before execution and award of the contract:

- Contract (all pages)
- Performance Bond
- Payment Bond
- Certificates of Insurance and Insurance Policies

The following is a list of completed forms/submittals that the awarded Contractor will be required to submit before construction begins:

- Construction Schedule

Additional certifications and submittals will be required for construction materials and other items in the technical specifications.

18. LEGAL QUALIFICATIONS

All Bidders, in order to submit a bonafide Proposal, must comply with the applicable terms of Arkansas Code.

The successful Bidder, if a corporation created under the laws of some state other than the State of Arkansas, will be required to qualify, or to have qualified, with the Secretary of State of Arkansas to do business in the State of Arkansas.

19. MODIFICATION OF BID

No modification of any bid already submitted will be considered unless such modification is received in writing, signed and witnessed by persons authorized to so act on behalf of the bidder, prior to the time set for opening of bids.

END OF INSTRUCTIONS TO BIDDERS

010300 - BID BOND

1. BID DEFAULT

Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Contract required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

This obligation shall be null and void if:

1.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Contract required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

1.2 All Bids are rejected by Owner, or

1.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and consented to by Surety).

2. BOND PAYMENT DUE

Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

3. PROCEEDING REQUIREMENTS

Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed the time required by the Bidding Documents without Surety's written consent.

No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default is received by Bidder and Surety and in no case later than one year after the Bid due date. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

4. STATUTORY REQUIREMENTS

This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

5. BID BOND CERTIFICATE

KNOW ALL MEN BY THESE PRESENTS:

THAT we the undersigned, _____

_____, as PRINCIPAL, and _____

_____, as SURETY, are held and firmly bound unto the Delta Regional Airport Authority, Colt, Arkansas, hereinafter called the OWNER in the penal sum of

_____ Dollars

($_____), lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these Presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT WHEREAS, the Principal has submitted

the accompanying Proposal, dated _____, for

"JET-A FUEL SYSTEM INSTALLATION"

NOW, THEREFORE, if the Principal shall not withdraw said Proposal within sixty (60) days after the opening of same, and shall within ten (10) days after the prescribed forms are presented to him for signature, enter into a written Contract with the Owner in accordance with the Proposal as accepted, and give bond with good and sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment of such Contract, then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above bounded parties have executed this instrument, under their several

seals this _____ day of _____, 20___, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representatives, pursuant to authority of its governing body.

SEAL

_____
Principal

Witness_____ By_____
Signature Signature

Witness_____ By_____
Print Name and Title Print Name and Title

_____

_____
Address

SEAL

_____
Surety

Witness_____ By_____
Signature Attorney-In-Fact - Signature

Witness_____ By_____
Print Name and Title Attorney-In-Fact - Print Name and Title

_____

_____
Address

NOTE: Power-of-attorney for person signing for surety company must be attached to bond.

010400 - PROPOSAL

Place _____

Date _____

Proposal of _____,

a corporation organized and existing under the laws of the State of _____,

or

Proposal of _____,

a partnership consisting of _____

or

Proposal of _____,

an individual doing business as _____,

To: Delta Regional Airport Authority

This bid results from your advertisement for bids for the construction of the **Jet-A Fuel System Installation.**

The undersigned Bidder, having visited the site of the work, having examined the Plans, Specifications, and other Contract Documents including all Addenda, and being familiar with all of the conditions relating to the construction of the proposed project, hereby agrees to comply with all other conditions or requirements set forth in the Plans, Specifications, and other Contract Documents, and further proposes to; furnish all material, supplies, equipment, and appliances; to furnish all labor, tools, equipment and incidentals to complete the work in accordance with the Plans, Specifications, and other Contract Documents at and for the lump sum and unit prices proposed in the attached Unit Price Schedule(s).

The undersigned Bidder agrees to begin work within ten (10) calendar days after the issuance by, or on behalf of, the Owner of a "Work Order" or "Notice to Proceed" and to complete the work within Thirty (30) consecutive calendar days thereafter (except as modified in accordance with the GENERAL CONDITIONS of these Contract Documents). Should the work fail to be completed within the time herein stated, the Contractor shall pay to the Owner, as fixed and agreed liquidated damages, and not as a penalty, the sum, for each day of delay until the work is completed and accepted, as stipulated in GENERAL CONDITIONS of these Contract Documents. It is understood that additional time for the completion of the project is to be allowed only for delays as stipulated in GENERAL CONDITIONS of these Contract Documents.

Bidder acknowledges receipt of the following addendum (addenda):

_____ and _____

_____ and _____

_____ and _____

_____ and _____

The undersigned Bidder agrees that this bid shall be good and shall not be withdrawn for a period of sixty (60) calendar days after the opening thereof. If written notice of the acceptance of this Proposal is mailed, telegraphed, or delivered to the undersigned within sixty (60) days after the opening thereof, or at any time thereafter before this Proposal is withdrawn, the undersigned agrees to execute and deliver an Agreement (Contract) in the prescribed form, and furnish the required Performance and Payment Bond, within ten (10) days after the Agreement is presented to him for signature.

It is understood by the undersigned Bidder that the Owner reserves the right to reject any or all bids.

Accompanying this Proposal as bid security is a certified check/bid bond (*strike one*)

in the amount of _____ Dollars ($_____), being not less than five percent (5%) of the total amount of the bid for the higher of the two schedules. If the undersigned Bidder is the successful Bidder, but fails or refuses to execute the contract and furnish the required bond within the prescribed ten (10) days of the notification of award, then this bid security is to become the property of the Owner as liquidated damages for the delay and additional expense to the Owner caused by such failure or refusal.

BIDDER: *[Indicate correct name of bidding entity]*

_____

By:
[Signature] _____

[Printed name] _____
(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:
[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

_____

_____

Telephone Number: _____

Contact Name and e-mail address: _____

_____

Bidder's License No.: _____

(where applicable)

NOTES: Sign in ink. Do not detach.
Items must be bid upon as specified
in the Unit Price Schedule.

DELTA REGIONAL AIRPORT AUTHORITY
JET-A FUEL SYSTEM INSTALLATION
UNIT PRICES -SCHEDULE 1

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
1	SS-120-3.1	Construction Safety and Security	LS	100%		
2	SS-131-4.1	220/120/75 GPM 12,000 Gallon Jet-A Fuel System Installation	LS	100%		
3	SS-140-5.1	Aggregate Base Course (Class 7)	SY	70		
4	SS-230-5.1	Class S (AE) Concrete	SY	70		
5	SS-280-5.1	Sodding	SY	40		
6	SS-281-5.1	Safety Bollards	EA	17		
7	SS-300-5.1	Lockout/Tagout Procedures	LS	100%		
8	SS-300-5.2	Electrical Fuel Farm Rack Modifications	LS	100%		
9	SS-300-5.3	Electrical Vault Modifications	LS	100%		
10	C-105-6.1	Mobilization (Maximum of 10% of Total Bid)	LS	100%		

Total Bid - Schedule 1 _____

DELTA REGIONAL AIRPORT AUTHORITY
JET-A FUEL SYSTEM INSTALLATION
UNIT PRICES -SCHEDULE 2

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
1	SS-120-3.1	Construction Safety and Security	LS	100%		
2	SS-131-4.2	220/100/60 GPM 10,000 Gallon Jet-A Fuel System Installation	LS	100%		
3	SS-140-5.1	Aggregate Base Course (Class 7)	SY	70		
4	SS-230-5.1	Class S (AE) Concrete	SY	70		
5	SS-280-5.1	Sodding	SY	40		
6	SS-281-5.1	Safety Bollards	EA	17		
7	SS-300-5.1	Lockout/Tagout Procedures	LS	100%		
8	SS-300-5.2	Electrical Fuel Farm Rack Modifications	LS	100%		
9	C-105-6.1	Mobilization (Maximum of 10% of Total Bid)	LS	100%		

Total Bid - Schedule 2 _____

010420 - STATEMENT OF BIDDER'S QUALIFICATIONS

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information he desires.

1. Name of Bidder.

2. Permanent main office address.

3. When organized.

4. If a corporation, where incorporated.

5. How many years have been engaged in the contracting business under your present firm or trade name?

6. Contracts on hand: (Schedule these, showing amount of each contract and the appropriate anticipated dates of completion).

7. General character of work performed by your company.

8. Have you ever failed to complete any work awarded to you?

9. Have you ever defaulted on a Contract?

   If so, where and why?

10. Have you ever been fined or had your license suspended by a Contractor's Licensing Board?

    If so, where and why?

11. List the more important projects recently completed by your company, stating the approximate cost for each, and the month and year completed.

12. List your major equipment available for this Contract.

13. Experience in construction work similar in importance to this project.

14. Background and experience of the principal members of your organization, including the officers.

15. Background and experience of the Master Electrician(s) licensed in the state of Arkansas (issued by the Arkansas Board of Electrical Examiners) who have proper skills in supervising, performing, and maintaining the electrical work.

16. Credit available: $_____.

17. Give Bank reference: _____.

18. Will you, upon request, fill out a detailed financial statement and furnish any other information that may be required by the Owner?

19. The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the Owner, in verification of the recitals comprising this statement of

Bidder's Qualifications.

20. The Bidder shall provide a brief description of any litigation or administrative proceeding of the following types, either pending or concluded within the preceding year, to which the Bidder (and the ultimate controlling person, if different from the Bidder) or any of its directors or executive officers was a party or of which the property of any such person is or was the subject; the names of the parties and the court or agency in which such litigation or proceeding is or was pending shall be given:

    (a) Administrative or judicial proceedings of any state federal agency or authority concerning environmental violations;
    (b) Proceedings which may have a material effect upon the solvency of the ultimate holding company, including but not necessarily limited to, bankruptcy and receivership; and
    (c) Criminal proceedings.

Dated at _____ this _____ day of _____, 20____.

_____
(Name of Bidder)

By _____

Title _____

STATE OF _____)
) SS.
COUNTY OF _____)

_____being duly sworn deposes and says that he is

_____ of _____
(Name of Organization)

and that the answers to the foregoing questions and all statements therein contained are true and correct.
SUBSCRIBED AND SWORN TO BEFORE ME this _____ day of _____
_____, 20____.

_____
(Notary Public)

My Commission Expires:

_____

010440 - LIST OF PROPOSED SUBCONTRACTORS

I, the undersigned General Contractor, hereby certify that proposals from the following Subcontractors were used in the preparation of my bid. I agree that if I am the successful Bidder and if the following subcontracts are approved, I will not enter into contracts with others for these divisions of the work without prior written approval from the Engineer and the Owner.

The Contractor should ensure that DBEs and other small businesses have the opportunity to participate in the performance of the work that is the subject of this solicitation and should take all necessary and reasonable steps for this assurance. The bidder/proposer shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of subcontracts. Firms qualified as a DBE for this project shall be certified by the Arkansas DOT. Firms qualified as a small business enterprise (SBE) shall be certified by the US Small Business Administration or the Arkansas Economic Development Commission.

For Annual Gross Receipts:

- Enter 1 for Less than $1 Million
- Enter 2 for More than $1 Million, Less than $5 Million
- Enter 3 for More than $5 Million, Less than $10 Million
- Enter 4 for More than $10 Million, Less than $15 Million
- Enter 5 for More than $15 Million

Type of Work: .....

Subcontractor's Name:.....

Arkansas License No.: .....

Address: .....

DBE: Yes / No (circle one) Contract Amount: .....

SBE: Yes / No (circle one)

Date Firm Established:.....

Annual Gross Receipts (enter the range only):.....

Type of Work: .....

Subcontractor's Name:.....

Arkansas License No.: .....

Address: .....

DBE: Yes / No (circle one) Contract Amount: .....

SBE: Yes / No (circle one)

Date Firm Established:.....

Annual Gross Receipts (enter the range only):.....

Type of Work: .....

Subcontractor's Name:.....

Arkansas License No.: .....

Address: .....

DBE: Yes / No (circle one) Contract Amount: .....

SBE: Yes / No (circle one)

Date Firm Established: .....

Annual Gross Receipts (enter the range only): .....

Type of Work: .....

Subcontractor's Name: .....

Arkansas License No.: .....

Address: .....

DBE: Yes / No (circle one) Contract Amount: .....

SBE: Yes / No (circle one)

Date Firm Established: .....

Annual Gross Receipts (enter the range only): .....

Bidder (General Contractor): .....

Arkansas License No.: .....

Address: .....

DBE: Yes / No (circle one)

SBE: Yes / No (circle one)

Date Firm Established: .....

Annual Gross Receipts (enter the range only): .....

By: .....*

Title: .....

Percent of Contract to be Completed by DBE: .....

*Signature must be the same as on the Proposal form.

Notes:

(1) General contractor and subcontractors shall have a certificate of license with the proper classification from the State Contractors Licensing Board before his or her bid is submitted.

(2) Certificates of license shall be provided with this form at the time of the bid opening.

010480 - BIDDER'S CHECKLIST OF REQUIRED ITEMS

This Bidder's Checklist is provided to ensure all required forms are completed and returned as part of the bid submission. All forms must be included as indicated for a bid to be considered a complete, responsive bid. Appropriate signatures and date are required on each document. If an item is missing, the bid may be declared unresponsive and therefore rejected. **This sheet will serve as the cover sheet for the bid submission.**

Spec. Section	Description	Completed*
	Acknowledgement of All Addenda	☐
	Bid contains the following forms:	
010200	1. Insurance Coverages (Current Auto and Liability Insurance)	☐
010300	2. Bid Bond	☐
010400	3. Proposal (including Unit Price Schedule – if applicable)	☐
010420	4. Statement of Bidder's Qualifications	☐
010440	5. List of Proposed Subcontractors	☐

*Check when filled out, signed, and included with submission of bid packet.

Within three (3) days after Bid Opening:
Bidder acknowledges to provide within three (3) days after Bid Opening (Low Bidder and Second Low Bidder Only):

1. Bidder's Qualifications of Subcontractor (if requested)

Within ten (10) days after Notice of Award:
Bidder acknowledges that within ten (10) days after Notice of Award, Successful Contractor is required to complete the following before execution and award of the contract:

010600	1. Contract (all pages and supporting documents)
010700	2. Performance Bond
010720	3. Payment Bond
	4. Completed Certificates of Insurance

Prior to Construction:
Contractor required to submit Construction Schedule before construction begins.

Seal (if incorporated)

Bidder Name: _____

Address: _____

City, State, Zip Code: _____

Contractor Number: _____

Contact Name: _____

Title: _____

Contact Number: _____

Contact Email: _____

Signature of Authorized Agent for Bidder: _____

Date: _____

010600 - CONTRACT

THIS AGREEMENT made this _____ day of _____, _____, by and between _____ a Corporation organized and existing under the laws of the State of _____ hereinafter called the "Contractor", and Delta Regional Airport Authority, hereinafter called the "Owner".

W I T N E S S E T H:

That the Contractor and the Owner for the consideration stated herein mutually agree as follows:

ARTICLE 1. Statement of Work. The Contractor shall furnish all supervision, technical personnel, labor, materials, machinery, tools, equipment, incidentals and services, including utility and transportation services and perform and complete all work required for the construction of **Jet-A Fuel System Installation** in strict accordance with the Contract Documents.

ARTICLE 2. The Contract Price. The Owner will pay the Contractor, because of his performance of the Contract, for the total quantities of work performed at the lump sum and unit prices stipulated in the Proposal for the Schedule that is awarded subject to additions, and deductions as provided in the Section entitled "CHANGES IN THE WORK" under GENERAL CONDITIONS.

ARTICLE 3. Contract Time. The Contractor agrees to begin work within ten (10) calendar days after issuance by the Owner of a "Work Order" or "Notice to Proceed" and to complete the work within Thirty (30) consecutive calendar days thereafter (except as modified in accordance with the GENERAL CONDITIONS of these Contract Documents). If the Contractor shall fail to complete the work within the time specified, he and his Surety shall be liable for payment to the Owner, as liquidated damages ascertained and agreed, and not in the nature of a penalty, the amount specified in GENERAL CONDITIONS of these Contract Documents for each day of delay. To the extent sufficient in amount, liquidated damages shall be deducted from the payments to be made under this Contract.

ARTICLE 4. Contract. The executed Contract Documents shall consist of the following:

a. Executed Contract
b. Addenda (if any)
c. Advertisement for Bids
d. Instructions to Bidders
e. Proposal
f. Statement of Bidder's Qualifications
g. List of Proposed Subcontractors
h. Performance and Payment Bonds
i. General Conditions
j. Special Conditions
k. Technical Specifications
l. Drawings
m. Certificates of Insurance and Insurance Policies

This Contract together with other Documents enumerated in this Article 4, which said other Documents are as fully a part of the Contract Documents as if hereto attached or herein repeated, form the Contract between the parties hereto. In the event that any provisions in any component part of this Contract conflicts with any provision of any other component part, the conflict shall be resolved by the Engineer whose decision shall be final.

ARTICLE 5. Surety. The Surety on the Performance and Payment Bonds shall be a surety company of financial resources satisfactory to the Owner, authorized to do business in the State of the Project, and shall comply with applicable state laws.

IN WITNESS WHEREOF, the parties hereto have caused this Contract to be executed in four (4) counterparts, each of which shall be considered an original on the day and year first written.

_____
(Contractor)

ATTEST:_____ By_____

Title:_____

_____
(Street)

_____
(City)

_____
(Owner)

ATTEST:_____ By _____

_____Title:_____
(Print the names underneath all signatures)

010700 - PERFORMANCE BOND

1. NOTIFICATION

The Surety's obligation under this Bond shall arise after:

1.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Default. Such notice shall indicate that the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. Unless the Owner agrees otherwise, any conference requested under this Paragraph shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

1.2 The Owner declares a Default, terminates the Construction Contract and notifies the Surety.

Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Failure on the part of the Owner to comply with the notice requirement shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations.

The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

2. SURETY'S ACTIONS

When the Owner has satisfied the conditions of Paragraph 1, the Surety shall promptly and at the Surety's expense take one of the following actions:

2.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

2.2 Undertake to perform and complete the Construction Contract itself, through its mutually acceptable agents or independent contractors;

2.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 3 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

2.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

2.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

2.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

3. SURETY OBLIGATIONS

If the Surety elects to act under Paragraph 2.1, 2.2, or 2.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

3.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

3.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 2; and

3.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

4. SURETY DEFAULT

If the Surety does not proceed as provided in Paragraph 2 with reasonable promptness, the Surety shall be deemed to be in default on this Bond ten days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 2.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

5. PROCEEDINGS

Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

6. STATUTORY REQUIREMENTS

When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted hereto and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

7. PERFORMANCE BOND CERTIFICATE

KNOW ALL MEN BY THESE PRESENTS:

THAT WE, _____

as Principal, hereinafter called "Principal", and _____

_____, State of _____, as

Surety, hereinafter called "Surety", are held and firmly bound unto the Delta Regional Airport Authority, Colt, Arkansas, as Obligee, hereinafter called "Owner", in the amount of:

_____

_____ Dollars ($_____),
in lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

WHEREAS, the Principal entered into a Contract with the Owner by written agreement dated the ____ day of _____, 20___, a copy of which is attached hereto and made a part hereof, hereinafter referred to as the Contract,

"**Jet-A Fuel System Installation**"

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

Any alterations which may be made in the terms of the Contract, or in the work to be done under it, or the giving by the Owner of an extension of time for the performance of the Contract, or any other forbearance on the part either of the Owner or the Principal to the other shall not release in any way the Principal and Surety, or either of these, their heirs, personal representatives, successors, or assigns from their liability hereunder, notice to the Surety of any alteration, extension or forbearance hereby being waived.

In no event shall the aggregate liability of the Surety exceed the sum set out herein.

This bond is executed pursuant to the terms of Arkansas Code Annotation §§ 18-44-501 et. Seq., as amended.

Executed on this _____ day of _____, 20___.

SEAL

_____
Principal

By _____
Signature

By _____
Print Name and Title

SEAL

_____
Surety

By _____
Attorney-In-Fact - Signature

By _____
Attorney-In-Fact - Print Name and Title

Surety Address for giving Notices: _____

_____

NOTES: Attach Power of Attorney.

Date of Bond must not precede date of Contract.

A copy of this Bond must be filed with the Circuit Clerk in each county wherein the work is to be performed.

010720 - PAYMENT BOND

1. NOTIFICATION

The Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in the Bond Certificate) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.

The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations. When the Owner has made notification, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.

The Surety's obligations to a Claimant under this Bond shall arise after Claimants have furnished a written notice of non-payment to the Contractor, Surety, or Owner, stating with substantial accuracy the amount claimed and the name of the party to whom the materials, labor, or equipment was furnished or supplied. It is sufficient if a notice of non-payment is given to the Contractor by the Owner.

2. SURETY'S OBLIGATION

When a Claimant has satisfied the conditions of Paragraph 1, the Surety shall promptly and at the Surety's expense take the following actions:

2.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

2.2 Pay or arrange for payment of any undisputed amounts.

2.3 The Surety's failure to discharge its obligations under Paragraph 2.1 or 2.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 2.1 or 2.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

3. DEDICATION OF BOND FUNDS

Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

4. OTHER OBLIGATIONS

The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make

payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.

5. PROCEEDINGS

No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

6. STATUTORY REQUIREMENTS

When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted hereto and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

7. PAYMENT BOND CERTIFICATE

KNOW ALL MEN BY THESE PRESENTS:

THAT WE, _____

as Principal, hereinafter called "Principal", and _____

_____, State of _____, as

Surety, hereinafter called "Surety", are held and firmly bound unto the Delta Regional Airport Authority, Colt, Arkansas, as Obligee, hereinafter called "Owner", in the amount of:

_____

_____ Dollars ($_____),
in lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

WHEREAS, the Principal entered into a Contract with the Owner by written agreement dated the ____ day of _____, 20___, a copy of which is attached hereto and made a part hereof, hereinafter referred to as the Contract,

"**Jet-A Fuel System Installation**"

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such work, and all insurance premiums on said work, and for all labor performed in such work, whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

Any alterations which may be made in the terms of the Contract, or in the work to be done under it, or the giving by the Owner of an extension of time for the performance of the Contract, or any other forbearance on the part either of the Owner or the Principal to the other shall not release in any way the Principal and Surety, or either of these, their heirs, personal representatives, successors, or assigns from their liability hereunder, notice to the Surety of any alteration, extension or forbearance hereby being waived.

In no event shall the aggregate liability of the Surety exceed the sum set out herein.

This bond is executed pursuant to the terms of Arkansas Code Annotation §§ 18-44-501 et. Seq., as amended.

Executed on this _____ day of _____, 20___.

SEAL

_____
Principal

By _____
Signature

By _____
Print Name and Title

SEAL

_____
Surety

By _____
Attorney-In-Fact - Signature

By _____
Attorney-In-Fact - Print Name and Title

Surety Address for giving Notices: _____

_____

NOTES: Attach Power of Attorney.

Date of Bond must not precede date of Contract.

A copy of this Bond must be filed with the Circuit Clerk in each county wherein the work is to be performed.

GENERAL PROVISIONS

SECTION 10 DEFINITION OF TERMS

When 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 defined as follows:

Paragraph Number	Term	Definition
10-01	**AASHTO**	The American Association of State Highway and Transportation Officials.
10-02	**Access Road**	The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public roadway.
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**	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; airport buildings and facilities located in any of these areas, and a heliport.
10-05	**Airport Improvement Program (AIP)**	A grant-in-aid program, administered by the Federal Aviation Administration (FAA).
10-06	**Air Operations Area (AOA)**	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.
10-07	**Apron**	Area where aircraft are parked, unloaded or loaded, fueled and/or serviced.
10-08	**ASTM International (ASTM)**	Formerly known as the American Society for Testing and Materials (ASTM).
10-09	**Award**	The Owner's notice to the successful bidder of the acceptance of the submitted bid.
10-10	**Bidder**	Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.
10-11	**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.
10-12	**Calendar Day**	Every day shown on the calendar.

Paragraph Number	Term	Definition
10-13	**Certificate of Analysis (COA)**	The COA is the manufacturer's Certificate of Compliance (COC) including all applicable test results required by the specifications.
10-14	**Certificate of Compliance (COC)**	The manufacturer's certification stating that materials or assemblies furnished fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer's authorized representative.
10-15	**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 work within the scope of the contract and necessary to complete the project.
10-16	**Contract**	A written agreement between the Owner and the Contractor that establishes the obligations of the parties including but not limited to performance of work, furnishing of labor, equipment and materials and the basis of payment. The awarded contract includes but may not be limited to: Advertisement, Contract form, Proposal, Performance bond, payment bond, General provisions, certifications and representations, Technical Specifications, Plans, Supplemental Provisions, standards incorporated by reference and issued addenda.
10-17	**Contract Item (Pay Item)**	A specific unit of work for which a price is provided in the contract.
10-18	**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.
10-19	**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.
10-20	**Contractors Quality Control (QC) Facilities**	The Contractor's QC facilities in accordance with the Contractor Quality Control Program (CQCP).
10-21	**Contractor Quality Control Program (CQCP)**	Details the methods and procedures that will be taken to assure that all materials and completed construction required by the contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors.
10-22	**Control Strip**	A demonstration by the Contractor that the materials, equipment, and construction processes results in a product meeting the requirements of the specification.

Paragraph Number	Term	Definition
10-23	**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.
10-24	**Drainage System**	The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.
10-25	**Engineer**	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for engineering, inspection, and/or observation of the contract work and acting directly or through an authorized representative.
10-26	**Equipment**	All machinery, together with the necessary supplies for upkeep and maintenance; and all tools and apparatus necessary for the proper construction and acceptable completion of the work.
10-27	**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 Owner's Engineer or Resident Project Representative (RPR) to be necessary to complete the work within the intended scope of the contract as previously modified.
10-28	**FAA**	The Federal Aviation Administration. When used to designate a person, FAA shall mean the Administrator or their duly authorized representative.
10-29	**Federal Specifications**	The federal specifications and standards, commercial item descriptions, and supplements, amendments, and indices prepared and issued by the General Services Administration.
10-30	**Force Account**	**a.** Contract Force Account - A method of payment that addresses extra work performed by the Contractor on a time and material basis. **b.** Owner Force Account - Work performed for the project by the Owner's employees.
10-31	**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 and/or Resident Project Representative (RPR) 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 and/or RPR, subject in each case to the final determination of the Owner.

Paragraph Number	Term	Definition
		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.
10-32	**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.
10-33	**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.
10-34	**Materials**	Any substance specified for use in the construction of the contract work.
10-35	**Modification of Standards (MOS)**	Any deviation from standard specifications applicable to material and construction methods in accordance with FAA Order 5300.1.
10-36	**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.
10-37	**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. The Owner for this project is the Delta Regional Airport Authority.
10-38	**Passenger Facility Charge (PFC)**	Per 14 Code of Federal Regulations (CFR) Part 158 and 49 United States Code (USC) § 40117, a PFC is a charge imposed by a public agency on passengers enplaned at a commercial service airport it controls.
10-39	**Pavement Structure**	The combined surface course, base course(s), and subbase course(s), if any, considered as a single unit.
10-40	**Payment bond**	The approved form of security furnished by the Contractor and their own 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.
10-41	**Performance bond**	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.

Paragraph Number	Term	Definition
10-42	**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. Plans may also be referred to as 'contract drawings.'
10-43	**Project**	The agreed scope of work for accomplishing specific airport development with respect to a particular airport.
10-44	**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.
10-45	**Proposal guaranty**	The security furnished with a proposal to guarantee that the bidder will enter into a contract if their own proposal is accepted by the Owner.
10-46	**Quality Assurance (QA)**	Owner's responsibility to assure that construction work completed complies with specifications for payment.
10-47	**Quality Control (QC)**	Contractor's responsibility to control material(s) and construction processes to complete construction in accordance with project specifications.
10-48	**Quality Assurance (QA) Inspector**	An authorized representative of the Engineer and/or Resident Project Representative (RPR) assigned to make all necessary inspections, observations, tests, and/or observation of tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.
10-49	**Quality Assurance (QA) Laboratory**	The official quality assurance testing laboratories of the Owner or such other laboratories as may be designated by the Engineer or RPR. May also be referred to as Engineer's, Owner's, or QA Laboratory.
10-50	**Resident Project Representative (RPR)**	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for all necessary inspections, observations, tests, and/or observations of tests of the contract work performed or being performed, or of the materials furnished or being furnished by the Contractor, and acting directly or through an authorized representative.
10-51	**Runway**	The area on the airport prepared for the landing and takeoff of aircraft.
10-52	**Runway Safety Area (RSA)**	A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to aircraft. See the construction safety and phasing plan (CSPP) for limits of the RSA.
10-53	**Safety Plan Compliance Document (SPCD)**	Details how the Contractor will comply with the CSPP.

Paragraph Number	Term	Definition
10-54	**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.
10-55	**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.
10-56	**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; navigational aids; buildings; vaults; and, other manmade features of the airport that may be encountered in the work and not otherwise classified herein.
10-57	**Subgrade**	The soil that forms the pavement foundation.
10-58	**Superintendent**	The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the RPR, and who shall supervise and direct the construction.
10-59	**Supplemental Agreement**	A written agreement between the Contractor and the Owner that establishes the basis of payment and contract time adjustment, if any, for the work affected by the supplemental agreement. A supplemental agreement is required if: (1) in scope work would increase or decrease the total amount of the awarded contract by more than 25%: (2) in scope work would increase or decrease the total of any major contract item by more than 25%; (3) work that is not within the scope of the originally awarded contract; or (4) adding or deleting of a major contract item.
10-60	**Surety**	The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the Owner by the Contractor.
10-61	**Taxilane**	A taxiway designed for low speed movement of aircraft between aircraft parking areas and terminal areas.
10-62	**Taxiway**	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.
10-63	**Taxiway/Taxilane Safety Area (TSA)**	A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft. See the construction safety and phasing plan (CSPP) for limits of the TSA.

Paragraph Number	Term	Definition
10-64	**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.
10-65	**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.
10-66	**Owner Defined terms**	

END OF SECTION 10

SECTION 20 PROPOSAL REQUIREMENTS AND CONDITIONS

20-01 Advertisement (Notice to Bidders). *See Page 010000-1*

20-02 Qualification of bidders. Each bidder shall submit evidence of competency and evidence of financial responsibility to perform the work to the Owner at the time of bid opening.

Evidence of competency, unless otherwise specified, shall consist of statements covering the bidder's past experience on similar work, and a list of equipment and a list of key personnel that would be available for the work.

Each bidder shall furnish the Owner satisfactory evidence of their financial responsibility. 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 their 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 they are prequalified with the State Highway Division and are on the current "bidder's list" of the state in which the proposed work is located. Evidence of State Highway Division prequalification may be submitted as evidence of financial responsibility in lieu of the certified statements or reports specified above.

20-03 Contents of proposal forms. The Owner's proposal forms state the location and description of the proposed construction; the place, date, and time of opening of the proposals; and the estimated quantities of the various items of work to be performed and materials to be furnished for which unit bid prices are asked. The proposal form states the time in which the work must be completed, and the amount of the proposal guaranty that must accompany the proposal. The Owner will accept only those Proposals properly executed on physical forms or electronic forms provided by the Owner. Bidder actions that may cause the Owner to deem a proposal irregular are given in paragraph 20-09 *Irregular proposals*.

Mobilization is limited to 10 percent of the total project cost.

20-04 Issuance of proposal forms. The Owner reserves the right to refuse to issue a proposal form to a prospective bidder if the bidder is 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 provided in the Section 40, paragraph 40-02, Alteration of Work and Quantities, 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 to the character, quality, and quantities of work to be performed, materials to be furnished, and 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 to the conditions to be encountered in performing the work and the requirements of the proposed contract, plans, and specifications.

20-07 Preparation of proposal. The bidder shall submit their proposal on the forms furnished by the Owner. All blank spaces in the proposal forms, unless explicitly stated otherwise, must be correctly filled in where indicated for each and every item for which a quantity is given. *If so requested,* the bidder shall state the price (written in ink or typed) both in words and numerals which they propose 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 correctly sign the proposal in ink. If the proposal is made by an individual, their 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 where 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 their 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 Owner's invitation for bid. It is the Owner'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 2 CFR § 200.318(h). 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.

f. If the applicable Disadvantaged Business Enterprise information is incomplete.

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 bid bond, certified check, or other specified acceptable collateral, in the amount specified in the proposal form. Such bond, check, or collateral, shall be made payable to the Owner.

20-11 Delivery of proposal. Each proposal submitted shall be submitted through the QuestCDN online bidding interface. 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 by mail or by 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 paragraph 20-04, *Issuance of Proposal Forms,* of this section.

20-15 Discrepancies and Omissions. A Bidder who discovers discrepancies or omissions with the project bid documents shall immediately notify the Owner's Engineer of the matter. A bidder that has doubt as to the true meaning of a project requirement may submit to the Owner's Engineer a written request for interpretation no later than 7 days prior to bid opening.

Any interpretation of the project bid documents by the Owner's Engineer will be by written addendum issued by the Owner. The Owner will not consider any instructions, clarifications or interpretations of the bidding documents in any manner other than written addendum.

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 bid 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 Section 20, paragraph 20-09, *Irregular Proposals*.

b. If the bidder is disqualified for any of the reasons specified Section 20, paragraph 20-14, *Disqualification of Bidders*.

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 ~~[ ]~~ ~~calendar days of the date specified for publicly opening proposals~~ *the time referenced in the Advertisement and the Proposal,* unless otherwise specified herein.

If the Owner elects to proceed with an award of contract, the Owner will make award to the responsible bidder whose bid, conforming with all the material terms and conditions of the bid documents, is the lowest in price.

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 paragraph 30-07 *Approval of Contract*.

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 paragraph 30-01, *Consideration of Proposals.* 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 paragraph 30-05, *Requirements of Contract Bonds.*

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 paragraph 30-05, *Requirements of Contract Bonds,* of this section, within *the time specified in the proposal.* ~~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 period specified in paragraph 30-06, *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 liquidated 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 the right to make such changes in quantities and work as may be necessary or desirable to complete, in a satisfactory manner, the original intended work. Unless otherwise specified in the Contract, the Owner's Engineer or RPR shall be and is hereby authorized to make, in writing, such in-scope alterations in the work and variation of quantities as may be necessary to complete the work, provided such action does not represent a significant change in the character of the work.

For purpose of this section, a significant change in character of work means: any change that is outside the current contract scope of work; any change (increase or decrease) in the total contract cost by more than 25%; or any change in the total cost of a major contract item by more than 25%.

Work alterations and quantity variances that do not meet the definition of significant change in character of work shall not invalidate the contract nor release the surety. Contractor agrees to accept payment for such work alterations and quantity variances in accordance with Section 90, paragraph 90-03, *Compensation for Altered Quantities*.

Should the value of altered work or quantity variance meet the criteria for significant change in character of work, such altered work and quantity variance shall be covered by a supplemental agreement. Supplemental agreements shall also require consent of the Contractor's surety and separate performance and payment bonds. 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.

40-03 Omitted items. The Owner, the Owner's Engineer or the RPR may provide written notice to the Contractor to omit from the work any contract item that does not meet the definition of major contract item. 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 Section 90, paragraph 90-04, *Payment for Omitted Items*.

40-04 Extra work. Should acceptable completion of the contract require the Contractor to perform an item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, Owner may issue a Change Order to cover the necessary extra work. Change orders for 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 RPR's opinion, is necessary for completion of the extra work.

When determined by the RPR to be in the Owner's best interest, the RPR may order the Contractor to proceed with extra work as provided in Section 90, paragraph 90-05, *Payment for Extra Work*. 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 Section 10, paragraph 10-59, *Supplemental Agreement*.

If extra work is essential to maintaining the project critical path, RPR may order the Contractor to commence the extra work under a Time and Material contract method. Once sufficient detail is available to establish the level of effort necessary for the extra work, the Owner shall initiate a change order or supplemental agreement to cover the extra work.

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. The Contractor shall maintain traffic in the manner detailed in the Construction Safety and Phasing Plan (CSPP).

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 their own operations and the operations of all subcontractors as specified in Section 80, paragraph 80-04, *Limitation of Operations*. 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 Section 70, paragraph 70-15, *Contractor's Responsibility for Utility Service and Facilities of Others*.

b. With respect to their 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 in accordance with the construction safety and phasing plan (CSPP) and the safety plan compliance document (SPCD).

c. When the contract requires the maintenance of 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 the road, street, or highway open to all traffic and shall provide maintenance as may be required to accommodate traffic. The Contractor, at their expense, shall be responsible for the repair to equal or better than preconstruction conditions 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 Resident Project Representative (RPR) shall be notified prior to disturbing such structure. The disposition of existing structures so encountered shall be immediately determined by the RPR in accordance with the provisions of the contract.

Except as provided in Section 40, paragraph 40-07, *Rights in and Use of Materials Found in the Work*, 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.

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 embankment, the Contractor may at their own option either:

a. Use such material in another contract item, providing such use is approved by the RPR and is in conformance with the contract specifications applicable to such use; or,

b. Remove such material from the site, upon written approval of the RPR; 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 RPR's approval in advance of such use.

Should the RPR 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 their 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 RPR 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 their own 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 the property Owner.

END OF SECTION 40

SECTION 50 CONTROL OF WORK

50-01 Authority of the Resident Project Representative (RPR). The RPR has final authority regarding the interpretation of project specification requirements. The RPR shall determine acceptability of the quality of materials furnished, method of performance of work performed, and the manner and rate of performance of the work. The RPR does not have the authority to accept work that does not conform to 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 RPR 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 their opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the Owner, the RPR will advise the Owner of their determination that the affected work be accepted and remain in place. The RPR 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. Changes in the contract price must be covered by contract change order or supplemental agreement as applicable.

If the RPR 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 RPR's written orders.

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 RPR'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 RPR's opinion, such compliance is essential to provide an acceptable finished portion of the work.

The term "reasonably close conformity" is also intended to provide the RPR with the authority, after consultation with the Sponsor and FAA, to use sound engineering judgment in their determinations to accept work that is not in strict conformity, but will provide a finished product equal to or better than that required by the requirements of the contract, plans and specifications.

The RPR 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. If electronic files are provided and used on the project and there is a conflict between the electronic files and hard copy plans, the hard copy plans shall govern. 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 RPR for an interpretation and decision, and such decision shall be final.

The Contractor shall not take advantage of any apparent error or omission on the plans or specifications. In the event the Contractor discovers any apparent error or discrepancy, Contractor shall immediately notify the Owner or the designated representative in writing requesting their written interpretation and decision.

50-04 List of Special Provisions. *See Special Provisions (Page SP-1)*

50-05 Cooperation of Contractor. The Contractor shall be supplied with three hard copies or an electronic PDF of the plans and specifications. The Contractor shall have available on the construction site at all times one hardcopy each of the plans and specifications. Additional hard 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 RPR and their 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 their 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 RPR or their authorized representative.

50-06 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 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 their own contract and shall protect and hold 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 their work and shall place and dispose of the materials being used to not interfere with the operations of the other Contractors within the limits of the same project. The Contractor shall join their work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

50-07 Construction layout and stakes. The Engineer/RPR shall establish necessary horizontal and vertical control. The establishment of Survey Control and/or reestablishment of survey control shall be by a State Licensed Land Surveyor. Contractor is responsible for preserving integrity of horizontal and vertical controls established by Engineer/RPR. In case of negligence on the part of the Contractor or their employees, resulting in the destruction of any horizontal and vertical control, the resulting costs will be deducted as a liquidated damage against the Contractor.

Prior to the start of construction, the Contractor will check all control points for horizontal and vertical accuracy and certify in writing to the RPR that the Contractor concurs with survey control established for the project. All lines, grades and measurements from control points necessary for the proper execution and control of the work on this project will be provided to the RPR. The Contractor is responsible to establish all layout required for the construction of the project.

Copies of survey notes will be provided to the RPR for each area of construction and for each placement of material as specified to allow the RPR to make periodic checks for conformance with plan grades, alignments and grade tolerances required by the applicable material specifications. Surveys will be provided to the RPR prior to commencing work items that cover or disturb the survey staking. Survey(s) and notes shall be provided in the following format(s): AutoCAD Civil 3D

Laser, GPS, String line, or other automatic control shall be checked with temporary control as necessary. 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.

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

QA Inspectors are authorized to notify the Contractor or their 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 RPR 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 RPR 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 RPR 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 work 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.

Provide advance written notice to the RPR of work the Contractor plans to perform each week and each day. Any work done or materials used without written notice and allowing opportunity for inspection by the RPR may be ordered removed and replaced at the Contractor's expense.

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 RPR as provided in paragraph 50-02, *Conformity with Plans and Specifications*.

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 Section 70, paragraph 70-14, *Contractor's Responsibility for Work*.

No removal work made under provision of this paragraph shall be done without lines and grades having been established by the RPR. Work done contrary to the instructions of the RPR, work done beyond the lines shown on the plans or as established by the RPR, 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 RPR made under the provisions of this subsection, the RPR will have authority to cause unacceptable work to be remedied or removed and replaced; and unauthorized work to be removed and recover the resulting costs as a liquidated damage against 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, at their own expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel.

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 paragraph 50-12, *Maintenance during Construction*, the RPR 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 RPR'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 recovered as a liquidated damage against 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 RPR to make final inspection of that unit. If the RPR finds upon inspection that the unit has been satisfactorily completed in compliance with the contract, the RPR 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 RPR 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 RPR 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 RPR will notify the Contractor and the Contractor shall correct the unsatisfactory work. 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 RPR 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 RPR in writing of their 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 RPR 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 RPR 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 RPR 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 documentation to the RPR as to the origin, composition, and manufacture of all materials to be used in the work. Documentation shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.

At the RPR's option, materials may be approved at the source of supply before delivery. 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 meets the requirements of the specifications; and is listed in AC 150/5345-53, *Airport Lighting Equipment Certification Program* and *Addendum*, that is in effect on the date of advertisement.

60-02 Samples, tests, and cited specifications. All materials used in the work shall be inspected, tested, and approved by the RPR before incorporation in the work unless otherwise designated. Any work in which untested materials are used without approval or written permission of the RPR 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 RPR, shall be removed at the Contractor's expense.

Unless otherwise designated, quality assurance tests will be made by and at the expense of the Owner 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.

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. Unless otherwise designated, samples for quality assurance will be taken by a qualified representative of the RPR. 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 RPR.

A copy of all Contractor QC test data shall be provided to the RPR 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 RPR 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/analysis (COC/COA). The RPR may permit the use, prior to sampling and testing, of certain materials or assemblies when accompanied by manufacturer's COC 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. The COA is the manufacturer's COC and includes all applicable test results.

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 RPR.

When a material or assembly is specified by "brand name or equal" and the Contractor elects to furnish the specified "or equal," 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.

The RPR shall be the sole judge as to whether the proposed “or equal” is suitable for use in the work.

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

60-04 Plant inspection. The RPR or their 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 RPR conduct plant inspections, the following conditions shall exist:

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

b. The RPR 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 RPR, the Contractor shall arrange for adequate office or working space that may be reasonably needed for conducting plant inspections. Place office or working space in a convenient location 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 RPR 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/ Resident Project Representative (RPR) field office. *See Section C-105.*

60-06 Storage of materials. Materials shall be stored 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 RPR. 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 and/or CSPP, the storage of materials and the location of the Contractor’s plant and parked equipment or vehicles shall be as directed by the RPR. 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 RPR 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 their 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 RPR.

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 RPR 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 their 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, such authorized work (by others) must be shown on the plans and is indicated as follows:

Owner	Contact	Phone Number
Delta Regional Airport Authority	Shannon Hobbs	870-633-6083

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 RPR.

Should the Owner of public or private utility service, FAA, or NOAA facility, or a utility service of another 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 RPR, 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 Participation. The United States Government has agreed to reimburse the Owner for some portion of the contract costs. The contract work is subject to the inspection and approval of duly authorized representatives of the FAA Administrator. No requirement of this contract shall be construed as making the United States 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's worksite and facilities shall comply with applicable federal, state, and local requirements for health, safety and sanitary provisions.

70-07 Public convenience and safety. The Contractor shall control their operations and those of their 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 their own operations and those of their own subcontractors and all suppliers in accordance with Section 40, paragraph 40-05, *Maintenance of Traffic,* and shall limit such operations for the convenience and safety of the traveling public as specified in Section 80, paragraph 80-04, *Limitation of Operations*.

The Contractor shall remove or control debris and rubbish resulting from its work operations at frequent intervals, and upon the order of the RPR. If the RPR determines the existence of Contractor debris in the work site represents a hazard to airport operations and the Contractor is unable to respond in a prompt and reasonable manner, the RPR reserves the right to assign the task of debris removal to a third party and recover the resulting costs as a liquidated damage against the Contractor.

70-08 Construction Safety and Phasing Plan (CSPP). The Contractor shall complete the work in accordance with the approved Construction Safety and Phasing Plan (CSPP) developed in accordance with AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP is on sheet(s) G-301 of the project plans.

70-09 Use of explosives. The use of explosives is not permitted on this project.

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/RPR 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 their 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 hold harmless the Engineer/RPR and the Owner and their officers, agents, 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 their own 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, their own 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. If it is 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 must be specified below and indicated on the approved Construction Safety and Phasing Plan (CSPP) and the project plans. When so specified, the Contractor shall complete such portions of the work on or before the date specified or as otherwise specified.

Detailed phasing information is provided in the Construction Safety and Phasing Plan.

Upon completion of any portion of work listed above, such portion shall be accepted by the Owner in accordance with Section 50, paragraph 50-14, *Partial Acceptance*.

No portion of the work may be opened by the Contractor until directed by the Owner in writing. Should it become necessary to open a portion of the work to traffic on a temporary or intermittent basis, such openings shall be made when, in the opinion of the RPR, 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 their expense.

The Contractor shall make their 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.

The Contractor must conform to safety standards contained AC 150/5370-2 and the approved CSPP.

Contractor shall refer to the plans, specifications, and the approved CSPP to identify barricade requirements, temporary and/or permanent markings, airfield lighting, guidance signs and other safety requirements prior to opening up sections of work to traffic.

70-14 Contractor's responsibility for work. Until the RPR's final written acceptance of the entire completed work, excepting only those portions of the work accepted in accordance with Section 50, paragraph 50-14, *Partial Acceptance*, 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 their own 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 paragraph 70-04, *Restoration of Surfaces Disturbed by Others*, 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/or in the contract documents.

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 their plan of operations. Such notification shall be in writing addressed to "The Person to Contact" as provided in this paragraph and paragraph 70-04, *Restoration of Surfaces Disturbed By Others*. A copy of each notification shall be given to the RPR.

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 RPR.

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 (1 m) 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 RPR 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 RPR 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 their own 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, RPR, their 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 their surety, or both, such overpayment as may be sustained, or by failure on the part of the Contractor to fulfill their 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, asphalts, 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 their 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 RPR. The RPR 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 Section 40, paragraph 40-04, *Extra Work,* and Section 90, paragraph 90-05, *Payment for Extra Work*. If appropriate, the contract change order or supplemental agreement shall include an extension of contract time in accordance with Section 80, paragraph 80-07, *Determination and Extension of Contract Time*.

70-21 Insurance Requirements. See Special Provisions

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 Resident Project Representative (RPR).

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 their 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.

If requested, the Contractor shall provide copies of all subcontracts to the RPR 14 days prior to being utilized on the project. As a minimum, the information shall include the following:

- Subcontractor's legal company name.
- Subcontractor's legal company address, including County name.
- Principal contact person's name, telephone and fax number.
- Complete narrative description, and dollar value of the work to be performed by the subcontractor.
- Copies of required insurance certificates in accordance with the specifications.
- Minority/ non-minority status.

80-02 Notice to proceed (NTP). The Owners notice to proceed will state the date on which contract time commences. The Contractor is expected to commence project operations within 10 days of the NTP date. The Contractor shall notify the RPR at least 24 hours in advance of the time contract operations begins. The Contractor shall not commence any actual operations 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 coordinated construction schedule showing all work activities for the RPR's review and acceptance at least 10 days prior to the start of work *and in advance of the preconstruction meeting*. The Contractor's progress schedule, once accepted by the RPR, will represent the Contractor's baseline plan to accomplish the project in accordance with the terms and conditions of the Contract. The RPR will compare actual Contractor progress against the baseline schedule to determine that status of the Contractor's performance. 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 RPR'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 RPR at least 24 hours in advance of resuming operations.

The Contractor shall not commence any actual construction prior to the date on which the NTP is issued by the Owner.

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.

80-04 Limitation of operations. The Contractor shall control their operations and the operations of their 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 their operations within an AOA of the airport, the work shall be coordinated with airport operations (through the RPR) at least 48 hours prior to commencement of such work. The Contractor shall not close an AOA until so authorized by the RPR and until the necessary temporary marking, signage and associated lighting is in place as provided in Section 70, paragraph 70-08, *Construction Safety and Phasing Plan (CSPP)*.

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; and 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 satisfactory conditions are provided. The areas of the AOA identified in the Construction Safety Phasing Plan (CSPP) ~~and as listed below,~~ 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:~~

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

80-04.1 Operational safety on airport during construction. All Contractors' operations shall be conducted in accordance with the approved project Construction Safety and Phasing Plan (CSPP) and the Safety Plan Compliance Document (SPCD) and the provisions set forth within the current version of AC 150/5370-2, Operational Safety on Airports During Construction. 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 SPCD 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 SPCD and that they implement and maintain all necessary measures.

No deviation or modifications may be made to the approved CSPP and SPCD unless approved in writing by the Owner. The necessary coordination actions to review Contractor proposed modifications to an approved CSPP or approved SPCD can require a significant amount of time.

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 RPR, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the RPR, be removed immediately by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without approval of the RPR.

Should the Contractor fail to remove such person or persons, or fail to furnish suitable and sufficient personnel for the proper execution of the work, the RPR 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 not cause injury to previously completed work, adjacent property, or existing airport facilities due to 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 otherwise authorized by the RPR. 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 RPR 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 RPR 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 RPR 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 paragraph.

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 the Owner may deem necessary, due to unsuitable weather, or other conditions considered unfavorable for the execution of the work, or for such time 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 written order to suspend work to the effective date of the written order to resume the work. Claims for such compensation shall be filed with the RPR within the time period stated in the RPR's order to resume work. The Contractor shall submit with their own claim information substantiating the amount shown on the claim. The RPR 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 or for any other delay provided for in the contract, plans, or specifications.

If it becomes 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 shall be stated in the proposal and contract and shall be known as the Contract Time.

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

80-07.1 Contract time based on calendar days. 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.

80-08 Failure to complete on time. For each calendar day or working day, as specified in the contract, that any work remains uncompleted after the contract time (including all extensions and adjustments as provided in paragraph 80-07, *Determination and Extension of Contract Time*) the sum specified in the contract and proposal as liquidated damages (LD) will be deducted from any money due or to become due the Contractor or their own 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.

Construction time shall be as included in the Proposal and Contract. ~~The maximum construction time allowed for Schedules **[___]** will be the sum of the time allowed for individual schedules but not more than **[___]** 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 their 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 Owner consider the Contractor in default of the contract for any reason above, the Owner 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 RPR 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 RPR 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 RPR.

Termination of the contract or a portion thereof shall neither relieve the Contractor of their responsibilities for the completed work nor shall it relieve their 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 RPR 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 work in accordance with the approved CSPP and SPCD.

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 RPR, or their authorized representatives, using United States Customary Units of Measurement.

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 (0.8 square meters) 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 RPR.

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.

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.

When requested by the Contractor and approved by the RPR in writing, material specified to be measured by the cubic yard (cubic meter) may be weighed, and such weights will be converted to cubic yards (cubic meters) for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the RPR and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.

MEASUREMENT AND PAYMENT TERMS

Term	Description
Excavation and Embankment Volume	In computing volumes of excavation, the average end area method will be used unless otherwise specified.
Measurement and Proportion by Weight	The term “ton” will mean the short ton consisting of 2,000 pounds avoirdupois. All materials that are measured or proportioned by weights shall be weighed on accurate, independently certified scales by competent, qualified personnel at locations designated by the RPR. 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 RPR directs, and each truck shall bear a plainly legible identification mark.
Measurement by Volume	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.
Asphalt Material	Asphalt materials will be measured by the gallon or ton. When measured by volume, such volumes will be measured at 60°F (16°C) or will be corrected to the volume at 60°F (16°C) using ASTM D1250 for asphalts. 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 asphalt material has been lost

Term	Description
	from the car or the distributor, wasted, or otherwise not incorporated in the work. When asphalt materials are shipped by truck or transport, net certified weights by volume, subject to correction for loss or foaming, will be used for computing quantities.
Cement	Cement will be measured by the ton or hundredweight.
Structure	Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.
Timber	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.
Plates and Sheets	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.
Miscellaneous Items	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	Scales must be tested for accuracy and serviced before use. 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. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end. Scales shall be accurate within 0.5% of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the RPR 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 0.1% of the nominal rated capacity of the scale, but not less than one pound. The use of spring balances will not be permitted. In the event inspection reveals the scales have been “overweighing” (indicating more than correct weight) they will be immediately adjusted. All materials received subsequent to the last previous correct weighting-accuracy test will be reduced by the percentage of error in excess of 0.5%. In the event inspection reveals the scales have been under-weighing (indicating less than correct weight), they shall be immediately adjusted. No additional payment to the Contractor will be allowed for materials previously weighed and recorded. Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the RPR 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. 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

Term	Description
	or payment, shall be included in the unit contract prices for the various items of the project.
Rental Equipment	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 in connection with extra work will be measured as agreed in the change order or supplemental agreement authorizing such work as provided in paragraph 90-05 *Payment for Extra Work*.
Pay Quantities	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 RPR. 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 Section 70, paragraph 70-18, *No Waiver of Legal Rights*.

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 Section 40, paragraph 40-02, *Alteration of Work and Quantities,* 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 their own unbalanced allocation of overhead and profit among the contract items, or from any other cause.

90-04 Payment for omitted items. As specified in Section 40, paragraph 40-03, *Omitted Items,* the RPR 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 RPR 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 RPR’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 RPR’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 RPR’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 Section 40, paragraph 40-04, *Extra Work*, 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 RPR, 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 paragraph 90-07, *Payment for Materials on Hand*. No partial payment will be made when the amount due to the Contractor since the last estimate amounts to less than five hundred dollars.

a. From the total of the amount determined to be payable on a partial payment, [insert amount of retainage, not to exceed 5%] percent of such total amount will be deducted and retained by the Owner for protection of the Owner's interests. Unless otherwise instructed by the Owner, the amount retained by the Owner will be in effect until the final payment is made except as follows:

(1) Contractor may request release of retainage on work that has been partially accepted by the Owner in accordance with Section 50-14. Contractor must provide a certified invoice to the RPR that supports the value of retainage held by the Owner for partially accepted work.

(2) In lieu of retainage, the Contractor may exercise at its option the establishment of an escrow account per paragraph 90-08.

b. 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. Contractor must provide the Owner evidence of prompt and full payment of retainage held by 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.

c. When at least 95% of the work has been completed to the satisfaction of the RPR, the RPR 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 RPR 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 paragraph 90-09, *Acceptance and Final Payment*.

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 RPR at or on an approved site.

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

c. The Contractor has furnished the RPR 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 stored or stockpiled.

e. The Contractor has furnished the Owner evidence that the material 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 their 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 paragraph.

90-08 Payment of withheld funds. At the Contractor's option, if an Owner withholds retainage in accordance with the methods described in paragraph 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 Section 50, paragraph 50-15, *Final Acceptance*, the RPR will prepare the final estimate of the items of work actually performed. The Contractor shall approve the RPR's final estimate or advise the RPR 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 RPR 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 RPR's final estimate. If, after such 30-day period, a dispute still exists, the Contractor may approve the RPR'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 Section 50, paragraph 50-16, *Claims for Adjustment and Disputes*.

After the Contractor has approved, or approved under protest, the RPR's final estimate, and after the RPR's receipt of the project closeout documentation required in paragraph 90-11, *Contractor Final Project Documentation*, 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 Section 50, paragraph 50-16, *Claims for Adjustments and Disputes,* or under the provisions of this paragraph, 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, except as noted. 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.

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 the Contractor's failure to conform to contract requirements; or 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 seven (7) 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 Contractor Final Project Documentation. 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 RPR 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 Section 40, paragraph 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(s).

k. Security for Construction Warranty.

l. Equipment commissioning documentation submitted, if required.

END OF SECTION 90

SPECIAL PROVISIONS

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SECTION A – FEDERAL AVIATION ADMINISTRATION REQUIREMENTS

A-01 CIVIL RIGHTS - GENERAL

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 by Title VI of the Civil Rights Act of 1964.

A-02 CIVIL RIGHTS – TITLE VI ASSURANCE

Title VI Solicitation Notice:
The Owner, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

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).

A-03 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.

SECTION B – STATE TERMS AND CONDITIONS

B-01 GENERAL

The intent of this section is to outline the requirements set forth by the State of Arkansas; however, this section does not claim to include all State laws. All requirements set for by the State of Arkansas for bidding and construction shall be included by reference herein. If for any reason that the Federal and/or State requirements conflict with the requirements set forth in this contract, the more stringent of the requirements shall govern.

B-02 BIDDING

B-02.01 Act 150 of 1965, as amended, has been interpreted, by the State Contractor's Licensing Board, to require a contractor to have a current Arkansas contractor's license in order to submit a valid bid for work when the cost thereof is fifty thousand dollars ($50,000) or more.

B-02.02 Act 159 of 1949, as amended, requires the bidder to list his mechanical, plumbing, electrical, and roofing and sheet metal subcontractors.

B-03 BONDING

Bonding shall be executed pursuant to the terms of Arkansas Code Annotated §§ 18-44-501 et. Seq., as amended.

SECTION C – LOCAL TERMS AND CONDITIONS

C-01 CONTRACTOR'S INSURANCE

Contractor shall obtain insurance of the types and in the amounts described below. The insurance shall be written by insurance companies and on forms acceptable to Owner.

Owner and Garver, LLC shall be included as an insured under the CGL, (using ISO Additional Insured Endorsement CG 20 10 11 85 or a substitute providing equivalent coverage), and under the commercial automobile liability (using ISO Additional Insured Endorsement CA 2048 or a substitute providing equivalent coverage), and commercial umbrella, if any. This insurance, including insurance provided under the commercial umbrella, if any, shall apply as primary and non-contributory insurance with respect to any other insurance or self-insurance programs afforded to, or maintained by, Owner.

C-01.1 Commercial General and Umbrella Liability Insurance: Contractor shall maintain commercial general liability (CGL) and, if necessary, commercial umbrella insurance, with a limit of not less than $2,000,000 each occurrence. If such CGL insurance contains a general aggregate limit, it shall apply separately to the Project.

CGL insurance shall be written on ISO occurrence form CG 20 10 (11-85) (or a substitute combination of the following forms CG 20 10 (10-01) and CG 20 37 (10-01) providing equivalent coverage) and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury and liability assumed under an insured contract.

There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability arising from pollution, explosion, collapse, underground property damage, or amending the contractual coverage in the ISO occurrence form.

CGL insurance shall be written with an ISO form CG 25 03 05 09 Designated Construction Project(s) General Aggregate Limit or a substitute form providing equivalent coverage.

C-01.2 Continuing CGL Coverage: Contractor shall maintain commercial general liability (CGL) and, if necessary, commercial umbrella liability insurance, with a limit of not less than $2,000,000 each occurrence for at least 3 years following substantial completion of the Work.

Continuing commercial umbrella coverage, if any, shall include liability coverage for damage to the insured's completed Work equivalent to that provided under ISO form CG 00 01.

~~C-01.3 Owner's and Contractor's Protective Liability Insurance: Contractor shall maintain Owner's and Contractor's Protective Liability (OCP) insurance on behalf of Owner and Garver, LLC, as named insured, with a limit of $1,000,000.~~

~~C-01.4 Railroad Protective Liability Insurance: If applicable to the Project, Contractor shall maintain railroad protective liability insurance on behalf of Owner, as named insured with a limit of $X,000,000 [as *required by the railroad*].~~

C-01.5 Contractor's Professional Liability Insurance: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance with a limit not less than $2,000,000 per claim. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of three years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such

Subcontractor.

C-01.6 Commercial Auto and Umbrella Liability Insurance: Contractor shall maintain business auto liability and, if necessary, commercial umbrella liability insurance with a limit of not less than $1,000,000 each accident.

Such insurance shall cover liability arising out of any auto (including owned, hired and non-owned autos).

Commercial auto coverage shall be written on ISO form CA 00 01, CA 00 05, CA 00 12, CA 00 20, or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage equivalent to that provided in the 1990 and later editions of CA 00 01.

If the Contract Documents require Contractor to remove and haul hazardous waste from the Project site, or if the Project involves such similar environmental exposure, pollution liability coverage equivalent to that provided under the ISO Pollution Liability-Broadened Coverage for Covered Autos Endorsement (CA 99 48) shall be provided, and the Motor Carrier Act Endorsement (MCS 90) shall be attached.

C-01.7 Workers' Compensation Insurance: Contractor shall maintain workers' compensation and employer's liability insurance.

The employer's liability, and if necessary commercial umbrella, limits shall not be less than $500,000 each accident for bodily injury by accident or $500,000 each employee for bodily injury by disease.

If Contractor leases its employees, the alternate employer endorsement (WC 00 03 01 A) shall be attached showing Owner in the schedule as the alternate employer.

Where applicable, U.S. Longshore and Harborworkers Compensation Act Endorsement shall be attached to the policy.

Where applicable, Nonappropriated Fund Instrumentalities Act (NFIA) shall be attached to the policy. NFIA extends the coverage of the Longshore and Harbor Workers' Compensation Act to civilian employees working on United States military bases throughout the world who are not paid with funds appropriated by Congress. These employees, working in facilities operated for the comfort, contentment, and improvement of armed forces personnel, are instead compensated with funds generated from earnings of their facility.

Where applicable, Outer Continental Shelf Lands Act Endorsement shall be attached to the policy.

Where applicable, the Maritime Coverage Endorsement shall be attached to the policy.

If project is located in a state where workers compensation is secured via monopolistic state funds, include evidence of the "Stop Gap" endorsement to the general liability policy.

C-01.8 Property Insurance: If applicable, Contractor shall purchase and maintain property insurance for the Work. Such insurance shall be written in an amount at least equal to the initial contract sum as well as subsequent modifications of that sum. The insurance shall apply on a replacement cost basis. If the insurance obtained in compliance with this paragraph is builders risk insurance, coverage shall be written on a completed value form.

The property insurance as required above shall name as insureds the Owner, Contractor, and all subcontractors and sub-subcontractors on the Project.

C-01.9 Primary and Non-contributory: Contractor agrees that the insurance listed above, including insurance provided under the commercial umbrella, if any, shall apply as primary and non-contributory insurance with respect to any other insurance or self-insurance programs afforded to, or maintained by,

Owner.

C-01.10 Waiver of Subrogation: Contractor waives all rights against the Owner and Garver, LLC and its agents, officers, directors and employees for recovery of damages to the extent these damages are covered by the commercial general liability, commercial umbrella liability insurance, automobile liability insurance and workers compensation insurance maintained pursuant to paragraph C-01 of this agreement.

C-01.11 No Implied Waiver: Contractor shall furnish certifications matching the coverage requirements. Failure of Owner or Engineer to demand such certificate or other evidence of full compliance with these insurance requirements or failure of Owner or Engineer to identify a deficiency from evidence that is provided shall not be construed as a waiver of the contractors obligations to furnish and maintain such insurance, or as a waiver to the enforcement of any of the provisions at a later date.

Any waiver of the contractor's obligation to furnish such certificate or maintain such evidence must be by written change order and signed by a Managing Member (Officer) of the Engineer and the Owner.

C-01.12 Cancellation, Non-Renewal, and/or Impairment Notification: The Contractor shall not cause any insurance policy to be cancelled or permit it to lapse and all insurance policies shall include an endorsement to the effect that the insurance policy or certificate shall not be subject to cancellation or to a reduction in the required limits of liability or amounts of insurance until notice has been mailed to the Owner and Engineer, stating the date when such cancellation or reduction shall be effective, which date shall not be less than (60) days after such notice.

~~The amount shown in the bid item for the Owner's Protective Insurance shall include that amount of additional premium required for obtaining Owner's and Engineer's Protective Liability insurance for the Owner and Garver, LLC. The Engineer has the right to request justification from the contractor for the full amount of the cost included under the items "Owner's Protective Insurance".~~

Notice shall be sent via email and regular mail to the following persons and addresses:

Owner:
Shannon Hobbs
8724 Highway 1 North
Colt, AR 72326
Sales@hobbsimplement.net

Garver:
Jordan Culver, PE
4701 Northshore Drive
North Little Rock, AR 72118
jcculver@garverusa.com

C-01.13 Sample Certificate of Liability Insurance:

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
(must be dated)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Agency contact	
Agency Name Agency Address	PHONE (A/C, No, Ext): Agency ph#	FAX (A/C, No):
	E-MAIL ADDRESS: Agency contact email address	
	INSURER(S) AFFORDING COVERAGE	NAIC #
www.stephens.com	INSURER A : Carrier Name (AM Best Rating)	
INSURED	INSURER B :	
Named Insured on the policies	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY							
	✓ COMMERCIAL GENERAL LIABILITY	X	X	XXXXXXXXXX			EACH OCCURRENCE	$ 5,000,000
	CLAIMS-MADE ✓ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 300,000
							MED EXP (Any one person)	$ 10,000
							PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 5,000,000
	POLICY ✓ PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 5,000,000
								$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	✓ ANY AUTO	X	X	XXXXXXXXXXX			BODILY INJURY (Per person)	$
	ALL OWNED AUTOS / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	✓ HIRED AUTOS / ✓ NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
								$
	✓ UMBRELLA LIAB ✓ OCCUR	X	X	XXXXXXXXXXX			EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE			Umbrella / Excess only if needed to meet the required underlying General Liability limit			AGGREGATE	$
	DED RETENTION $ XXXXX							$
								$
								$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						✓ WC STATU-TORY LIMITS OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? N / A		X	XXXXXXXXXXX			E.L. EACH ACCIDENT	$ 500,000
	(Mandatory in NH)						E.L. DISEASE - EA EMPLOYEE	$ 500,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - POLICY LIMIT	$ 500,000
				XXXXXXXXXXX				

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Owner & Garver, LLC shall be included as an Additional Insured by endorsement #CG2010(11/85) on the General Liability and #CA2048 on the Automobile and Umbrella or substitute endorsement providing equivalent coverage. Coverage shall be Primary and non-contributory with respect to any other insurance or self-insurance programs afforded to the Owner and Garver LLC. Waiver of Subrogation applies in favor of the Owner and Garver LLC on all policies. 60 day notice will be provided to the Owner and Garver LLC in the event of cancellation, non-renewal and/or impairment of the Contractor's policies .

CERTIFICATE HOLDER	CANCELLATION
Owner and Garver LLC	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE (must be signed by the Contractor's Insurance Agent)

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C-02 UTILITIES

All work in this contract shall be in accordance with the Arkansas Underground Facilities Damage Prevention Act. The Contractor shall abide by the most current edition of this Act.

Underground utilities exist within and adjacent to the limits of construction. An attempt has been made to locate these utilities on the plans. However, all existing utilities may not be shown and the actual locations of the utilities may vary from the locations shown.

The Contractor shall be responsible for the protection of all existing utilities, structures, equipment, or improvements crossed by or adjacent to his construction operations. Where existing utilities, service lines, structures, equipment, etc. are cut, broken, or damaged, the Contractor shall replace or repair immediately these items with the same type of original material and construction or better, at his own expense to the satisfaction of the Owner and the Engineer. After damage discovery, the Contractor shall immediately coordinate with the Owner and the Engineer on the complete repair and/or replacement work required. Following written notice of work required, the Contractor shall expeditiously begin and finish this work with all labor and materials required. All repair and/or replacement work, labor, and materials shall be supplied and installed by the Contractor. If the Contractor fails to promptly perform the repair work and correct all deficiencies, the Owner shall have the option of remedying the defects and any expenses incurred by the Owner shall be withheld from the Contractor's payments.

C-03 LEGAL HOLIDAYS

Holidays that shall be observed are the following: New Year's Day (January 1); Dr. Martin Luther King Jr.'s Birthday (3rd Monday in January); President's Day (3rd Monday in February); Memorial Day (last Monday in May); Independence Day (July 4); Labor Day (1st Monday in September); Columbus Day (2nd Monday in October); Thanksgiving Day (4th Thursday in November); Day after Thanksgiving (Friday following Thanksgiving); Christmas Eve (December 24); and Christmas Day (December 25). If a holiday falls on a Saturday or Sunday, the observed day shall be the Friday preceding the Saturday or the Monday following the Sunday. No construction observation will be furnished on legal holidays or Sundays, except in an emergency. The Contractor shall observe these legal holidays and all Sundays, and no work shall be performed on these days except in an emergency. Calendar day contract time includes delays for all holidays. Refer to Section C-06 for more information.

C-04 CLEAN UP

From time to time, the Contractor shall clean up the site, including any work areas at the airport, in order that the site presents a neat appearance and the progress of the work not be impeded. One such period of clean up shall immediately precede final inspection.

Immediately following acceptance of the work by the Owner, the Contractor shall remove all temporary plant, equipment, surplus materials, and debris resulting from his operations, and leave the site in a condition fully acceptable to the Owner.

C-05 PROJECT MEETINGS AND COORDINATION

A preconstruction conference will be called by the Engineer at a time convenient to the Owner and before the issuance of the "Notice to Proceed". The Engineer and the Contractor and such subcontractors as the Contractor may desire shall attend this meeting with the Owner.

The Owner and/or Engineer will call such coordination conferences as may seem expedient to him for the purpose of assuring coordination of the work covered by this Contract. The Contractor shall attend all such conferences. This in no way relieves the Contractor of his responsibility to fully coordinate his work under this Contract.

C-06 LIQUIDATED DAMAGES FOR DELAY

The number of calendar days allowed for completion of the project is stipulated in the Proposal and in the Contract and shall be known as the Contract Time. The Contractor agrees that time is a critical element for this Contract. Loss will accrue to the Owner due to delayed completion of the work; and the cost to the Owner of the administration of the Contract, including engineering, inspection, and supervision, will be increased as the time occupied in the work is lengthened. The Contractor agrees that for each day of delay beyond the number of calendar days herein agreed upon for the completion of the work herein specified and contracted for, the Owner may withhold, permanently, from the Contractor's total compensation, the sum One Thousand Dollars ($1,000.00) as stipulated damages for each day of such delay. Should the amount otherwise due the Contractor be less than the amount of such ascertained and liquidated damages, the Contractor and his Surety shall be liable to the Owner for such deficiency.

It is understood and agreed by and between the Owner and the Contractor that the time of completion herein set out is a reasonable time. The Contractor shall perform fully, entirely, and in an acceptable manner, the work contracted for within the contract time stated in the Contract. The contract time shall be counted from ten days after the effective date of the "Notice to Proceed", or the date work commences, whichever occurs first; and shall include all Sundays, holidays, and non-work days. All calendar days elapsing between the effective dates of any orders of the Engineer for suspension of the prosecution of the work, due to the fault of the Contractor, shall be counted as elapsed contract time, and shall not be considered for an extension of time.

Extensions of time for completion, under the condition of 3(a) next below, will be granted; extensions may be granted under other stated conditions:

1. If the satisfactory execution and completion of the Contract shall require work or material in greater amounts or quantities than those set forth in the Contract, then the Contract time shall be increased in the same proportion as the additional work bears to the original work contracted for.

2. An average or usual number of inclement weather days, when work cannot proceed, is to be anticipated during the construction period and is not to be considered as warranting extension of time. These include days with a mean temperature lower than 32° F and days with more than 0.1” of precipitation. Days with more than 0.5” of precipitation are counted as two days. The days included in the contract time for Normal Weather-Related Events and holidays are as follows:

(On A Monthly Basis)

Month	Normal Weather-Related Events	Holidays
January	23	2
February	14	1
March	13	0
April	11	0
May	11	1
June	7	0
July	8	1
August	9	0
September	5	1
October	7	1
November	9	2
December	12	2

If, however, it appears that the Contractor is delayed by conditions of weather, outside of normal weather-related events detailed in the proceeding table, extensions of time may be granted.

3. Should the work under the Contract be delayed by other causes which could not have been prevented or contemplated by the Contractor, and which are beyond the Contractor's power to prevent or remedy,

an extension of time may be granted. Such causes of delay shall include but not necessarily be limited to the following:

a. Acts of God, acts of the public enemy, acts of the Owner except as provided in these Specifications, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather.

b. Any delays of Subcontractors or suppliers occasioned by any of the causes specified above.

The Engineer or other authorized representative of the Owner shall keep a written record sufficient for determination as to the inclusion of that day in the computation of Contract time. This record shall be available for examination by the Contractor during normal hours of work as soon as feasible after the first of each construction month. In case of disagreement between the representative of the Owner and the Contractor, as to the classification of any day, the matter shall be referred to the Owner whose decision shall be final.

The Contractor shall provide notice to the Engineer each week, in the form of written letter or e-mail, to document weather and site conditions and request certain days be deemed non-conducive due to weather or site conditions. At a minimum, reports shall contain average temperature, 24 hour rainfall and information source. The notice shall be received by the Engineer's representative by the close of business of each Tuesday for the previous week of contract time. Failure to provide the written documentation by the close of business each Tuesday shall result in all seven days of the previous week being deemed conducive. These notices shall serve as justification for whether or not an extension of time is granted, if merited. In case of disagreement between the representative of the Owner and the Contractor, as to the classification of any day, the matter shall be referred to the Owner whose decision shall be final.

If the Contractor finds it impossible for reasons beyond his control to complete the work within the Contract time as specified, or as extended in accordance with the provisions of this subsection, he may, at any time prior to the expiration of the Contract time as extended, make a written request to the Engineer for an extension of time setting forth the reasons which he believes will justify the granting of his request. The Contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the Engineer finds that the work was delayed because of conditions beyond the control and without the fault of the Contractor, he may recommend to the Owner that the contract time be extended as conditions justify. If the Owner extends the contract, the extended time for completion shall then be in full force and effect, the same as though it were the original time for completion.

The amount of all extensions of time for whatever reason granted shall be determined by the Owner. In general, only actual and not hypothetical days of delay will be considered. The Owner shall have authority to grant additional extensions of time as the Owner may deem justifiable.

C-07 CARE OF WORK

The Contractor shall avoid damage, as a result of his operations, to existing sidewalks, streets, curbs, pavements, utilities (except those which are to be replaced or removed), adjoining property, equipment, etc., and he shall at his own expense completely repair any damage thereto caused by his operations, to the satisfaction of the Owner and Engineer. After damage discovery, the Contractor shall immediately coordinate with the Owner and the Engineer on the complete repair and/or replacement work required. Following written notice of work required, the Contractor shall expeditiously begin and finish this work with all labor and materials required. All repair and/or replacement work, labor, and materials shall be supplied and installed by the Contractor. If the Contractor fails to promptly perform the repair work and correct all deficiencies, the Owner shall have the option of remedying the defects and any expenses incurred by the Owner shall be withheld from the Contractor's payments.

C-08 QUALITY ASSURANCE/MATERIALS TESTING

The Contractor shall be responsible for testing the density of the subgrade and the crushed aggregate base course, as well as compressive strength testing for all the concrete constructed as part of this project.

C-09 RECORD DOCUMENTS

The Contractor shall keep one record copy of all Specifications, Drawings, Addenda, Modifications, Shop Drawings and samples at the site, in good order, and annotated to show all changes made during the construction process. In addition, the Contractor shall note any differences between locations of underground existing facilities shown in the plans and the actual location located during construction. These record documents shall be available to the Engineer for examination and shall be delivered to the Engineer upon completion of the work.

C-10 CONTRACTOR/SUBCONTRACTOR/SUPPLIER LEGAL DISPUTES

Any fees, expenses, charges, fines or other costs borne by the Owner as a result of legal disputes or lawsuits between the contractor and his subcontractors, or between the contractor and his suppliers, shall be deducted from monies due or which may thereafter become due the contractor.

C-11 GENERAL GUARANTY

Neither the final certificate of payment nor any provision in the Contract nor partial or entire use of the improvements embraced in this contract by the Owner or the public shall constitute an acceptance of work not done in accordance with the Contract or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall promptly remedy any defects in the work and pay for any damage to other work resulting there, which shall appear within a period of 12 months from the date of final acceptance of the work. The Contractor will be responsible for all costs associated with construction observation and oversight for the repair work. The Owner will give notice of defective materials and work with reasonable promptness. In the event repair work is required, the Contractor shall remedy any defects and pay for any damage to other work resulting there, which shall appear within a period of 12 months from the date of the acceptance of the repair work.

C-12 CONTRACTOR'S RELEASE AND AFFIDAVIT

At the project's completion, the Contractor shall execute the attached Release and Lien Waiver to release all claims against the Owner arising under and by virtue of his Contract. The date of the Release shall be that agreed to for the final acceptance of the project with the Owner.

C-13 SUBMITTALS

The Contractor shall prepare and submit information required by the individual Specification sections sufficiently in advance of the related work to allow an appropriate review time by the Engineer. The types of submittals are indicated in the individual Specification sections.

During the preconstruction conference, the Contractor shall review his submittal schedule and procedures. The Contractor shall submit electronic submittals via email as PDF electronic files directly to the Engineer's designated representative, or post these PDF electronic files directly to the Engineer's FTP site specifically established for this project. Electronic submittals shall be in Adobe Acrobat (*.PDF) format and shall be legible when printed.

Submittals shall be neat, organized, and easy to interpret. Assemble complete submittal package into a single indexed electronic file or hard cover bound book, incorporating submittal requirements of an individual Specification section, the transmittal form with unique submittal numbering system, and electronic links or tabs enabling navigation to each item. Unless approved otherwise by the Engineer, all submittals for the individual Specification section shall be submitted at one time.

Submittals must come directly from the Prime Contractor; submittals from subcontractors or suppliers will not be reviewed.

Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review. Faxed submittals or submittals with extremely small or otherwise unreadable print will not be accepted. Submittals not required by the Contract Documents will be returned by the Engineer without action.

The Contractor shall be responsible for payment of any subsequent submittal reviews beyond the second iteration of a specific item as indicated by the construction submittal log. In this event, the Owner's representative shall conduct the submittal review and payment for the submittal review shall be directly deducted from the Contractor's payment. The Contractor shall pay for additional submittal reviews at the Owner's contract rate.

The Contractor shall retain complete copies of submittals on project site. Use only final submittals that are marked with approval notation from Engineer's submittal review stamp with comments form.

Resubmittals shall continue the unique, sequential, submittal numbering system. Resubmittals without unique numbering, example resubmittals transmitted as 005A or 005REV, are unacceptable and will be returned un-reviewed.

C-14 NOTICE TO PROCURE

Following the award of the contract and prior to issuing a Notice to Proceed, the Owner will issue the Contractor a Notice to Procure. The intent of the Notice to Procure is to allow the Contractor sufficient time to submit shop drawings to the Engineer for review and to procure construction materials with a long lead time. The Notice to Proceed will be issued approximately 8-10 weeks following the Notice to Procure as coordinated between the Owner, Engineer, and Contractor.

RELEASE OF LIEN

FROM: Contractor's Name:_____

Address: _____

TO: Owner's Name:_____

Address: _____

DATE OF CONTRACT: _____

Upon receipt of the final payment and in consideration of that amount, the undersigned does hereby release the Owner and its agents from any and all claims arising under or by virtue of this Contract or modification thereof occurring from the undersigned's performance in connection with the

_____

project.

Contractor's Signature: _____

Title: _____

Subscribed and sworn to before me this _____ day of _____, 20____.

_____
Notary Public

My Commission Expires:

_____

CONTRACTOR'S AFFIDAVIT

FROM: Contractor's Name:_____

Address: _____

TO: Owner's Name:_____

Address: _____

DATE OF CONTRACT: _____

I hereby certify that all claims for material, labor, and supplies entered into contingent and incident to the construction or used in the course of the performance of the work on the

_____

project have been fully satisfied.

Contractor's Signature: _____

Title: _____

Subscribed and sworn to before me this _____ day of _____, 20___.

_____
Notary Public

My Commission Expires:

_____

The Surety Company consents to the release of the retained percentage on this project with the understanding that should any unforeseen contingencies arise having a right of action on the bond that the Surety Company will not waive liability through the consent to the release of the retained percentage.

Dated: _____

Surety Company: _____

By: _____
Resident Agent, State of Arkansas

ITEM SS-101 SAFETY PLAN COMPLIANCE DOCUMENT (SPCD)

DESCRIPTION

101-1.1 The Contractor shall thoroughly review the approved Construction Safety and Phasing Plan (CSPP) and shall comply with approved CSPP. The Contractor shall certify such compliance by completing the attached SPCD and submitting to the Engineer for approval.

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CONTRACTOR SAFETY PLAN COMPLIANCE DOCUMENTS

Owner Name: Delta Regional Airport Authority

Airport: Delta Regional Airport

Project Description: Jet-A Fuel System Installation

Contractor: _____

Each item listed below corresponds to a specific section of the approved CSPP. The Contractor shall certify that he/she will comply with each section of the approved CSPP. Each certified section with a "no" response must be fully explained in an attachment to the SPCD. The document shall be signed and dated by a principal or owner in the Contractor's company. All other requested information shall be completed by the Contractor and submitted to the Engineer for approval as part of the SPCD.

1. **Section 1 - Correspondence:** This project shall be completed in accordance with Section 1 "Coordination" of the approved Construction Safety and Phasing Plan.

Owner: Delta Regional Airport Authority	
Contact: Shannon Hobbs	**Phone: 870-633-6083**
Engineer:	
Project Manager: Jordan Culver	**Phone: 501-366-3143**
Electrical Lead: Nick Holland	**Phone: 501-537-3245**
Construction Observer:	**Phone:**
Materials Testing:	**Phone:**
Contractor:	
Project Manager:	**Phone:**
Superintendent:	**Phone:**
Subcontractors:	**Phone:**

Yes_____No_____

2. **Section 2 - Phasing:** This project shall be completed in accordance with Section 2 "Phasing" of the approved Construction Safety and Phasing Plan.

Yes_____No_____

3. **Section 3 – Areas of Operations Affected by Construction Activity:** This project shall be completed in accordance with Section 3 "Areas of Operations Affected by Construction Activity" of the approved Construction Safety and Phasing Plan.

Yes_____No_____

4. **Section 4 – Protection of Navigational Aids (NAVAIDS):** This project shall be completed in accordance with Section 4 “Protection of Navigational Aids (NAVAIDS)” of the approved Construction Safety and Phasing Plan.

Yes_____No_____

5. **Section 5 – Contractor Access:** This project shall be completed in accordance with Section 5 “Contractor Access” of the approved Construction Safety and Phasing Plan.

Yes_____No_____

6. **Section 6 – Wildlife Management:** This project shall be completed in accordance with Section 6 “Wildlife Management” of the approved Construction Safety and Phasing Plan.

Yes_____No_____

7. **Section 7 – Foreign Object Debris (FOD) Management:** This project shall be completed in accordance with Section 7 “Foreign Object Debris (FOD) Management” of the approved Construction Safety and Phasing Plan.

Yes_____No_____

8. **Section 8 – Hazardous Materials (HAZMAT) Management:** This project shall be completed in accordance with Section 8 “Hazardous Materials (HAZMAT) Management” of the approved Construction Safety and Phasing Plan.

Yes_____No_____

9. **Section 9 – Notification of Construction Activities:** This project shall be completed in accordance with Section 9 “Notification of Construction Activities” of the approved Construction Safety and Phasing Plan.

Yes_____No_____

10. **Section 10 – Inspection Requirements:** This project shall be completed in accordance with Section 10 “Inspection Requirements” of the approved Construction Safety and Phasing Plan.

Yes_____No_____

11. **Section 11 – Underground Utilities:** This project shall be completed in accordance with Section 11 “Underground Utilities” of the approved Construction Safety and Phasing Plan.

Yes_____No_____

12. **Section 12 – Penalties:** This project shall be completed in accordance with Section 12 “Penalties” of the approved Construction Safety and Phasing Plan.

Yes_____No_____

13. **Section 13 – Special Conditions:** This project shall be completed in accordance with Section 13 “Special Conditions” of the approved Construction Safety and Phasing Plan.

Yes_____No_____

14. **Section 14 – Runway and Taxiway Visual Aids:** This project shall be completed in accordance with Section 14 “Runway and Taxiway Visual Aids” of the approved Construction Safety and Phasing Plan.

Yes_____No_____

15. **Section 15 – Marking and Signs for Access Routes:** This project shall be completed in accordance with Section 15 “Marking and Signs for Access Routes” of the approved Construction Safety and Phasing Plan.

Yes_____No_____

16. **Section 16 – Hazard Marking and Lighting:** This project shall be completed in accordance with Section 16 “Hazard Marking and Lighting” of the approved Construction Safety and Phasing Plan.

Yes_____No_____

17. Section 17 – Work Zone Lighting for Nighttime Construction: This project shall be completed in accordance with Section 17 “Work Zone Lighting for Nighttime Construction” of the approved Construction Safety and Phasing Plan.

Yes_____No_____

18. **Section 18 – Protection of Safety Areas, Object Free Areas, Object Free Zones, and Approach / Departure Surfaces:** This project shall be completed in accordance with Section 18 “Protection of Safety Areas, Object Free Areas, Object Free Zones, and Approach / Departure Surfaces” of the approved Construction Safety and Phasing Plan.

Yes_____No_____

19. **Section 19 – Other Limitations on Construction:** This project shall be completed in accordance with Section 19 “Other Limitations on Construction” of the approved Construction Safety and Phasing Plan.

Yes_____No_____

I certify that, for the project identified herein, the responses to the foregoing items are correct as marked, and that I shall comply with the approved Construction Safety and Plan.

Signed: _____
Contractor's Authorized Representative

Date: _____

_____
Print Name and Title of Contractor's Representative

END OF ITEM SS-101

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ITEM SS-110 STANDARD SPECIFICATIONS

GENERAL

110-1.1 The standard specifications of the Arkansas Department of Transportation (ARDOT) are bound in a book titled Standard Specifications for Highway Construction. These specifications are referred to herein as "Standard Specifications." The latest edition shall apply. A copy of these "Standard Specifications" may be obtained from the ARDOT at their customary charge.

INCORPORATION AND MODIFICATION

110-2.1 Certain parts of the Standard Specifications are appropriate for inclusion in these Technical Specifications. Such parts are incorporated herein by reference to the proper section or paragraph number. The individual specification numbers noted herein may be different from those in the latest edition of the "Standard Specifications." The most current specification number shall apply. Each such referenced part shall be considered to be a part of these Contract Documents as though copied herein in full.

110-2.2 Certain referenced parts of the Standard Specifications are modified in the Specifications that follow. In case of conflict between the Standard Specifications and the Specifications that follow, the Specifications that follow shall govern.

110-2.3 Individual material test numbers change from time to time. Use the latest applicable test.

110-2.4 Reference in the Standard Specifications to the “Department” is herein changed to the “Owner”.

MEASUREMENT AND PAYMENT

110-3.1 Standard Specifications will not be measured for separate payment.

~~Payment will be made under:~~

~~Item SS-110-3.1 XXXX – per Ton~~

END OF ITEM SS-110

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ITEM SS-120 CONSTRUCTION SAFETY AND SECURITY

DESCRIPTION

120-1.1 This item covers safety and security for construction of the proposed improvements.

The attention of the bidder is directed to the necessity for careful examination of the entire project site to determine, at the time of bid preparation, the full extent of work to be done under the item "Construction Safety and Security."

The item "Construction Safety and Security" shall include:

1. Lighted Barricades
2. Airport Security Requirements
3. Airport Safety Requirements

CONSTRUCTION METHODS

120-2.1 LIGHTED BARRICADES. The Contractor shall furnish, install, maintain, lighted barricades in accordance with details on the plans and as directed by the Engineer. The lighted barricades shall be constructed and installed as shown on the plans. All lighted barricades and closed taxiway and runway markers shall be constructed in accordance with AC 150/5370-2G Operational Safety on Airports During Construction.

All work involved in the furnishing, installation, maintenance, and removal of lighted barricades will not be measured for separate payment, but will be considered subsidiary to the bid item "Construction Safety and Security."

120-2.2 AIRPORT SECURITY REQUIREMENTS. The Contractor shall abide by the Airport Security requirements that are outlined in the Construction Safety and Phasing Plan (CSPP). Any costs associated with the Airport Security requirements will not be measured for separate payment but will be considered subsidiary to the bid item "Construction Safety and Security."

120-2.3 AIRPORT SAFETY REQUIREMENTS. The Contractor shall abide by the Airport Safety requirements that are outlined in the Construction Safety and Phasing Plan (CSPP). All costs associated with the Airport Safety requirements will not be measured for separate payment but will be considered subsidiary to the bid item "Construction Safety and Security."

MEASUREMENT AND PAYMENT

120-3.1 Construction safety and security will be measured as a lump sum complete item. Work completed and accepted under this item will be paid for at the contract lump sum price bid for "Construction Safety and Security", which price shall be full compensation for furnishing all labor, tools, equipment and incidentals necessary to complete the work.

Periodic payments will be made under this item in proportion to the amount of work accomplished, as determined by the Engineer.

Payment will be made under:

Item SS-120-3.1 Construction Safety and Security - per Lump Sum

END OF ITEM SS-120

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SS-131 JET-A FUELING FACILITY

PART 1 – GENERAL

1.1 DESCRIPTION

A. Furnish, deliver, install and test (leak, soak, line, etc.) a cradle mounted aviation fueling facility for the distribution of JET-A aviation fuel. The aviation fueling facility includes, but is not limited to: above ground double walled tank for fuel storage; off-loading equipment; piping; filtering; tubing; fittings; pumps; accessories; supply lines; return lines; vent lines; fueling lines; 24 hour self-serve fuel management system connected to existing card reader system; all training required to operate the system and all other components and accessories necessary to install and make ready for use a fully functional and open for operation aviation fueling facility. All fueling facility components shall be installed on the concrete pad shown on the plans capable of supporting all required equipment. The fueling facility shall dispense fuel to aircraft parked on the aircraft parking apron and refill the Airport's future Jet-A Aircraft Re-Fueling truck.

B. All site preparation for the Jet-A fueling facility shall be provided as described under their respective specification section including, but not limited to: subgrade preparation (P-152); concrete slabs (SS-230); bollards (SS-281); etc. Subgrade preparation shall be considered subsidiary to SS-131.

C. The fueling facility shall be the design of a Contractor who is regularly engaged in the fabrication of aircraft fueling facilities. The fueling facility shall be supplied as a complete system and furnished by a Contractor who provides aviation fueling facilities as an integral fueling facility package. To the extent possible, all materials shall be provided from a single manufacturer. All materials shall be new, unused, and free from defect. Any manufacturer's name, trade name, brand name or catalog number used in these specifications is for the purpose of describing and establishing general quality levels. Such references are not intended to be restrictive. Bids will be considered for any brand that meets or exceeds the quality of the specifications listed for any item acceptable to the Delta Regional Airport Authority.

D. Electrical work for the installation of the fueling facility includes, but is not limited to: installation of underground wiring and distribution systems leading to the fueling facility, modification of existing emergency fuel shut off system, including emergency shut-off button(s) as shown on the plans, and backfill for electrical work, foundation and pads for electrical work, wiring devices, electrical control systems and interlock wiring, and wiring for built-in equipment. Electrical work shall also include all subsidiary items necessary to complete the system. All electrical work shall be in accordance with this Specification, Specification SS-300, and local and state codes.

E. All coordination with local, state, and federal agencies shall be the responsibility of the fueling facility Contractor. The fueling facility Contractor shall be responsible for all permits, compliance with all applicable codes, registration of the completed facility, design of the facility, and quality assurance throughout construction.

F. **Jet-A Fuel System Installation (Schedule 1):**

1. The tank system shall be set up to offload transport at approximately 220 GPM, using the fuel system's pump; refill the airport's refueling truck at approximately 220 GPM; fuel aircraft using a single-point nozzle at approximately 120 GPM; and fuel aircraft using an over-wing nozzle at approximately 75 GPM. The system shall be set up so that fuel passes through a filter/coalescer vessel going into the tank and coming out of the tank. Contractor shall install a remote spill containment box at offload point shown on plans.

2. The Contractor shall furnish and install one (1) 12,000-gallon double wall, horizontal tank with floating suction and anti-siphon system. The tank shall be cradle mounted or skid mounted and secured to the new concrete pad shown on the plans. The tank supports shall comply with NFPA 30. The tank shall be constructed per the specifications of UL-142 and Steel Tank Institute Fireguard. The tank shall have internal epoxy coating compatible for use with Jet-A aviation fuel using a two (2) coat system of epoxy paint. Coating shall be a high solids cycloaliphatic amine epoxy with minimum 82% solids by volume. Coating shall meet the requirements of Chemical Immersion NACE TM-01-74 Procedure B – no blistering, cracking, rusting, or delamination after 6 months continuous immersion and salt spray ASTM B 117 – no blistering, cracking, rusting, or delamination film. The epoxy coating shall not exhibit any rust creepage after 1,000 hours of exposure. The tank exterior is to be painted white with a long life, low chalking, fuel resistant exterior coating with appropriate decals installed meeting the requirements of API 1542 and OSHA. The tank filling operation is to have spill protection and overfill prevention, including but not limited to clock face liquid level gauge with 90% alarm and overfill prevention valve for 95% capacity. The clock face liquid level gauge shall be a Morrison Bros. Co. 918 Clock Type Gauge with overfill alarm or approved equivalent. The overfill prevention shall be Morrison Bros. Co. 9095A-AV3300AV EVR or approved equivalent. The tank shall be equipped with one suction tube for re-fueling outlet, one vented drop tube with flow diffuser on inlet, and one suction tube for sump operations. A commercial positive displacement fuel pump for a dispensing rate of up to 220 GPM, compatible with Jet-A aviation fuel, shall be provided for truck refueling and self-serve operations. Pump shall be equipped with anti-siphon solenoid, external fire safety valve, and lockable ball valve. Water detection system shall be provided and connected to pump to stop pump if water is detected. Tank shall be equipped with OPW 763 aluminum floating suction assembly or approved equal. System shall be equipped with interstitial space leak indicator.

3. Tank shall be provided with a hand sump pump with anti-siphon valve and lockable ball valve at the low end of the tank. The suction pipe shall be 1-inch stainless steel and shall clear the bottom of tank by 3/4 -inch. The ball valve shall be protected from damage. The hose from the sump pump shall reach 10 inches from the ground. Pipe end shall have a ¾-inch cam-lock cap with an attached lanyard or chain.

4. The low end of the tank shall include a steel external ladder and platform at the top of the tank. The platform shall be a minimum of 4 feet by 4 feet with a handrail and shall meet OSHA requirements. The ladder and platform shall be painted yellow with two coats of zinc chromate primer.

5. The tank shall be installed at a minimum pitch of 2.5 percent.

6. The tank suction line shall have an anti-siphon valve such as a Morrison Fig. 710 Solenoid Valve, or approved equal, installed. This valve will open only when pump is on. It shall be closed when the pump is off and/or emergency shut-off of

activated. Design shall allow for this valve to open before pump starts to run, to prevent suction build up.

7. The Jet-A Tank exterior is to be painted white with appropriate “FLAMMABLE” or “CUMBUSTIBLE”, “NO SMOKING”, product information decals and other signs/warnings on all sides as required to meet the requirements of API 1542, OSHA, State Fire Marshal and others as required. Tanks shall be painted with a two-part system consisting of an epoxy primer and a urethane top-coat. The system shall have a warranty for 10 years against paint color, gloss, and corrosion.

8. **Self-Serve Dispensing.** The fuel will be pumped from the 12,000-gallon tank to aircraft using an aviation rated, over-wing Jet-A fuel nozzle color coded for Jet-A and single-point Jet-A fuel nozzle coded for Jet-A at an estimated delivery rate of up to 120 GPM. All piping shall be stainless steel. The fuel shall pass through a filter/coalescer and be metered. The filter/coalescer shall be approved for Jet-A fuel and equipped with a differential pressure gauge. A 2-stage solenoid valve, rotary positive displacement meter, and solid-state pulsar shall be installed for retail sales/card reader use. Meter and pulsar shall be total control systems 700-15 SPA or approved equivalent. A 100-foot static ground reel with spring-rewind shall be installed. An electric rewind hose reel with 100 feet of refueling hose certified in accordance with NFPA 407 shall be installed with a quick release for nozzles. An over-wing Jet-A fuel nozzle color coded for Jet-A and a single-point Jet-A fuel nozzle color coded for Jet-A shall be provided. A GTP-1750A, or approved equivalent, deadman control system shall be provided with the dispensing equipment. Self-serve equipment shall be set-up to recirculate fuel back to the tank.

9. A self-serve dispensing cabinet consisting of a welded steel frame with a slide-off aluminum cover shall be installed on concrete pad for self-serve dispensing equipment. The cover shall be made of welded square steel tubing with an aluminum skin. The cover shall incorporate a hinged door for user access. The cabinet shall be designed to fuel aircraft through an aviation-type, over-wing or single-point nozzle and enclose all self-serve fueling equipment for protection from weather, including UV exposure. All parts of the dispenser cabinet shall be powder coated. In lieu of slide-off, powder coated cabinet, a stainless-steel cabinet with maintenance hatches providing access to all components is acceptable. Minimum dimensions for the cabinet shall be 42 inches deep by 48 inches wide by 36 inches high. Dispensing cabinet shall house the secondary filter (if necessary), displacement meter, pulsar, electric rewind hose reel, grounding reel and cable, solenoid valve, as well as all other valves at the self-serve dispensing station.

10. **Refueling Truck Refilling.** The fuel will be pumped from the 12,000-gallon tank to a future airport owned/leased aircraft refueling truck, using an aviation rated, single-point Jet-A nozzle at an estimated delivery rate of 220 GPM. All piping is to be stainless steel. The fuel shall pass through a filter/coalescer and be metered. The filter/coalescer shall be approved for Jet-A fuel and equipped with a differential pressure gauge. A 2-stage solenoid valve and solid-state pulsar shall be installed. The system shall be equipped with a relaxation chamber per NFPA 407. A 25-foot certified refueling hose and a 25-foot static ground reel in accordance with NFPA 407 shall be installed. A GTP-1750A, or approved equivalent, deadman control system shall be provided with the dispensing equipment.

11. Fuel shall be pumped into the tank from the transport trucks using the fuel system's pump. Fuel strainer, valves, coalescer/filter suitable for Jet-A fuel and equipped with differential pressure gauge, spill containment box, and piping capable of handling a flow rate of at least 220 GPM shall be provided and mounted on the concrete pad with the tank. Stainless steel piping in accordance with NFPA 407 shall be used for all piping.

12. The filter/coalescer for the offload system, refueling truck system, and self-serve system can all be the same vessel.

G. **Jet-A Fuel System Installation (Schedule 2):**

1. The tank system shall be set up to offload transport at approximately 220 GPM, using the tanker's pump; refill the airport's refueling truck at approximately 100 GPM; fuel aircraft using a single-point nozzle at approximately 100 GPM; and fuel aircraft using an over-wing nozzle at approximately 60 GPM. The system shall be set up so that fuel passes through a filter/coalescer vessel going into the tank and coming out of the tank. Contractor shall install a remote spill containment box at offload point shown on plans.

2. The Contractor shall furnish and install one (1) 10,000-gallon double wall, horizontal tank with floating suction and anti-siphon system. The tank shall be cradle mounted or skid mounted and secured to the new concrete pad shown on the plans. The tank supports shall comply with NFPA 30. The tank shall be constructed per the specifications of UL-142 and Steel Tank Institute Fireguard. The tank shall have internal epoxy coating compatible for use with Jet-A aviation fuel using a two (2) coat system of epoxy paint. Coating shall be a high solids cycloaliphatic amine epoxy with minimum 82% solids by volume. Coating shall meet the requirements of Chemical Immersion NACE TM-01-74 Procedure B – no blistering, cracking, rusting, or delamination after 6 months continuous immersion and salt spray ASTM B 117 – no blistering, cracking, rusting, or delamination film. The epoxy coating shall not exhibit any rust creepage after 1,000 hours of exposure. The tank exterior is to be painted white with a long life, low chalking, fuel resistant exterior coating with appropriate decals installed meeting the requirements of API 1542 and OSHA. The tank filling operation is to have spill protection and overfill prevention, including but not limited to clock face liquid level gauge with 90% alarm and overfill prevention valve for 95% capacity. The clock face liquid level gauge shall be a Morrison Bros. Co. 918 Clock Type Gauge with overfill alarm or approved equivalent. The overfill prevention shall be Morrison Bros. Co. 9095A-AV3300AV EVR or approved equivalent. The tank shall be equipped with one suction tube for re-fueling outlet, one vented drop tube with flow diffuser on inlet, and one suction tube for sump operations. A commercial positive displacement fuel pump for a dispensing rate of up to 220 GPM, compatible with Jet-A aviation fuel, shall be provided for truck refueling and self-serve operations. Pump shall be equipped with anti-siphon solenoid, external fire safety valve, and lockable ball valve. Water detection system shall be provided and connected to pump to stop pump if water is detected. Tank shall be equipped with OPW 763 aluminum floating suction assembly or approved equal. System shall be equipped with interstitial space leak indicator.

3. Tank shall be provided with a hand sump pump with anti-siphon valve and lockable ball valve at the low end of the tank. The suction pipe shall be 1-inch stainless steel and shall clear the bottom of tank by 3/4 -inch. The ball valve shall be protected from damage. The hose from the sump pump shall reach 10 inches from the ground. Pipe end shall have a ¾-inch cam-lock cap with an attached lanyard or chain.

4. The low end of the tank shall include a steel external ladder and platform at the top of the tank. The platform shall be a minimum of 4 feet by 4 feet with a handrail and shall meet OSHA requirements. The ladder and platform shall be painted yellow with two coats of zinc chromate primer.

5. The tank shall be installed at a minimum pitch of 2.5 percent.

6. The tank suction line shall have an anti-siphon valve such as a Morrison Fig. 710 Solenoid Valve, or approved equal, installed. This valve will open only when pump is on. It shall be closed when the pump is off and/or emergency shut-off of activated. Design shall allow for this valve to open before pump starts to run, to prevent suction build up.

7. The Jet-A Tank exterior is to be painted white with appropriate “FLAMMABLE” or “CUMBUSTIBLE”, “NO SMOKING”, product information decals and other signs/warnings on all sides as required to meet the requirements of API 1542, OSHA, State Fire Marshal and others as required. Tanks shall be painted with a two-part system consisting of an epoxy primer and a urethane top-coat. The system shall have a warranty for 10 years against paint color, gloss, and corrosion.

8. **Self-Serve Dispensing.** The fuel will be pumped from the 10,000-gallon tank to aircraft using an aviation rated, over-wing Jet-A fuel nozzle color coded for Jet-A and single-point Jet-A fuel nozzle coded for Jet-A at an estimated delivery rate of up to 120 GPM. All piping shall be stainless steel. The fuel shall pass through a filter/coalescer and be metered. The filter/coalescer shall be approved for Jet-A fuel and equipped with a differential pressure gauge. A 2-stage solenoid valve, rotary positive displacement meter, and solid-state pulsar shall be installed for retail sales/card reader use. Meter and pulsar shall be total control systems 700-15 SPA or approved equivalent. A 100-foot static ground reel with spring-rewind shall be installed. An electric rewind hose reel with 100 feet of refueling hose certified in accordance with NFPA 407 shall be installed with a quick release for nozzles. An over-wing Jet-A fuel nozzle color coded for Jet-A and a single-point Jet-A fuel nozzle color coded for Jet-A shall be provided. A GTP-1750A, or approved equivalent, deadman control system shall be provided with the dispensing equipment. Self-serve equipment shall be set-up to recirculate fuel back to the tank.

9. A self-serve dispensing cabinet consisting of a welded steel frame with a slide-off aluminum cover shall be installed on concrete pad for self-serve dispensing equipment. The cover shall be made of welded square steel tubing with an aluminum skin. The cover shall incorporate a hinged door for user access. The cabinet shall be designed to fuel aircraft through an aviation-type, over-wing or single-point nozzle and enclose all self-serve fueling equipment for protection from weather, including UV exposure. All parts of the dispenser cabinet shall be powder coated. In lieu of slide-off, powder coated cabinet, a stainless-steel cabinet with maintenance hatches providing access to all components is acceptable. Minimum dimensions for the cabinet shall be 42 inches deep by 48 inches wide by 36 inches high. Dispensing cabinet shall house the secondary filter (if necessary), displacement meter, pulsar, electric rewind hose reel, grounding reel and cable, solenoid valve, as well as all other valves at the self-serve dispensing station.

10. **Refueling Truck Refilling.** The fuel will be pumped from the 10,000-gallon tank to a future airport owned/leased aircraft refueling truck, using an aviation rated, single-point Jet-A nozzle at an estimated delivery rate of 100 GPM. All piping is to be stainless steel. The fuel shall pass through a filter/coalescer and be

metered. The filter/coalescer shall be approved for Jet-A fuel and equipped with a differential pressure gauge. A 2-stage solenoid valve and solid-state pulsar shall be installed. The system shall be equipped with a relaxation chamber per NFPA 407. A 25-foot certified refueling hose and a 25-foot static ground reel in accordance with NFPA 407 shall be installed. A GTP-1750A, or approved equivalent, deadman control system shall be provided with the dispensing equipment.

11. Fuel shall be pumped into the tank from the transport trucks using the tanker's pump. Fuel strainer, valves, coalescer/filter suitable for Jet-A fuel and equipped with differential pressure gauge, spill containment box, and piping capable of handling a flow rate of at least 220 GPM shall be provided and mounted on the concrete pad with the tank. Stainless steel piping in accordance with NFPA 407 shall be used for all piping.

12. The filter/coalescer for the offload system, refueling truck system, and self-serve system can all be the same vessel.

H. Pipe Tubing and Fittings

1. All aboveground pipe, fittings and connections shall consist of stainless-steel piping in accordance with NFPA 407. Pipe, elbows, and couplings shall conform to the requirements of UL 6A. Line leak detectors shall be installed wherever necessary.

2. The Contractor shall provide fittings, test points and connections as required to: facilitate direct connection piping; monitor containment between fuel storage and dispensing; and monitor for leaks.

3. All piping shall be suitable for use with Jet-A fuel.

H. Automatic Card Reader System – New Jet-A system shall utilize Airport's existing QT Pod M4000 credit card reader. Contractor shall provide a factory certified installer/integrator to connect the new system to the existing credit card reader. Contractor shall provide additional hose control expansions, if required; and reprogram the reader for multiple tank operation. Contractor shall provide conduit and wiring installation to connect existing credit card reader to new Jet-A system for complete operation.

I. Emergency Fuel Shut-Off System

1. The new Jet-A system shall be integrated in with the existing emergency shut-off system at the rack. It is the contractor's responsibility to trace the existing wiring and integrate the new Jet-A system to operate per NFPA requirements for the Emergency Stop button. The Emergency Stop button shall shut off power to all fuel farm entities for both the existing AvGAS tank and the new Jet-A.

2. The emergency shut-off signage shall be replaced in accordance with the plans.

J. The intent of this specification is to provide a fully functional and open for operation fueling facility for use by the Delta Regional Airport and the Delta Regional Airport Authority (turn-key).

K. Qualifications

This project component requires that all firms used by the *Bidder*, including the *Bidder's* own employees or subsidiary firms, that are associated with any aspect of the work shall certify that they and all ancillary firms have regularly engaged in the production, manufacturing, and/or assembly of such fuel storage tank systems for the past four (4) years. Furthermore, the *Bidder* must demonstrate that they have installed similar storage tank/fuel systems elsewhere that have been in satisfactory service for the past four (4) years. Coating applicator(s) employed in the project also shall have a minimum of four (4) years' experience in the application of the type-coating system used. Contractor shall certify in writing to the engineer prior to commencement of the work that their employees and/or subsidiary firms working inside the tank have completed Confined Space Entry Training compliant with OSHA Confined Space Standard 29 CFR 1910.146.

The Bidder must be able to clearly demonstrate it has the financial capacity to manage the project and has maintained a strong financial performance for the past four (4) years.

The *Bidder* must submit a copy of their current Oklahoma Contractor Licensing Board License with the classifications of Above Ground Tanks; Piping, Process Piping, Valve Repair, and Service Station Equipment with bid. All bidder qualifications shall be submitted with bid prior to bid opening.

NOTE: The Contractor shall provide written certification that all aspects of the fueling facility design and construction meet the requirements of this specification and all applicable federal, state and local codes. The certification forms are included in this specification. The design certification will be completed and signed by the principal or owner of the Contractor's company and shall be furnished to the Engineer before construction begins. The construction certifications shall be completed by the principal or owner of the Contractor's company and furnished to the Engineer at defined construction milestones for use in processing payment.

1.2 QUALITY ASSURANCE

A. General Design Criteria:

1. It shall be the Contractor's responsibility to produce and furnish all required construction documents to the appropriate regulatory agencies for their review. It is the Contractor's responsibility to coordinate and furnish all permits, licences and fees required to construct all aspects of the fueling facility.

2. It shall be the Contractor's responsibility to furnish all professional certification and services required to meet all state and local codes and laws.

3. The fueling facility specifications and components may vary to suit manufacturer's standard design provided substituted components meet or exceed specified requirements and/or are approved by the Engineer.

4. The fueling facility shall be designed and fabricated according to FAA Advisory Circular 150/5230-4B "Aircraft Fuel Storage, Handling, Training, and Dispensing on Airports" and all referenced guidance including but not limited to: NFPA 30, 30A, 70, 407, and 780; AIP 1540 latest specifications; and National Bureau of Standards Handbook No. 44.

5. Electrical work shall be in conformance with NFPA 70 and 407. Lightning protection shall be in conformance with NFPA 780.

6. All applicable standards of the Standard Fire Protection Code and International Building Code (current editions) shall be adhered to.

7. The Contractor shall ensure that all applicable federal, state and local requirements are conformed to. The Contractor shall coordinate their efforts with the State Fire Marshall, Delta Regional Airport Authority Fire Department, and the proposed fueling supplier for the Delta Regional Airport.

1.3 CONSTRUCTION DOCUMENTATION:

A. General Certification: **The Engineer shall not provide review, comment or approval of any Contractor construction documents. The Contractor shall provide written certification that all aspects of the fueling facility design and fueling facility construction meet the requirements of this specification and all applicable federal, state, and local codes. The certification forms are included in this specification. The design certification will be completed and signed by the principal or owner of the Contractor's company and shall be furnished to the Engineer before construction begins. The construction certifications shall be completed by the principal or owner of the Contractor's company, and furnished to the Engineer at defined construction milestones for use in processing payment.**

B. Submittals:

1. Submittals shall be submitted for all equipment proposed for use that clearly indicates the name, address and location of the authorized manufacturer's representative supplying the equipment, including written certification of the representative's authorization by the manufacturer and responsible territory.

2. Submittals shall be clearly marked to indicate the item which is being submitted and the complete model number of each type of equipment to be furnished.

3. Warranty and service policy for each type of equipment submitted shall be furnished with the submittals. This shall include written certification guaranteeing materials to be free of defects for either the manufacturers' warranty or one (1) year from date of final acceptance, whichever occurs later, and shall further guarantee that should any defects appear within this period, the equipment will be replaced or repaired to the satisfaction of the Delta Regional Airport Authority without charge.

4. A schematic drawing of the layout of the proposed fuel system, including all the major components and piping, including electrical, shall be provided by the Contractor. This schematic shall show the proposed conduit stub-up locations as well as the intended revisions for the Emergency Stop system and connection to the existing electrical panel.

5. The Contractor shall submit test reports and certifications as follows:

   (a) Characteristics of equipment.

   (b) Statement of any special requirements or other characteristic for satisfactory operation.

   (c) Certification that the entire equipment installation, including all accessories and mounting hardware, has been designed to withstand a wind loading of 100 mph.

   (d) Certification that all components are compatible and recommended for use with each other.

6. The Contractor shall supply the following documentation to the Owner. Three (3) complete sets of documentation shall be supplied for each model of equipment. The documentation shall be securely bound in heavy-duty 3-ring binders. The

information for each piece of equipment shall be indexed using typewritten label tabs. The spine of each binder shall have a typewritten label, which indicates the included equipment types. The documentation shall include:

(a) Installation manual

(b) Operation manual

(c) Maintenance manual

(d) Parts list including recommended spare parts

C. Construction Record Documents: Furnish three (3) complete sets of erection, structural, electrical and mechanical construction record documents to the Engineer, following completion and acceptance of the fueling facility. These documents shall be for the Delta Regional Airport Authority's records only, and no review, comment or approval shall be made or implied.

1.4 DELIVERY, STORAGE AND HANDLING

Deliver and store pre-fabricated components, tank, mechanical equipment, electrical equipment and other manufactured items so they will not be damaged or deformed. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weathertight ventilated covering. Store delivered equipment so that weather accumulations will drain freely.

1.5 WARRANTY

A. Tank and Distribution System Warranty: Furnish the tank and distribution system manufacturer's written warranty, covering failure of the fueling system within the warranty period, except as otherwise noted. This warranty shall be in addition to and not a limitation of other rights the Delta Regional Airport Authority may have against the Contractor under the Contract Documents.

B. Warranty period for all other components provided and/or installed pursuant to the installation of the fueling facility shall be the manufacturers' standard warranty or one year after the date of Final Acceptance, whichever is longer.

1.6 COORDINATION

The Contractor is responsible for coordinating dimensions and installation details with their suppliers, subcontractors, his/her forces and any other affected parties to assure a complete, sound and finished project. Contractor shall carefully examine all items of work to be thoroughly familiar with items that require connections and coordination. Notify other tradesman of any deviations or special conditions necessary for the installation of the work. Interference between work of various disciplines shall be resolved by the Contractor prior to installation. Work installed not in compliance with the standards listed and without properly checking and coordinating as specified above shall, if necessary, be removed and properly reinstalled without additional cost to the Delta Regional Airport Authority.

Equipment shall be installed in accordance with manufacturer's recommendation. The Contractor shall make all final electrical connections and coordinate all items with other trades.

The Contractor shall correct all damage caused due to installation of work.

1.7 INSPECTION FEES, PERMITS AND TESTS

A. The Contractor shall obtain and pay for all necessary permits and inspection fees required for construction and placing the facility in operation.

B. The Contractor shall coordinate with utility companies and shall be responsible for all underground or aboveground differential costs charged by the utilities.

C. The Contractor shall conduct all necessary testing required to place the facility in operation including but not limited to 4-day soak testing and leak (pneumatic and hydrostatic pressure) testing of the tank and piping and testing of the pumps. Leak testing shall be completed by the manufacturer and shall be completed in accordance with ASME B31.3, NFPA 407, and NFPA 30. Hydrostatic testing shall be completed at 150 percent working pressure for 4 hours. System will not be considered operational until first delivery into tank is product-tested by a local certified laboratory to meet ASTM D 1655. The Contractor shall be responsible for all testing.

D. Water shall not be used for testing or flushing any fuel piping or components. Flushing shall be completed with clean fuel and completed under the supervision of the fuel supplier's representative.

E. Disposal of any and all fuel that cannot be returned to storage or sold to public shall be the Contractor's responsibility.

F. The Contractor shall remain in continual contact with the Oklahoma Bureau of Standards Division to and throughout construction to ensure all proposed equipment meets or exceeds their requirements.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S PROPOSAL

A. The Contractor shall submit a complete listing of all major items proposed for installation as an integral component of their proposal for the installation of the aviation fueling facility.

PART 3 - EXECUTIONS

3.1 GENERAL

A. The system including all accessories shall be installed in strict accordance with the manufacturer's recommendations and applicable fire and environmental codes. All required state and local permits shall be obtained by the Contractor at his/her expense prior to installation.

B. Electrical work shall be in accordance with applicable codes and shall be rated for hazardous areas, as required.

3.2 COLLISION PROTECTION

A. Collision protection shall be provided as described in the plans and in Specification SS-281.

3.3 ELECTRICAL

A. Install all electrical work in accordance with the requirements of these contract documents including the standards listed under section 1.2 Quality Assurance.

B. The Contractor shall propose a grounding system for the facility.

C. Ground reels are to be electrically bonded to the ground system.

D. It is not necessary to bond around pipe flanges.

E. All equipment shall be electrically bonded.

F. Ground rods shall be copper-clad steel conforming to UL-467 and shall not be less than ¾ inch in diameter and 10 feet in length.

G. Contractor shall install conduit seal fittings in accordance with NFPA requirements. These locations are not shown on the plans.

3.4 TESTING

A. Fueling facility and fuel lines shall be pressure tested (pneumatic and hydrostatic) in accordance with the manufacturer's instructions. Hydrostatic testing shall be completed at 150 percent of working pressure for 4 hours. Leaking components will be repaired or replaced and retested.

3.5 TRAINING

A. Before the final inspection, the Owner's designated personnel shall be trained by the Contractor's factory-trained representative in the operation, adjustment and maintenance of products, equipment and systems at agreed upon times. As a result of this training, Owner's personnel are to gain a thorough knowledge and understanding of all products, equipment and systems and be capable of conducting all phases of safe operation, control, adjustment and maintenance of the complete system.

B. O&M Manuals shall be used as the basis for all instruction provided to Owner's personnel. Upon completion of system installation and testing, but prior to Owner Acceptance, the Contractor shall provide the Owner with three (3) copies of the O&M Manual that:

1. Has a hard cover and incorporates tabbed dividers for each separate product and system, a detailed table of contents and typed instruction sheets with large drawings and/or schematics (not reduced in-size) folded in with reinforced margins. All sheets and drawings shall incorporate a post binder system so sheets easily can be substituted, as required.

2. Is organized into sections (by-system) and contains the Contractor's or manufacturer's complete, detailed operating and maintenance instructions, with data sheets for each piece of equipment furnished under this project.

3. Includes a spare parts list for each major piece of equipment furnished for the project, including (but not limited to) control valves, controls, pumps, motors, accessories, etc.

4. Provides a comprehensive list of maintenance procedures for preventative maintenance and troubleshooting, repair and reassembly, aligning and adjusting and disassembly.

5. Reflects the following:

    5.1 System and/or equipment descriptions and component parts, including

each item's function, normal operating characteristics and limiting conditions, performance curves with engineering data and tests (if appropriate), and the complete nomenclature and commercial number of replacement parts.

5.2 Panel circuit directories, including electrical service characteristics, controls and communications.

5.3 As-installed, color-coded wiring diagrams.

5.4 Operating procedures concerning system (or item) start-up, break-in and all normal operating instructions and sequences under normal, emergency and season conditions.

5.5 Maintenance procedures, including routine procedures and guides for trouble-shooting, disassembly, repair, reassembly, alignment, adjustment, balancing, etc.

6. System/Item servicing and lubrication schedules and a detailed list of lubricants required.

7. Manufacturer's printed operation and maintenance instructions for each system/item, including parts lists, illustrations, assembly drawings and diagrams, control diagrams, as-installed color coded piping diagrams, and chars of valve tag numbers (with location and function of each valve keyed to the flow and control diagrams).

8. Test and start-up reports.

9. System/Item service, coating and test certification reports.

PART 4 – MEASUREMENT AND PAYMENT

4.0 MEASUREMENT AND PAYMENT

A. Measurement for the following pay items shall be per lump sum for the complete, fully functional and open for operation aviation fueling system, including but not limited to tank, receiving equipment, and dispensing equipment.

B. A percentage of the lump sum price shall be paid, according to the completion schedule below, when the below construction milestones are reached in the opinion of the Engineer, and the appropriate Contractor's Certification is completed and submitted to the Owner.

Payment will be made under:

Item SS-131-4.1	220/120/75 GPM 12,000 Gallon Jet-A Fuel System Installation – per Lump Sum
Item SS-131-4.2	220/100/60 GPM 10,000 Gallon Jet-A Fuel System Installation – per Lump Sum

System Design and Material Delivered – 50% Payment: 50% payment shall be made upon:

1. Approval of the submitted design.
2. Delivery and placement of above ground storage tanks.
3. Submittal of the Contractor Certification for Design.

100% Completion: The remaining 50% payment shall be made upon:

1. Completion of a fully functional and open for operation aviation fueling facility.
2. Satisfactory final inspection by the Owner.
3. Training of airport personnel in the use of the facility.
4. Receipt of positive results for all required testing.
5. Submittal of the Contractor Certification For Construction - 100% Complete.

CONTRACTOR CERTIFICATION FOR DESIGN

Owner Name: Delta Regional Airport Authority

Airport: Delta Regional Airport

Project Description: Jet-A Fuel System Installation

Contractor: _____

Prior to approval for payment these contract documents require certification from the Contractor that he/she will comply with applicable federal, state and local codes and other requirements included in these specifications concerning aviation fueling facility design and construction. The following list of certified items includes major requirements for design. However, the list is not comprehensive, nor does it relieve the Contractor from fully complying with all applicable statutory and administrative standards. The certification must be signed by the principal or owner of the contractor's company. Every certified item below must be initialed by the principal or owner of the Contractor's company. This certification shall be completed and furnished to the Engineer before construction begins. Each certified item with a "no" response must be fully explained in an attachment to this certification.

1. **Article 1.1 - Description:** The design of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 1.1, "Description".

Yes_____No_____

2. **Article 1.2 - Quality Assurance:** The design of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 1.2, "Quality Assurance".

Yes_____No_____

3. **Article 1.3 - Construction Documentation:** The design of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 1.3, "Construction Documentation".

Yes_____No_____

4. **Article 1.4 - Delivery, Storage and Handling:** The design of the Jet-A aviation fueling facility has been completed in accordance with all items contained in article 1.4, "Delivery, Storage and Handling".

Yes_____No_____

5. **Article 1.5 - Warranty:** The design of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 1.5, "Warranty".

Yes_____No_____

6. **Article 1.6 - Coordination:** The design of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 1.6, "Coordination".

Yes_____No_____

7. **Article 1.7 – Inspection Fees, Permits and Tests:** The design of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 1.7, "Inspection Fees, Permits and Tests".

Yes_____No_____

8. **Article 2.1 – Contractor's Proposal:** The Contractor's proposal as set forth in article 2.1, "Contractor's Proposal" has been submitted to the Owner.

Yes_____No_____

9. **Article 3.1 – General:** The design of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 3.1, "General".

Yes_____No_____

10. **Article 3.2 – Collision Protection:** The design of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 3.2, "Collision Protection".

Yes_____No_____

11. **Article 3.3 – Electrical:** The design of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 3.3, "Electrical".

Yes_____No_____

12. **Article 3.4 – Testing:** The design of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 3.4, "Testing".

Yes_____No_____

* "No" answers are further explained by the enclosed attachments.

I certify that, for the project identified herein, the responses to the foregoing items are correct as marked, that the design of the self serve aviation fueling facility meets all applicable federal, state, and local codes, and that the attachments, if any, are correct and complete.

Signed: _____
Contractor's Principal or Owner

Date: _____

_____
Typed Name and Title of Contractor's Principal or Owner

CONTRACTOR CERTIFICATION FOR CONSTRUCTION - 100% COMPLETE

Owner Name: Delta Regional Airport Authority

Airport: Delta Regional Airport

Project Description: Jet-A Fuel System Installation

Contractor: _____

Prior to approval for payment these contract documents require certification from the Contractor that he/she will comply with applicable federal, state and local codes and other requirements included in these specifications concerning aviation fueling facility construction. The following list of certified items includes major requirements for this aspect of project implementation. However, the list is not comprehensive, nor does it relieve the Contractor from fully complying with all applicable statutory and administrative standards. Every certified item below must be initialed, and the certification must be signed, by a principal or owner of the Contractor's company. This certification shall be completed and furnished to the Owner at the indicated construction milestones. Each certified item with a "no" response must be fully explained in an attachment to this certification.

1. **Article 1.1 - Description:** The installation of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 1.1, "Description".

Yes_____ No_____

2. **Article 1.2 - Quality Assurance:** The installation of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 1.2, "Quality Assurance".

Yes_____ No_____

3. **Article 1.3 - Construction Documentation:** The installation of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 1.3, "Construction Documentation".

Yes_____ No_____

4. **Article 1.4 - Delivery, Storage and Handling:** The installation of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 1.4, "Delivery, Storage and Handling".

Yes_____ No_____

5. **Article 1.5 - Warranty:** The installation of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 1.5, "Warranty".

Yes_____ No_____

6. **Article 1.6 - Coordination:** The installation of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 1.6, "Coordination".

Yes_____ No_____

7. **Article 1.7 – Inspection Fees, Permits and Tests:** The installation of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 1.7, "Inspection Fees, Permits and Tests".

Yes_____No_____

8. **Article 3.1 – General:** The installation of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 3.1, "General".

Yes_____No_____

9. **Article 3.2 – Collision Protection:** The installation of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 3.2, "Collision Protection".

Yes_____No_____

10. **Article 3.3 – Electrical:** The installation of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 3.3, "Electrical".

Yes_____No_____

11. **Article 3.4 – Testing:** The installation of the JET-A aviation fueling facility has been completed in accordance with all items contained in article 3.4, "Testing".

Yes_____No_____

* "No" answers are further explained by the enclosed attachments.

100% Completion: I certify that, for the project identified herein, the responses to the foregoing items are correct as marked, the construction was completed in accordance with all applicable federal, state, and local codes, and that the attachments, if any, are correct and complete.

Signed: _____
Contractor's Principal or Owner

Date: _____

_____
Typed Name and Title of Contractor's Principal or Owner

ITEM SS-140 AGGREGATE BASE COURSE

DESCRIPTION

140-1.1 This section covers all work in connection with the construction of aggregate base course in accordance with the lines, grades, thicknesses, and typical sections as shown in the Plans or directed by the Engineer. Material shall be Class 7 unless otherwise specified in the Plans.

STANDARDS

140-2.1 Material and work (including testing) for aggregate base course shall be in accordance with SECTION 303 – AGGREGATE BASE COURSE of the Standard Specifications for Class 7, except as modified or augmented herein.

CONSTRUCTION METHODS

140-3.1 TESTS: Material will be acceptable from quarries or crushing plants which currently are, or recently have been, supplying material meeting the Standard Specifications for Aggregate Base Course. In-place density shall be determined by AASHTO T 310, Direct Transmission of not less than 98% of maximum density determined in the laboratory by AASHTO T 180, Method D.

140-3.2 MAINTENANCE: The Contractor shall maintain the base course until and during the construction of the subsequent base or surface course. Defects that develop in the base course shall be repaired by the Contractor at the Contractor's expense.

METHOD OF MEASUREMENT

140-4.1 Aggregate Base Course will be measured by the square yard of spread, compacted, and accepted aggregate base course. Each truck shall bear a plainly legible identification number and, upon being weighed, shall be given two (2) copies of a delivery ticket which will have on it the number of the truck, time of departure, truck weight, combined weight, and project name. The Engineer shall receive a copy of each delivery ticket.

BASIS OF PAYMENT

140-5.1 Aggregate Base Course, acceptably completed and measured as provided above, will be paid for at the contract unit price per square yard for “AGGREGATE BASE COURSE” for the class specified, which price shall be full compensation for furnishing the material; for hauling, placing, spreading, and compacting; and for all equipment, tools, labor, and incidentals necessary to complete the work.

Payment will be made under:

Item SS-140-5.1	Aggregate Base Course (Class 7) - per Square Yard

END OF ITEM SS-140

ITEM SS-230 CONCRETE FOR STRUCTURES

DESCRIPTION

230-1.1 This section covers the construction of a pad for the fueling facility composed of Portland cement concrete, with or without reinforcement as specified, constructed on a prepared base course in accordance with these specifications and in conformance with the lines, grades, thicknesses, typical sections, and details shown in the Plans.

STANDARDS

230-2.1 Materials, equipment, construction methods, and testing for Concrete for Structures shall be in accordance with SECTION 802 – CONCRETE STRUCTURES, CLASS S (AE) AND/OR CLASS S of the Standard Specifications, except as modified or augmented herein. Joints shall be constructed in accordance with the details in the Plans. Reinforcing steel shall be in accordance with Section 804 – REINFORCING STEEL FOR STRUCTURES of the Standard Specifications, Grade 60.

CONSTRUCTION METHODS

230-3.1 Mix Design and the Contractor's Quality Control sampling and testing shall be in accordance with SECTION 802 of the Standard Specifications, except as modified herein. Design and Quality control of Portland Cement Concrete Pavement will consist of the Contractor furnishing acceptable mix designs and performing all applicable quality control sampling and testing. Steel reinforcement shall meet the requirements of SECTION 804 – REINFORCING STEEL FOR STRUCTURES of the Standard Specifications.

230-3.2 Acceptance sampling and testing will be performed by the Engineer.

230-3.3 REPAIR OF DEFECTIVE PAVEMENT SLABS: Broken slabs, random cracks, nonworking contraction joints, major honeycombed areas, and spalls shall be replaced or repaired, as appropriate, at no cost to the Owner.

230-3.4 TOLERANCE IN PAVEMENT THICKNESS: The pavement shall be constructed in accordance with the thickness required by the typical section shown on the Plans. Tolerance shall be as described in the Standard Specifications.

At locations where the elevation of the base course is too high to allow for the PCC pavement to be placed in compliance with the thickness tolerance (0.04 foot or ½ inch), the base course will be removed and replaced to the correct grade as directed by the Engineer.

230-3.5 TOLERANCE IN PAVEMENT STRENGTH: Compressive strength shall be as specified at 28 days using test specimens prepared in accordance with ASTM C 31 and tested in accordance with ASTM C 39. Concrete samples shall be furnished by the Contractor and shall be taken in the field to determine the consistency, air content, and compressive strength of the concrete. The samples shall be taken in the presence of the Engineer, at locations determined by the Engineer. Concrete cylinders shall be made each day that the concrete is placed. Each group of cylinders shall be molded from the same batch of concrete and shall consist of a sufficient number of specimens to provide two compressive strength tests at each test age. Test ages will be 7 days and 28 days.

Concrete pavement represented by cylinders not meeting the specified strength shall be removed and replaced at the Contractor’s expense, or allowed to remain at a reduced price agreed upon in writing between the Owner and the Contractor.

230-3.6 JOINTS: Joint sealing materials shall meet the requirements of ASTM D 5893, Type SL.

Each lot or batch of silicone sealing compound shall be delivered to the job site in the manufacturer's

original sealed container. Each container shall be marked with the manufacturer's name, batch or lot number, shelf life, mixing instructions, and storage instructions and shall be accompanied by the manufacturer's certification stating that the compound meets the requirements of this specification.

Backer rod shall meet the requirements of ASTM D 5249 and shall be both non-reactive and non-adhesive to the concrete and the separation material.

Joints shall be sealed as soon after completion of the curing period as feasible and before the pavement is opened to traffic, including construction equipment. The pavement temperature shall be above 50°F (10°C) before installation of silicone joint sealing material.

Immediately after saw cutting is complete the resulting cement slurry shall be completely removed from the joint by water washing (less than 100 psi pressure). When the surfaces are clean and dry, and just prior to placement of the sealant, compressed air shall be used to blow out the joint and remove all residual dust. Air compressors shall be equipped with suitable traps capable of removing all free water and oil from the compressed air and shall be capable of furnishing air with a pressure greater than 90 psi.

Joints shall be inspected for proper width, depth, alignment, and preparation, and shall be approved by the Engineer before sealing is allowed. Sealant shall be installed in accordance with the following requirements:

A backer rod or bond breaker shall be installed as shown on the plans, prior to placement of the joint sealer. The backing material shall be placed as shown on the plans and shall be non-adhesive to the concrete or the sealant material. The self-leveling sealant shall be applied in a continuous operation, by means of approved pressure equipment that will force the sealing material to the bottom of the joint and completely fill the joint without spilling the material on the surface of the pavement. Sealant which does not bond to the concrete surface of the joint walls, contains voids, or fails to set up to a tack-free condition will be rejected and replaced by the Contractor at no additional cost. Before sealing the joints, the Contractor shall demonstrate that the equipment and procedures for preparing, mixing, and placing the sealant will produce a satisfactory joint seal. This shall include the preparation and application of an adequate amount of the sealant that will demonstrate, to the satisfaction of the Engineer, the installation of the sealant.

METHOD OF MEASUREMENT

230-4.1 Class S (AE) Concrete will be measured by the square yard. The width for measurement will be the width as constructed in accordance with the Plans and typical cross sections or as directed by the Engineer.

BASIS OF PAYMENT

230-5.1 Work completed and accepted under this item and measured as provided above will be paid for at the contract unit prices bid per square yard for Class S (AE) CONCRETE, of the thickness specified, which price shall be full compensation for furnishing, transporting and placing materials, including steel bars for joints and all other joint materials; for reinforcement in designated slabs; for the preparation and processing of materials; for mixing, spreading, vibrating, finishing, and curing; for sawing, filling, and sealing joints; and for all labor, equipment, tools and incidentals necessary to complete the work.

Payment will be made under:

Item SS-230-5.1 Class S (AE) Concrete - per Square Yard

END OF SECTION SS-230

ITEM SS-280 SOLID SODDING

DESCRIPTION

280-1.1 This section covers the furnishing and placing of approved Bermuda sod, fertilizer, and water to form solid mats on areas shown on the Plans or as directed by the Engineer.

STANDARDS

280-2.1 Materials and work shall be in accordance with SECTION 624 – SOLID SODDING of the Standard Specifications, except as herein modified or augmented.

CONSTRUCTION METHODS

280-3.1 Areas to be sodded shall be shaped and graded to an elevation in such manner that they will, after placement of sod, conform to the typical sections.

280-3.2 Immediately following the sodding operations, all areas shall be cleaned of all debris, excess sod, topsoil, or other objectionable matter. All such clean-up operations shall be completed before sodded areas are measured for payment as described below.

METHOD OF MEASUREMENT

280-4.1 Areas covered by living sod completed and accepted will be measured by the square yard to the nearest square yard.

BASIS OF PAYMENT

280-5.1 Solid sodding acceptably completed, and measured as provided above, will be paid for at the contract unit price per square yard bid for “SODDING,” which price shall be full compensation for furnishing and placing all materials, including sod, fertilizer, and water; for clean-up work; and for all equipment, tools, labor and incidentals necessary to complete the work.

Payment will be made under:

Item SS-280-5.1	Sodding - per Square Yard

END OF ITEM SS-280

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ITEM SS-281 SAFETY BOLLARDS

DESCRIPTION

281-1.1 This item shall consist of furnishing and installing bollards to the tolerances specified and to the lines, locations and grades directed by the Engineer.

MATERIAL REQUIREMENTS

281-2.1 Bollards shall be Schedule 40 black steel or cast iron.

281-2.2 Concrete shall be a commercial grade mix with a minimum 28-day compressive strength of 3,500 psi, using a 1-inch maximum size course aggregate, as determined by test cylinders made in accordance with ASTM C 31 and testing in accordance with ASTM C 39.

281-2.3 Epoxy used in the installation shall conform to the requirements of ASTM C 881, Type I, Grade 3, Class C.

CONSTRUCTION REQUIREMENTS

281-3.1 The steel bollards shall be installed in the ramp at the locations and in accordance with the details shown in plans and in accordance with Section 312 of the International Fire Code.

METHOD OF MEASUREMENT

281-4.1 Bollards acceptably installed will be measured per each in place, completed, and accepted by the Engineer.

BASIS OF PAYMENT

281-5.1 Bollards installed and measured as provided above will be paid for at the unit price bid per each. This price shall be full compensation for all furnishing and installing all materials and for all equipment, tools, labor and incidentals necessary to complete the work.

Payment will be made under:

Item SS-281-5.1	Safety Bollards – per Each

END OF ITEM SS-281

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ITEM SS-300 BASIC ELECTRICAL REQUIREMENTS

DESCRIPTION

300-1.1 This item shall consist of furnishing and installing complete electrical systems as defined in the plans and in these specifications. The work includes the installation, connection and testing of new electrical systems, equipment and all required appurtenances to construct and demonstrate proper operation of the completed electrical systems.

300-1.2 The Contractor shall maintain current copies of all referenced and applicable standards on the job site. The Contractor is responsible to make known to the Engineer any conflict between plans and specifications that he observes or of which he is made aware.

300-1.3 This work shall consist of lockout/tagout in accordance with the design and details shown in the plans and in compliance with these specification documents.

300-1.4 This work shall also consist of modifications to the existing airport electrical vault and fuel farm rack in accordance with the design and dimensions shown in the plans. This work shall also include renovation of the existing electrical vault and fuel farm rack and the demolition and removal of equipment and items in the existing electrical vault building and fuel farm rack in accordance with the details shown in the plans.

EQUIPMENT AND MATERIALS

300-2.1 STANDARDS.

a. Applicable National Fire Protection Association (NFPA) codes, including but not limited to:
   (1) NFPA 70 - National Electrical Code.
   (2) NFPA 70E - Standard for Electrical Safety in the Workplace.
   (3) NFPA 101 - Life Safety Code.
   (4) Internet Website: http://www.nfpa.org

b. Applicable Code of Federal Regulations (CFR) codes, including but not limited to:
   (1) 29 CFR 1910 - Occupational Safety and Health Standards (OSHA)
   (2) 29 CFR 1926 - Safety and Health Regulations for Construction.
   (3) Internet Website: http://www.gpoaccess.gov/cfr/index.html

c. ANSI/IEEE C2 - National Electrical Safety Code.

d. NECA 1 – Standard for Good Workmanship in Electrical Construction.

e. Applicable Federal, State and Local Electrical Codes.

f. Applicable Federal, State and Local Energy Codes.

g. Applicable Federal, State and Local Building Codes.

h. Applicable Federal, State and Local Fire Codes.

i. Applicable City Electrical Code.

j. Applicable City Ordinances pertaining to electrical work.

k. Applicable Federal, State and Local - Environmental, Health and Safety Laws and Regulations.

Contractor shall utilize the most current editions of standards, which are current at time of bid and as recognized by the Authority Having Jurisdiction for the respective standard.

300-2.2 GENERAL.

a. All equipment and materials covered by referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the Engineer. All equipment and materials shall be new and meet applicable manufacturer’s standards. All electrical components and products shall be tested and listed by an OSHA accepted,

nationally recognized testing laboratory (NRTL) to conform to the standards indicated in these contract documents and to the industry standards required in the NEC, NEMA, IEEE, UL, and applicable FAA advisory circulars.

b. Manufacturer's certifications shall not relieve the Contractor of the Contractor's responsibility to provide materials in accordance with these specifications and acceptable to the Engineer. Materials supplied and/or installed that do not materially comply with these specifications shall be removed, when directed by the Engineer and replaced with materials, which do comply with these specifications, at the sole cost of the Contractor.

c. All materials and equipment used to construct this item shall be submitted to the Engineer for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify pertinent products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components or electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be boldly and clearly made with arrows or circles (highlighting is not acceptable). Contractor is solely responsible for delays in project accruing directly or indirectly from late submissions or resubmissions of submittals.

d. The data submitted shall be sufficient, in the opinion of the Engineer, to determine compliance with the Contract Documents plans and specifications. The Engineer reserves the right to reject all equipment, materials or procedures, which, in the Engineer's opinion, does not meet the system design and the standards and codes, specified herein.

e. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

f. Refer to Special Provisions Item C-13 Submittals for electronic or paper submittal requirements for Engineer's review.

g. After approval of submitted equipment, the Contractor shall supply the following Operation and Maintenance Manual documentation to the Owner. Two (2) complete sets of documentation shall be supplied for each model of equipment. The documentation shall be securely bound in heavy-duty 3-ring binders. The information for each piece of equipment shall be indexed using typewritten label tabs. The spine of each binder shall have a typewritten label, which indicates the included equipment types. The documentation shall include:

(1) Approved Submittals and Shop Drawings
(2) State Contractors License with Electrical Classification
(3) Master, Journeyman and Apprentice Electrician Licenses and Certifications
(4) Lockout/Tagout Program
(5) Installation Manuals
(6) Operation Manuals
(7) Maintenance Manuals
(8) Parts Lists, including recommended spare parts. Recommended spare parts shall be furnished with the respective equipment.
(9) Ground Rod Impedance Test Reports
(10) Cable Pulling Tension Value Logs

h. After approval of the O&M Manuals, the Contractor shall provide three (3) complete electronic copies of all documentation in Adobe PDF file format on CD-R (non-rewriteable) discs or flash

drive storage media. The electronic files shall contain searchable text and include a hyperlink index for ease in locating information with the PDF file.

i. All requirements herein Item SS-300 shall be applicable to all referenced sections in these contract documents and applicable to all sections, which reference Item SS-300.

300-2.3 OPERATION AND MAINTENANCE DATA.

Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment. Provide bound hard copies and electronic copies as noted in section 300-2.2.

a. Certificate of Substantial Completion, Release and Contractor's Affidavit, executed copies.

b. Final approved equipment submittals, including product data sheets and shop drawings, clearly labeled.

c. Installation manuals: Description of function, installation and calibration manuals, normal operating characteristics and limitations, performance curves, engineering data and tests, and complete nomenclature and commercial numbers of all replaceable parts.

d. Operations manuals: Manufacturer's printed operating instructions and procedures to include start-up, break-in, routine and normal operating instructions; regulation, control, stopping, shutdown, and emergency instructions; summer and winter operating instructions; and all programming and equipment settings.

e. Maintenance manuals: Maintenance procedures for routine preventative maintenance and troubleshooting; disassembly, repair, and reassembly; aligning and adjusting instructions.

f. Service manuals: Servicing instructions and lubrication charts and schedules, including the names and telephone numbers of personnel to contact for both routine periodic and warranty service for equipment and materials provided under this Specification.

300-2.4 SWITCHES. Main disconnect switches 600 volt or less shall be UL service entrance rated, industrial circuit breaker type, pad-lockable, heavy duty type with neutral and ground kits and poles and ratings as indicated on the drawings and suitable for the application indicated. Exterior switches shall be NEMA 3R rated.

300-2.5 OVERCURRENT PROTECTIVE DEVICES.

Circuit Breakers: Circuit breakers shall be the molded-case type, as indicated, with each pole equipped with inverse time and instantaneous overcurrent tripping devices. Circuit breakers shall be UL listed. Single pole breakers shall be full module size; two poles shall not be installed in a single module. Multi-pole breakers shall be of the common-trip type having a single operating handle, and for sizes of 50 amperes or less may consist of single pole breakers permanently assembled at the factory into a multi-pole unit. Circuit breakers used for motor disconnects and not in sight of the motor controller shall be capable of being locked in the open position. Minimum interrupting rating shall be as shown.

Fuses: All fuses shall be Bussman; Gould-Shawmut, or equal. Plug fuses are not acceptable. Cartridge fuses shall be rated at 250 or 600 volts, as applicable, and shall conform to the requirements of UL 198 and NEMA Standard FU-1. 600 volts or less fuses shall be rated at 200,000 Amperes Interrupting Capacity.

300-2.6 PANELBOARDS. Furnish and install panelboards as indicated on the Drawings. Breakers shall be bolted type and have available fault current interrupting capacity as scheduled. Single pole breakers shall be full module size; two poles shall not be installed in a single module. All multi-pole breakers shall be common trip.

Panels shall be fully rated; series rated panels are not acceptable.

The panels shall be load balanced by measuring the loads and making circuit changes. Record the load readings before and after changes and submit test records. Differences exceeding 20 percent between phase loads, within a panelboard, are not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

The panel shall be UL listed, service entrance rated, and fully bussed with copper bussing, copper neutral bussing, and copper ground bar. All bolts used to connect current carrying parts together shall be front accessible. The panel shall have a securely attached metal nameplate listing the manufacturer, shop order number, panel type, voltage, ampacity and short circuit withstand rating. An individual terminal or lug shall be provided for each neutral allowing one wire per terminal.

The panel shall be surface mounted with semi-flush locking doors and matching keys. The Contractor shall provide a typed directory and install the same in the holder behind the transparent protective covering in the panels. Provide an exterior nameplate with panel and name, mounted at the top of the panel above the door. Doors shall match enclosures. Indoor surface mounted enclosures shall have pre-punched knockouts. The panels shall be General Electric, Square D, Cutler Hammer, or approved equal.

Panelboards and breakers shall conform to the requirements of Fed. Spec. W-P-115.

300-2.7 SURGE PROTECTIVE DEVICES.

Provide a surge protective device at the lighting panelboard as indicated in the plans and make all final connections. Lead lengths shall not exceed 18 inches.

SPD Type 2 (building exterior or interior mounted adjacent to panelboard; see plans for locations; coordinate exact installation requirements in the field with the Engineer prior to work):

a. 240/120-volt, 1-phase, 3-wire; connected via dedicated circuit breaker to panelboard.
b. UL 1449 Fourth Edition Type 2 Listed
c. UL 1283 Listed for Type 2
d. Voltage protection rating 700V for 240V systems L-N
e. Surge rating 100,000 amps per phase minimum
f. SCCR: Equal or exceed 200 kA
g. Inominal Rating: 20 kA
h. Undervoltage detection, phase and power loss monitoring
i. LED status indicator lights, audible alarm, transient counter, dry contacts
j. NEMA 3R enclosure
k. 5-year warranty

Provide surge protective devices to protect incoming voltage power circuits serving field equipment. Provide SPD Type 1 UL listed units designed for indoor or outdoor installations, with LED operational status lights and back-nipple mounting. For 120V or 120/240V, furnish units having minimum short circuit rating 25kA.

300-2.8 CONTROL AND TIMING RELAYS. All relays shall be plug-in type relays and shall be furnished with socket base and all required mounting accessories; provide Allen-Bradley Bulletin 700 Type or approved equal. Provide relays with contacts meeting the ampacity rating requirements as indicated in the plans and as required for the equipment load to be connected and controlled.

300-2.9 WIRE.

For ratings up to 600 volts, moisture and heat resistant thermoplastic wire conforming to Commercial Item Description A-A-59544A Type THWN-2 shall be used. The wires shall be of the type, size, number of conductors, and voltage shown in the plans or in the proposal.

Service, underground feeder, and underground branch circuit wiring shall be minimum Type THHN/THWN-2 unless otherwise noted.

Indoor feeder and indoor branch circuit wiring shall be minimum Type THHN/THWN-2 unless otherwise noted.

Unless otherwise indicated, conductors No. 10 AWG and smaller shall be solid, and conductors No. 8 AWG and larger shall be stranded.

For electrical work of 600 volts or less, all conductors, terminations, terminal blocks, lugs, connectors, devices and equipment shall be listed, marked, and rated 75 degrees C minimum unless otherwise noted.

Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips that will not damage cables or raceway. Pull ropes and pull wires shall have sufficient tensile strength for the cable(s) to be pulled and installed. Damaged cable or raceway shall be replaced at no additional cost to the Owner. Calculate and do not exceed the maximum allowable pulling tension or maximum allowable sidewall bearing pressure for all conductors and cables.

Install pull wires in empty raceways. Use a polypropylene plastic line with not less than 200-pound tensile strength. Secure and leave at least 12 inches of slack at each end of pull wire to prevent it from slipping back into the conduit. Cap spare raceways with removable tapered plugs, designed for this purpose.

300-2.10 CONDUIT. Rigid galvanized steel (RGS) conduit and fittings shall be hot dipped galvanized inside and out and conform to the requirements of Underwriters Laboratories Standards 6, 514B, and 1242. All RGS conduits or RGS elbows installed below grade, in concrete, permanently wet locations or other similar environments shall be painted with a 10-mil thick coat of asphaltum sealer or shall have a factory-bonded polyvinyl chloride (PVC) cover. Any exposed galvanizing or steel shall be coated with 10 mils of asphaltum sealer. When using PVC coated RGS conduit, care shall be exercised not to damage the factory PVC coating. Damaged PVC coating shall be repaired per the manufacturer's written instructions. In lieu of PVC coated RGS, corrosion wrap tape shall be permitted to be used where RGS is in contact with direct earth."

PLASTIC CONDUIT (for use below grade only). Plastic conduit and fittings-shall conform to the following requirements:

- UL 514B covers W-C-1094-Conduit fittings all types, classes 1 thru 3 and 6 thru 10.
- UL 514C covers W-C-1094- all types, Class 5 junction box and cover in plastic (PVC).
- UL 651 covers W-C-1094-Rigid PVC Conduit, types I and II, Class 4.
- UL 651A covers W-C-1094-Rigid PVC Conduit and high-density polyethylene (HDPE) Conduit type III and Class 4.

Underwriters Laboratories Standards UL-651 and Article 352 of the current National Electrical Code shall be one of the following, as shown on the plans:

a. Type I–Schedule 40 and Schedule 80 PVC suitable for underground use either direct-buried or encased in concrete.

b. Type II–Schedule 40 PVC suitable for either above ground or underground use.

c. Type III – Schedule 80 PVC suitable for either above ground or underground use either direct-buried or encased in concrete.

d. Type III –HDPE pipe, minimum standard dimensional ratio (SDR) 11, suitable for placement with directional boring under pavement.

The type of solvent cement shall be as recommended by the conduit/fitting manufacturer.

300-2.11 TAPE. Rubber and plastic electrical tapes shall be Scotch Electrical Tape Numbers 23 and 88, respectively, as manufactured by the Minnesota Mining and Manufacturing Company, or an approved equal.

The electrical installation shall conform to the requirements of the latest edition of National Fire Protection Association, NFPA-70, National Electrical Code.

Copies of the National Electrical Code may be obtained from the National Fire Protection Associations, Inc., One Batterymarch Park, Quincy, Massachusetts 02269.

CONSTRUCTION METHODS

300-3.1 LOCKOUT/TAGOUT PROGRAM. The Contractor shall provide a complete copy of an electrical energy source Lockout/Tagout Program to the Owner, with copy to the Engineer. The document shall clearly identify the on-site master electricians and their contact information, including office and mobile telephone numbers.

The Lockout/Tagout Program shall comply with Part 1910 – Occupational Safety and Health Standards (OSHA) Subpart S – Electrical, and meet the requirements of 29 CFR 1910.147, The Control of Hazardous Energy (Lockout/Tagout), including requirements listed in 1910.331 through 1910.335.

Implementation of the Lockout/Tagout Program and all other related safety requirements are the sole responsibility of the Contractor.

300-3.2 SAFETY PROGRAM. The Contractor shall implement an electrical safety program that complies with NFPA 70E and 29 CFR 1926.

Implementation of the Electrical Safety Program, determining and providing proper Personal Protective Equipment (PPE), training and enforcing personnel to wear the prescribed PPE, conducting work area safety inspections (including correcting deficiencies), and all other related safety requirements are the sole responsibility of the Contractor.

All work involved in the preparation and implementation of the safety program will not be measured for separate payment but will be considered subsidiary to the lockout/tagout bid item.

300-3.3 GENERAL.

The Contractor shall be responsible for coordinating all electrical work with the Utility. The Contractor shall provide temporary service conductors and raceway system. The Contractor shall then provide and connect permanent service conductors and raceway system after the completion.

All secondary conductors and controls, signaling and lighting shown in or on buildings are included in this project. Electrical service shall be extended from the service equipment as indicated.

In general, the various electrical equipment and material to be installed by the various trades under this specification shall be run as indicated, as specified herein, as required by particular conditions at the site, and as required to conform to the generally accepted standards to complete the work in a neat and satisfactory manner. The following is a general outline concerning the running of various systems and is to be expected where the drawings or conditions at the buildings necessitate deviating from these standards.

The drawings and specifications are complementary; any work required by one, but not by the other, shall be performed as though required by both.

The Contractor shall maintain copies of all equipment installation manuals on site during construction.

All conduits shall be run exposed in the equipment rooms or run concealed as indicated.

The construction details of the building are illustrated on the drawings. Each Contractor shall thoroughly acquaint himself with the details before submitting his bid as no allowances will be made because of the Contractor's unfamiliarity with these details.

The electrical plans do not give exact locations, etc., and do not show all the offsets, control lines, junction boxes, and other installation details. Each Contractor shall carefully lay out his work at the site to conform to the job conditions, to conform to details of installation supplied by the manufacturers of the equipment to be installed, and thereby to provide complete operating systems.

The electrical plans show diagrammatically the locations of the various electrical outlets and apparatus and the method of circulating and controlling them. Exact locations of these outlets and apparatus shall be determined by reference to the general plans and to all detail drawings, etc., by measurements at the buildings, and in cooperation with other crafts, and in all cases shall be subject to the approval of the Engineer. The Engineer reserves the right to make any reasonable change in location of any outlet or apparatus before installation, without additional cost to the Owner.

These Specifications and the accompanying Drawings are intended to cover systems which will not interfere with the structure of the buildings, which will fit into the several available spaces, and which will insure complete and satisfactory systems. Each bidder shall be responsible for the proper fitting of his material and apparatus into the buildings.

Should the particular equipment which any bidder proposes to install require other space conditions than those indicated on the Drawings, he shall arrange for such space with the Engineer before submitting his bid. Should changes become necessary because of failure to comply with this clause, the Contractor shall make such changes at the Contractor's expense.

Should the particular equipment which any bidder proposes to install require other installation methods, such as larger light base junction structures, etc., he shall include all such equipment and appurtenances in his bid. Should changes become necessary because of failure to coordinate equipment requirements and comply with this clause, the Contractor shall make such changes at the Contractor’s expense.

The Contractor shall be responsible to see that each party furnishes electrical equipment which meets the electrical requirements specified herein and that all systems work together to produce the specified operation.

Where two or more units of the same kind or class of equipment are required, these shall be products of a single manufacturer; however, the component parts need not be the products of one manufacturer.

Each Contractor shall submit working scale drawings of all his apparatus and equipment which in any way varies from these Specifications and Plans, which shall be checked by the Engineer and approved before the work is started, and interferences with the structural conditions shall be corrected by the Contractor before the work proceeds.

Electrical equipment, such as switchgear, switchboards, panelboards, load centers and other power supply equipment, shall not be used as a common enclosure, pull box or junction box for routing conductors of different systems, unless the equipment is specifically designed for this purpose and indicated as such on the Plans.

All electrical equipment shall be securely mounted as indicated in the plans, as required by the contract specifications, as required by guidelines and codes, and as required by the manufacturer using hardware compliant with the environmental conditions.

Interior components of electrical enclosures shall be securely mounted using appropriate hardware within the enclosure. Adhesives or adhesive tapes/strips are not allowed and are prohibited.

Electrical components, including but not limited to, relays, circuit boards, electronics, etc., shall be installed within approved enclosures.

The Contractor shall keep ends of conduits, including those extending through roofs, equipment and fixtures covered or closed with caps or plugs to prevent foreign material from entering during construction.

Where portions of raceways are known to be subjected to different temperatures, where condensation is a problem, and where passing from interior to exterior of a building, the portion of raceway or sleeve shall be filled with an approved material to prevent the circulation of air, prevent condensation, and prevent moisture entry. Sealing of raceways shall not occur until after the conductors and cables have been installed, tested and accepted by the Engineer.

The Contractor shall install any temporary lines and connections required to maintain electric services and safely remove and dispose of them when complete.

All temporary wiring shall conform to OSHA standards. Remove temporary services when work is complete. Any damage to electrical equipment caused by the Contractor shall be repaired at no cost to the Owner.

All non-current carrying parts and neutrals shall be grounded as indicated on the Drawings or as required by the Codes.

White and/or gray outer finish conductors may only be used as grounded conductors or neutral conductors in accordance with NEC.

Install insulated green equipment grounding conductors with all feeder and branch circuits.

Provide separate insulated equipment grounding conductors from grounding system to each electrical equipment, telecommunication equipment, other special electrical system equipment, and appurtenance item location in accordance with NFPA 70 and other applicable standard requirements.

The bidder shall inspect the site, thoroughly acquaint himself with conditions to be met and work to be accomplished. Failure to comply with this shall not constitute grounds for any additional payments.

Where electrical equipment is installed that causes electrical noise interference with other systems either existing or installed under this contract, the offending equipment shall be equipped with isolating transformers, filters, reactors, shielding, or any other means as required for the satisfactory suppression of the interferences, as determined by the Engineer.

All junction boxes, expansion joints, flexible connections, instruments and similar items requiring servicing or repairs shall be installed in an accessible location.

All salvage and equipment removed by the work shall remain the property of the Owner. Material removed from the project shall be stored on the project site where and as directed. Debris shall be removed from the job site and disposed of by the Contractor.

The Contractor shall maintain his work area clean and orderly at all times. Debris shall be removed promptly. The electrical system shall be thoroughly cleaned inside and outside of all enclosures to remove all metal shavings or other work debris, dust, concrete splatter, plaster, paint and lint.

The Contractor shall do all excavating and backfilling made necessary by electrical work and shall remove all surplus or supply any earth required to establish the proper finished grade.

The Contractor shall do all cutting and patching made necessary by electrical work, but in no case shall he cut through or into any structural member without written permission of the Engineer.

All steel conduits, supports, channels, fittings, nuts, bolts, etc. shall be galvanized, corrosion-resistant type unless otherwise noted.

An approved anti-seize compound shall be used on all threads to prevent equipment and thread damage.

Equipment shall be installed in accordance with manufacturer's recommendation. Make all final electrical connections and coordinate all items with other trades.

Correct unnecessary damage caused due to installation of work, brought about through carelessness or lack of coordination. All openings, sleeves, and holes to be properly sealed, fire proofed and waterproofed. Any water leaks arising from project construction will be immediately corrected to the satisfaction of the Owner and the Engineer.

300-3.4 POWER SUPPLY EQUIPMENT. Electrical equipment, such as switchgear, switchboards, panelboards, load centers, and other power supply equipment, shall not be used as a common enclosure, pull box or junction box for routing conductors of different systems, unless the equipment is specifically designed for this purpose and indicated as such on the Plans.

If shown in the plans, the power supply equipment shall be set on concrete housekeeping pads to provide a minimum space of 3-1/2 inches between the equipment and the floor. All equipment shall be secured to the floor or wall in accordance with the manufacturer's recommendations and these contract document requirements.

300-3.5 DUCT AND CONDUIT. Conduits shall be galvanized rigid steel unless otherwise indicated or specified. Refer to one-line diagram conduit notes for specific requirements.

Conduit runs shall be one trade size continuously with no reducers allowed. Changing of conduit size is only permitted at manholes, handholes, and boxes and conduit bodies used as outlet, device, junction, or pull boxes, including approved, listed fittings with removable covers.

Use an approved, listed adapter/coupling to convert to other types of conduit. Reducer couplings are not allowed.

For underground service entrance, feeder and branch circuit raceways, offsets and bends over 30 degrees and elbows in Schedule 40 PVC conduit runs shall be Schedule 80 PVC conduit. Underground service entrance PVC conduits shall be concrete encased unless otherwise noted. Underground PVC conduits shall be concrete encased under driveways, roadways, parking lots and other paved areas.

Non-encased conduits shall convert to concrete encased ducts under all paved areas and shall extend at least 3 feet beyond the edges of the pavement unless otherwise noted.

The Contractor shall provide a staked centerline or offset for the duct and manhole system - utilizing the drawings and a site inspection of the existing grounds, grades and utility crossings. The Owner and Engineer shall approve the staking plan that shall be indicated on a drawing submitted for approval before starting any excavation for the ducts. The staking plan shall indicate the proposed location, elevation and dimensions of manholes and handholes. The Engineer reserves the right to adjust duct, manhole and handhole locations and elevations before installation at no additional cost to the Owner.

The bottom surface of trenches shall be essentially smooth and free from coarse aggregate.

Install grounding-and-bonding type bushings and bonding jumpers on all service entrance conduits and on all feeder and branch circuit conduits.

Use conduit bushings at each conduit termination. Where No. 4 AWG or larger ungrounded wire is installed, use insulated bushings.

When EMT is allowed, utilize only steel compression fittings. Die-cast and set-screw fittings shall not be used.

Use double lock nuts at each conduit termination. Use weather tight hubs in damp and wet locations. Sealing lock nuts shall not be used.

Grounding continuity to rigid metal conduit shall be accomplished by grounding bushings/adapters with lugs for connection to grounding counterpoise and/or grounding electrode conductor as defined by NEC.

All exposed wiring shall be run in not less than 1/2 inch (12 mm) galvanized rigid steel conduit. All conduits shall be installed to provide for drainage. Conduit shall be attached to wooden structures with galvanized pipe straps and fastened with galvanized wood screws not less than No. 8 nor less than 1-1/4 inches (31 mm) long. There shall be at least two fastenings for each 10-foot (3 m) length.

Existing ducts may require clearing before use. It is the responsibility of the Contractor to locate the existing ducts, identify empty or partially empty conduits and clear the conduits as required. Where new cable is to be installed in existing duct, the full length of the duct shall be cleared of debris by mechanical means before the installation of the new cable. Acceptable methods of clearing existing ducts include "hydro-jetting" and "roto-rooting." All existing cables in each re-used duct shall be replaced for the length of the duct and properly spliced in a method approved by the Engineer. Clearing of existing duct banks or conduits is incidental to the cable pay item.

Dedicated ground rods shall be installed and exothermically welded to the counterpoise wire at each end of a duct bank crossing under pavement.

For concrete markers, the impression of letters shall be done in a manner, approved by the Engineer, to affect a neat, professional appearance. The letters shall be stenciled neatly. After placement, all markers shall be given one coat of high-visibility aviation orange paint, as approved by the Engineer.

300-3.6 BACKFILL, COMPACTION, AND RESTORATION. Refer to the backfill, compaction and restoration requirements within Item P-152 where other compaction requirements are specified (under pavements, embankments, etc.)

Trenches shall be backfilled and compacted in 6” layers to 90% maximum density for cohesive soils and to 100% maximum density for non-cohesive soils, as determined by ASTM D1557. The in-place field density shall be determined in accordance with ASTM D1556, D2167, or D6938.

Backfilling from two directions will not be allowed. No backfilling will be accomplished without the approval of the Engineer or Construction Observer. The Contractor shall ensure all trenches are inspected prior to being covered and prior to encasement. Any uninspected trenches which are prematurely covered shall

be exposed for inspection at the Engineer and Owner's convenience at no additional cost to the Owner. The Construction Observer will coordinate with the Contractor for advance scheduling of trench inspection.

Following restoration of all trenching near airport movement surfaces, the Contractor shall thoroughly visually inspect the area for foreign object debris (FOD) and remove any such FOD that is found. This FOD inspection and removal shall be considered incidental to the pay item of which it is a component part.

300-3.7 CABLE AND UTILITY COORDINATION. The existing and the proposed locations of lighting cable are approximate. The Contractor shall be responsible for field locating and identifying the existing lighting circuits to determine their exact routing. The Contractor shall also be responsible for maintaining the lighting systems in a working condition until the new lighting circuits have been installed and tested. The Contractor shall proactively and expeditiously accomplish this cable identification work prior to performing any modifications to the lighting circuits. Coordinate identification work with the Owner and Engineer and make all corrections, additions, etc. on the as-built drawings.

Underground cable and utilities exist within and adjacent to the limits of construction. An attempt has been made to locate these cables and utilities on the Plans. All existing cable and utilities may not be shown on the Plans and the location of the cables and utilities shown may vary from the location shown on the Plans. Prior to beginning of any type of excavation, the Contractor shall contact the utilities, the airport maintenance staff, FAA field personnel and other organizations as required and make arrangements for the location of the utilities on the ground. The Contractor shall maintain the cable and utility location markings until they are no longer required.

The Contractor shall replace or repair any underground cable or utility that has been damaged by the Contractor during excavation to the satisfaction of the owner of the cable or utility at no additional cost to the Owner.

The Contractor shall be responsible for all coordination work associated with existing and new utilities, their marking, their identification, proposed outages/shutoffs, connections, cutovers, etc.

300-3.8 WIRING. The Contractor shall furnish all labor and materials and shall make complete electrical connections in accordance with the wiring diagram furnished with the project plans. The electrical installation shall conform to the requirements of the latest edition of National Fire Protection Association, NFPA-70, National Electrical Code.

Provide color-coding for phase identification.

Colors for 240/120V Circuits:

a. Phase A: Black
b. Phase B: Red
c. Neutral: White

All new electrical cable shall be marked using color-coded plastic electrical tape, which is specifically designed for application on polyethylene-jacketed cable. The tape shall be applied as detailed on the Plans. Marking tape shall be Scotch 35 Vinyl Plastic tape or approved equal.

300-3.9 MARKING AND LABELING. Properly identify all electrical equipment.

Wire/Cable Designation Tape Markers:

a. Indoor Dry Locations: UL Recognized Materials, vinyl or vinyl-cloth, self-adhesive, wraparound, self-laminating, cable/conductor markers with computer printer-generated numbers and letters, minimum 1" width. Provide Brady B-427 with thermal transfer print type or approved equal.

b. Outdoor Locations and Indoor Wet and Damp Locations: White polyolefin, non-adhesive, full circle, heat-shrinkable sleeve, cable/conductor markers with computer printer-generated numbers and letters, minimum 1" width. Provide Brady B-342 with thermal transfer print type or approved equal.

Properly identify all electrical equipment, including but not limited to the following:

a. Panelboards and individual devices within it.
b. Safety switches and disconnects.
c. Contactors including all branch circuits.
d. Starters and relays.

Use permanently attached black phenolic plates with 3/8" white engraved lettering on the face of each, attached with minimum two sheet metal screws. Starters and relays connected under this Specification shall be identified whether furnished under this Specification or under other Specifications of this contract. Plates shall be indoor or outdoor rated as required by installation location.

Panelboard identification plates shall indicate panel by identification name, voltage system, ampacity rating and type, AIC rating, and feeder source description.

Identify each receptacle, light switch, junction box, etc. with panelboard identification and circuit number. For all wiring device covers, use hot, stamped, or engraved machine printing with black-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.

Identify fire alarm junction boxes with red covers and mechanical control junction boxes with blue covers.

Install all identification as required by current adopted editions of the NFPA 70 - National Electrical Code and NFPA 70E - Standard for Electrical Safety in the Workplace.

300-3.10 REMOVAL AND RELOCATION OF EXISTING EQUIPMENT. The Contractor shall carefully remove all salvageable equipment as indicated on the Plans. Any equipment which is damaged during the removal operation shall be subject to a reduction in payment for removal of the equipment. All equipment which is removed during this project shall be transported to a site on the Airfield or removed from the Airfield and properly disposed of as directed by the Owner and the Engineer.

The Contractor shall carefully relocate existing equipment as indicated in the Plans. Any equipment that is damaged during the relocation operation shall be replaced at no additional cost to the Owner.

Any existing electrical equipment, conduit, cables, etc. that is damaged during construction shall be replaced at no additional cost to the Owner to the satisfaction of the Owner and the Engineer.

300-3.11 CERTIFICATION AND PERFORMANCE. Equipment and materials covered by FAA Advisory Circulars are referred to by item numbers and approved equipment is listed within the AC 150/5345-53 Airport Lighting Equipment Certification Program's monthly Addendum, which contains a complete and updated listing of the certified equipment and manufacturers and is listed in the FAA Buy American Preference equipment list, which is also updated monthly. The Contractor shall provide and install new certified equipment that works reliably and efficiently with the existing equipment to remain in service. The Contractor shall provide any additional accessories and/or appurtenances required to provide fully functional electrical systems to the satisfaction of the Owner and Engineer, at no additional cost to the Owner.

The Contractor shall ascertain that all lighting system components furnished (including FAA certified and approved equipment) are compatible in all respects with each other and the remainder of the new and existing systems. Any non-compatible components furnished by the Contractor shall be replaced at no additional cost to the Owner with a similar unit that is approved by the Engineer and compatible with the remainder of the airport lighting system.

300-3.12 AS-BUILT DRAWINGS. The Contractor shall keep one (1) full-sized set of prints for As-Built Drawings at the site, in good order, and annotated to show all changes made during the construction process.

The Contractor shall locate all underground and concealed work, identifying all equipment, conduit, circuit numbers, motors, feeders, breakers, switches, and starters. The Contractor will certify accuracy by endorsement. As-Built drawings shall be correct in every detail, so Owner can properly operate, maintain, and repair exposed and concealed work.

The As-Built drawings shall indicate all control system labeling and marking.

The Contractor shall store the As-Built drawings on the site. Drawings shall not be rolled. Make corrections, additions, etc., with pencil, with date and authorization of change.

As-Built drawings must be submitted to Engineer before project will be accepted.

Minor deviations from the Plans and Specifications shall be as approved by the Engineer.

Upon completion of the installation, the Contractor shall adjust the systems to the satisfaction of the Engineer.

300-3.13 TESTING.

General Electrical Testing: Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification and certify compliance with test parameters. Tests shall be conducted in the presence of the Engineer and shall be to his/her satisfaction. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest. Perform infrared scan tests and inspections of service and power distribution equipment at the respective buildings and provide reports. Electrical equipment will be considered defective if it does not pass tests and inspections. Reports shall include notations of deficiencies, remedial action taken and observations after remedial action.

System and Equipment Testing: All installations shall be fully tested by continuous operation for not less than 24 hours as completed systems prior to acceptance. These tests shall include the functioning of each control not less than 10 times.

Test equipment and instruments utilized by the Contractor shall have been calibrated following the manufacturer's recommended schedule to verify their accuracy prior to performing the testing work. The Contractor shall provide instrument calibration certificates on test equipment when requested by the Engineer. Retesting work due to inaccurate or defective instruments shall be performed by the Contractor to the satisfaction of the Engineer at no additional cost to the Owner.

a. Ground Rod Impedance Testing:

   The enclosed "Ground Rod Impedance Test Report" form shall be used, and testing shall be performed in the presence of the Engineer.

   As-Built drawings shall indicate the location of all installed ground rods. Each ground rod shall have a unique identifier that corresponds with its submitted ground impedance test report.

   Three-pole fall-of-potential testers that can measure the ground resistance of a ground rod using auxiliary electrodes (staked testing), such as a Fluke 1621 Earth Ground Tester, shall be used for testing individual dedicated equipment ground rods at fixtures and equipment, or for testing isolated counterpoise ground rods not yet connected to the counterpoise wire.

Clamp-on testers that can measure the ground resistance of a ground rod without using auxiliary ground rods (stakeless testing), such as a Fluke 1630 Earth Ground Clamp Meter or approved equal, shall be used for testing counterpoise ground rods which have already been connected to the counterpoise wire, or ground ring ground rods which have already been connected to the established ground ring system.

Ground impedance test equipment shall be submitted for review and approval by the Engineer prior to performing the tests.

If the ground rod's impedance exceeds 25 ohms, an additional rod shall be driven in a location suitable and approved by the Engineer. However, the additional rod must satisfy the requirements of NEC 250.53 and not be less than 6 feet away from any other ground rod electrode. Additional ground rods shall not be measured for separate payment but shall be considered subsidiary to the counterpoise or respective equipment pay item.

The Contractor shall perform additional tests if required and requested by the Engineer at no additional cost.

The Contractor shall coordinate with the resident Engineer to approve tests daily before proceeding. The Contractor shall fill out a separate test report for each date. Test reports shall be submitted weekly to the Engineer.

b. Cable Pulling Tension Values Log:

The enclosed "Cable Pulling Tension Values Log" form shall be used for monitoring cable pull tension values in the presence of the Engineer.

300-3.14 INSPECTION FEES AND PERMITS. The Contractor shall obtain and pay for all necessary construction permits, licenses, government charges, and inspection fees necessary for prosecution of the Work. Unless otherwise noted, the Contractor shall pay all charges of utility owners for connections for providing permanent service to the Work, ready for subsequent utility account transfer to the Owner after final acceptance.

300-3.15 WORK SUPERVISION.

State of Arkansas: The electrical contractor (whether the general contractor or a subcontractor) shall be a licensed contractor in the state of Arkansas having an electrical classification suitable for performing the work required in these contract documents.

The Contractor shall designate in writing the qualified electrical supervisor who shall provide supervision to all electrical work on this project. The minimum qualifications for the electrical supervisor shall be a master electrician as defined by Arkansas Board of Electrical Examiners. The supervisor or his appointed alternate possessing at least a journeyman electrician license shall be on site whenever electrical work is being performed. The qualifications of the electrical supervisor shall be subject to approval of the Owner and the Engineer.

All master and journeyman electricians shall be licensed in accordance with Arkansas Code Title 17 Chapter 28 - Electricians. The website located at http://www.arkleg.state.ar.us publishes the text of this statutory requirement. No unlicensed electrical workers shall perform electrical work on this project. Apprentice electricians in a ratio of not more than one apprentice per journeyman electrician will be allowed if the apprentices are licensed and actively participating in an apprenticeship program recognized and approved by the Arkansas Board of Electrical Examiners.

300-3.16 TRAINING. The training classes shall be coordinated with the Owner and Engineer in advance of the final acceptance testing. Comprehensive operational and maintenance training materials shall be

provided by the equipment manufacturer and the Contractor (see section 2.3 OPERATION AND MAINTENANCE DATA).

a. Maintenance
   (1) List of the equipment.
   (2) Provide training materials.
   (3) Provide hands on troubleshooting specifics.

b. Preventive Maintenance Program Recommendations
   (1) List of the equipment.
   (2) List failure scenarios and what to do.
   (3) List technical assistance points of contact and phone numbers.

Schedule the training with the Owner at least 10 days in advance and notify the Engineer.

Provide hands-on demonstrations and training of equipment components and functions, including adjusting, operating, and maintaining the electrical equipment and systems. Coordinate the training schedule with the Owner in advance, so that the Owner may record the training if desired. Provide 1 hour training for the operational personnel and 1-hour training for the maintenance personnel.

METHOD OF MEASUREMENT

300-4.1 The quantity of lockout/tagout procedures to be paid for shall consist of all lockout/tagout procedure work completed in place, accepted and ready for operation.

300-4.2 The quantity of electrical modifications to be paid for under this item shall consist of all fuel farm rack modification work, constructed in place, and accepted as a complete and functional unit as detailed in the Plans and these Specifications. This work consists of all work in the vicinity of the fuel farm and fuel farm rack which is not paid separately by other items, including but not limited to all electrical power distribution work including all structures and apparatuses, conduits, wires, switches, breakers, panelboards, connections, connectors, grounding, power system modifications / addition, testing, and methods required to complete the work to the satisfaction of the Owner and the Engineer.

This work also consists of all electrical conductor/feeder work required for new equipment as shown on the one-line diagram and related panel schedules. This shall include furnishing all materials and for all preparation and installation of these materials, and for all labor, equipment, tools, and incidentals, including ground rods and ground connectors and trench marking tape if required, necessary to complete the work to the satisfaction of the Owner and the Engineer.

300-4.3 The quantity of electrical modifications to be paid for under this item shall consist of all electrical vault modifications work, constructed in place and accepted as a complete and functional unit as detailed in the Plans and these Specifications. This work consists of all work in the vicinity of the electrical vault which is not paid separately by other items, including but not limited to all electrical power distribution work including all breakers, connections, connectors, grounding, power system modifications / additions, testing, and methods required to complete the work to the satisfaction of the Owner and the Engineer.

This work also consists of all electrical conductor/feeder work required for new equipment as shown on the one-line diagram and related panel schedules. This shall include furnishing all materials and for all preparation and installation of these materials, and for all labor, equipment, tools, and incidentals, including ground rods and ground connectors and trench marking tape if required, necessary to complete the work to the satisfaction of the Owner and the Engineer.

BASIS OF PAYMENT

300-5.1 Payment will be made at the contract unit price for each complete item, measured as provided above, and accepted by the Engineer. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item to the satisfaction of the Engineer.

Payment will be made under:

Item SS-300-5.1	Lockout/Tagout Procedures – per Lump Sum
Item SS-300-5.2	Electrical Fuel Farm Rack Modifications – per Lump Sum
Item SS-300-5.3	Electrical Vault Modifications – per Lump Sum

MATERIAL REQUIREMENTS

Commercial Item Description A-A-59544	Cable and Wire, Electrical (Power, Fixed Installation)
Fed. Spec. W-C-1094	Conduit and Conduit Fittings; Plastic, Rigid
Fed. Spec. W-P-115	Panel, Power Distribution
Fed. Std. 595	Colors
Underwriters Laboratories Standard 6	Rigid Metal Conduit
Underwriters Laboratories Standard 514	Fittings for Conduit and Outlet Boxes
Underwriters Laboratories Laboratories Standard 651	Schedule 40 and 80 Rigid PVC Conduit (for Direct Burial)
Underwriters Laboratories Standard 1242	Intermediate Metal Conduit
CFR 1910	Occupational Safety and Health Regulations
CFR 1926	Safety and Health Regulations for Construction
ANSI/IEEE C2	National Electrical Safety Code
NFPA 70	National Electrical Code (NEC)
NFPA 70E	Standard for Electrical Safety in the Workplace
NFPA 101	Life Safety Code
NFPA 780	Standard for the Installation of Lightning Protection Systems

29 CFR 1910	Occupational Safety and Health Standards (OSHA)
29 CFR 1926	Safety and Health Regulations for Construction
Jaquith Industries, Inc.	The Design, Installation, and Maintenance of In-Pavement Airport Lighting

FAA ADVISORY CIRCULARS

AC 150/5300-13	Airport Design
AC 150/5340-18	Standards for Airport Sign Systems
AC 150/5340-26	Maintenance of Airport Visual Aid Facilities
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-3	Specification for L-821 Panels for Control of Airport Lighting
AC 150/5345-5	Specifications for Airport Lighting Circuit Selector Switch
AC 150/5345-7	Specification for L-824 for Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-10	Specification for Constant Current Regulators and Regulator Monitors
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
AC 150/5345-28	Standard for Precision Approach Path Indicator (PAPI) Systems
AC 150/5345-39	Specification for L-853 Runway and Taxiway Retroreflective Markers
AC 150/5345-42	Specification for Airport Light Base and Transformer Housings, Junction Boxes, and Accessories
AC 150/5345-44	Specification for Taxiway and Runway Signs
AC 150/5345-46	Specification for Runway and Taxiway Light Fixtures
AC 150/5345-47	Isolation Transformers for Airport Lighting Systems
AC 150/5346-49	Specification L-854, Radio Control Equipment
AC 150/5345-51	Specification for Discharge-Type Flashing Light Equipment
AC 150/5345-53	Airport Lighting Equipment Certification Program

END OF ITEM SS-300

GROUND ROD IMPEDANCE TEST REPORT

Owner / Sponsor: _____ Engineer: Garver, LLC_____

Airport:_____ Contractor: _____

Project Title: _____ Garver Project Number:_____

Date: _____ Weather / Site Conditions: _____

Fall-of-Potential Style Tester (F):
Manufacturer:_____ Model #: _____

Clamp-On Style Tester (C):
Manufacturer:_____ Model #: _____

Ground Rod #	Test Equipment Style (F or C)	Impedance Value (Ohms)	Ground Rod #	Test Equipment Style (F or C)	Impedance Value (Ohms)

Tested By:	
Engineer Witness:	

Provide signature/date in the fields above.

CABLE PULLING TENSION VALUES LOG

Owner / Sponsor: _____ Engineer: Garver, LLC

Airport: _____ Contractor: _____

Project Title: _____ Garver Project Number: _____

Date: _____ Weather / Site Conditions: _____

Dynamometer Manufacturer/Model #: _____ Cable / Wire Manufacturer: _____

From / To Locations	Wire/Cable Size	Length of Pull	Pull Method	Maximum Value	Measured Value
Tested By:					
Engineer Witness:					

Provide signature/date in the fields above.

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ITEM C-105 MOBILIZATION

105-1 Description. This item of work shall consist of, 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.

105-2 Mobilization limit. Mobilization shall be limited to 10 percent of the total project cost.

105-3 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.

105-4.1 Engineer/RPR field office. An Engineer/RPR field office is not required.

105-4.2 Contractor’s access / haul routes. *The Contractor shall layout, construct, maintain, and repair all access/haul roads needed to construct the work. The existing access roads shown on the plans shall be repaired, as determined necessary by the Engineer, at the close of the project. All such work, including all materials and labor, involved in the layout, construction, maintenance, and repair of the Contractor's access/haul roads will not be measured for separate payment but will be considered subsidiary to the bid item "Mobilization." Temporary pipe culverts shall be installed and maintained as required and shall be of the size as directed by the Engineer. The type of pipe used for temporary pipe shall be at the option of the Contractor. Temporary pipe culverts will not be measured for separate payment, but will be considered subsidiary to the access/haul road. All temporary pipe culverts shall be removed by the Contractor and shall remain his property at the close of the project.*

105-4.3 Contractor’s Staging Area. *The areas designated in the plans or by the Engineer as the Contractor's staging area shall be cleared and graded by the Contractor as needed for use by the Contractor in constructing the work on this project. All areas used or otherwise occupied by the Contractor for his operations shall be cleaned, regraded, and seeded, as directed by the Engineer, prior to the final acceptance of the project by the Airport. All work involved in the preparation and restoration of areas used or occupied by the Contractor, including clearing, grubbing, regrading, seeding, and installing and removing fence, will not be measured for separate payment but will be considered subsidiary to the bid item “Mobilization.”*

105-4.4 ***Instrument Control.*** *The Contractor will be furnished survey baselines and benchmarks to control the work as shown on the Plans. The Contractor shall be responsible for the additional instrument control necessary to layout and construct the work. The Contractor shall provide the instrument control as provided for in Section 50 of the General Provisions. The Contractor's instrument control of the work shall not be measured for separate payment, but will be considered subsidiary to the bid item "Mobilization".*

105-4.5 ***Clean-Up.*** *From time to time, the Contractor shall clean up the site in order that the site presents a neat appearance and that the progress of work will not be impeded. One such clean up shall immediately precede final inspection.*

Immediately following acceptance of the work by the Owner, the Contractor shall remove all temporary equipment, surplus materials, and debris resulting from his operations, and leave the site in a condition fully acceptable to the Owner.

METHOD OF MEASUREMENT

105-5 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 Section 90, paragraph 90-11, Contractor Final Project Documentation, the final 10%.

BASIS OF PAYMENT

105-6 Payment will be made under:

Item C-105-6.1 Mobilization (Maximum 10% of Total Bid) – per Lump Sum

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Office of Federal Contract Compliance Programs (OFCCP)

Executive Order 11246, as amended

EEOC-P/E-1 – Equal Employment Opportunity is the Law Poster

United States Department of Labor, Wage and Hour Division (WHD)

WH 1321 – Employee Rights under the Davis-Bacon Act Poster

END OF ITEM C-105

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, runways, taxiways, 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. Rock excavation. Rock excavation shall include all solid rock in ledges, in bedded deposits, in unstratified masses, and conglomerate deposits which are so firmly cemented they cannot be removed without blasting or using rippers. All boulders containing a volume of more than 1/2 cubic yard (0.4 m3) will be classified as “rock excavation.”

c. Muck excavation. Muck excavation shall consist of the removal and disposal of deposits or mixtures of soils and organic matter not suitable for foundation material. Muck 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.

152-1.3 Unsuitable excavation. Unsuitable material shall be disposed in designated waste ~~areas as shown on the plans~~. Materials 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 RPR. *Undercutting of material unsatisfactory for subgrade foundation, roads, shoulders, or areas intended for turfing shall be considered unsuitable excavation and shall be excavated to the depth specified by the Engineer below the subgrade*.

CONSTRUCTION METHODS

152-2.1 General. Before beginning excavation, grading, and embankment operations in any area, the area shall be cleared or cleared and grubbed.

The suitability of material to be placed in embankments shall be subject to approval by the RPR. All unsuitable material shall be disposed of ~~in waste areas as shown on the plans~~ *off site*. All waste areas shall be graded to allow positive drainage of the area and adjacent areas. The surface elevation of waste areas shall be specified on the plans or approved by the RPR.

When the Contractor’s excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued and the RPR notified per Section 70, paragraph 70-20. At the direction of the RPR, 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.

Areas outside the limits of the pavement areas where the top layer of soil 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. Stones or rock fragments larger than 4 inches in their greatest dimension will not be permitted in the top 6 inches of the subgrade.

If it is necessary to interrupt existing surface drainage, sewers or under-drainage, 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 RPR, who shall arrange for their removal if necessary. The Contractor, at their own 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.

a. Blasting. Blasting shall not be allowed.

152-2.2 Excavation. No excavation shall be started until the work has been staked out by the Contractor and the RPR has obtained from the Contractor, the survey notes of the elevations and measurements of the ground surface. The Contractor and RPR shall agree that the original ground lines shown on the original topographic mapping are accurate, or agree to any adjustments made to the original ground lines.

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 RPR. All suitable excavated material shall be used in the formation of embankment, subgrade, or other purposes as shown on the plans. All unsuitable material shall be disposed of *as described in paragraph 152-1.3* ~~shown on the plans~~.

The grade shall be maintained so that the surface is well drained at all times.

When the volume of the excavation exceeds that required to construct the embankments to the grades as indicated on the plans, the excess shall be used to grade the areas of ultimate development or disposed as directed by the RPR. When the volume of excavation is not sufficient for constructing the embankments to the grades indicated, the deficiency shall be obtained from borrow areas.

a. Selective grading. When *the quality of material varies significantly* ~~selective grading is indicated on the plans~~, the more suitable material designated by the RPR 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 until it can be placed. The more suitable material shall then be placed and compacted as specified. Selective grading shall be considered incidental to the work involved. The cost of stockpiling and placing the material shall be included in the various pay items of work involved.

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 RPR. Muck, peat, matted roots, or other yielding material, unsatisfactory for subgrade foundation, shall be removed to the depth specified. Unsuitable materials shall be disposed 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 Unsuitable 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 *necessary part of Unsuitable Excavation* ~~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. Undercutting will be paid as Unsuitable Excavation.

c. Over-break. Over-break, including slides, is that portion of any material displaced or loosened beyond the finished work as planned or authorized by the RPR. All over-break shall be graded or removed by the Contractor and disposed of as directed by the RPR. The RPR shall determine if the displacement of such material was unavoidable and their own decision shall be final. Payment will not be made for the removal and disposal of over-break that the RPR determines as avoidable. Unavoidable over-break 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 the Contractor as indicated 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 RPR. All foundations thus excavated shall be backfilled with suitable material and compacted as specified for embankment or as shown on the plans. *All work associated with the excavation, removal, backfill, disposal, and/or stockpiling of existing structures and culverts will not be measured for separate payment but will be considered subsidiary to “Unclassified Excavation”.*

152-2.3 Borrow excavation. Borrow areas are not required.

152-2.4 Drainage excavation. Drainage excavation shall consist of excavating drainage ditches including intercepting, inlet, or outlet ditches; or other types as shown on the plans. The work shall be performed in sequence with the other construction. Ditches shall be constructed prior to starting adjacent excavation

operations. All satisfactory material shall be placed in embankment fills; unsuitable material shall be placed in designated waste areas or as directed by the RPR. All necessary work shall be performed true to final line, elevation, and cross-section. The Contractor shall maintain ditches constructed on the project to the required cross-section and shall keep them free of debris or obstructions until the project is accepted.

152-2.5 Preparation of cut areas or areas where existing pavement has been removed. In those areas on which a subbase or base course is to be placed, the top 12 inches of subgrade shall be compacted to not less than 100 % of maximum density for non-cohesive soils, and 95% of maximum density for cohesive soils as determined by ASTM D698. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.

152-2.6 Preparation of embankment area. 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 per paragraph 152-2.10.

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.

152-2.7 Control Strip. The first half-day of construction of subgrade and/or embankment shall be considered as a control strip for the Contractor to demonstrate, in the presence of the RPR, that the materials, equipment, and construction processes meet the requirements of this specification. The sequence and manner of rolling necessary to obtain specified density requirements shall be determined. The maximum compacted thickness may be increased to a maximum of 12 inches upon the Contractor's demonstration that approved equipment and operations will uniformly compact the lift to the specified density. The RPR must witness this demonstration and approve the lift thickness prior to full production.

Control strips that do not meet specification requirements shall be reworked, re-compacted, or removed and replaced at the Contractor's expense. Full operations shall not begin until the control strip has been accepted by the RPR. The Contractor shall use the same equipment, materials, and construction methods for the remainder of construction, unless adjustments made by the Contractor are approved in advance by the RPR.

152-2.8 Formation of embankments. The material shall be constructed in lifts as established in the control strip, but not less than 6 inches nor more than 12 inches of compacted thickness.

When more than one lift is required to establish the layer thickness shown on the plans, the construction procedure described here shall apply to each lift. No lift shall be covered by subsequent lifts until tests verify that compaction requirements have been met. The Contractor shall rework, re-compact and retest any material placed which does not meet the specifications.

The lifts shall be placed, to produce a soil structure as shown on the typical cross-section or as directed by the RPR. 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 due to 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 lift shall be within ±2% of optimum moisture content before rolling to obtain the prescribed compaction. The material shall be moistened or aerated as necessary to achieve a uniform moisture content throughout the lift. Natural drying may be accelerated by blending in dry material or manipulation alone to increase the rate of evaporation.

The Contractor shall make the necessary corrections and adjustments in methods, materials or moisture content to achieve the specified embankment density.

The [RPR] [Contractor] will take samples of excavated materials which will be used in embankment for testing and develop a Moisture-Density Relations of Soils Report (Proctor) in accordance with [ASTM D698] [D 1557]. A new Proctor shall be developed for each soil type based on visual classification.

Density tests will be taken by the [RPR] [Contractor] for every [3,000] square yards of compacted embankment for each lift which is required to be compacted, or other appropriate frequencies as determined by the RPR.

If the material has greater than 30% retained on the 3/4-inch (19.0 mm) sieve, follow AASHTO T-180 Annex Correction of maximum dry density and optimum moisture for oversized particles.

Rolling operations shall be continued until the embankment is compacted to not less than [100%] of maximum density for non-cohesive soils, and [95%] of maximum density for cohesive soils as determined by ASTM [___]. Under all areas to be paved, the embankments shall be compacted to a depth of [___] and to a density of not less than [___] percent of the maximum density as determined by ASTM [___]. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.

On all areas outside of the pavement areas, no compaction will be required on the top [4 inches] which shall be prepared for a seedbed in accordance with [Item T-901] [T-906].

The in-place field density shall be determined in accordance with 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 D6938. The Contractor's laboratory shall perform all density tests in the RPR's presence and provide the test results upon completion to the RPR for acceptance. If the specified density is not attained, the area represented by the test or as designated by the RPR shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

Compaction areas shall be kept separate, and no lift shall be covered by another lift 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 lift is placed. Lift placement shall begin in the deepest portion of the embankment fill. As placement progresses, the lifts shall be constructed approximately parallel to the finished pavement grade line.

When rock, concrete pavement, asphalt pavement, and other embankment material are excavated at approximately the same time as the subgrade, the material shall be incorporated into the outer portion of the embankment and the subgrade material shall be incorporated under the future paved areas. Stones, fragmentary rock, and recycled pavement larger than 4 inches in their greatest dimensions will not be allowed in the top 12 inches of the subgrade. Rockfill shall be brought up in lifts as specified or as directed by the RPR and the finer material shall be used to fill the voids forming a dense, compact mass. Rock, cement concrete pavement, asphalt pavement, and other embankment material shall not be disposed of except at places and in the manner designated on the plans or by the RPR.

When the excavated material consists predominantly of rock fragments of such size that the material cannot be placed in lifts of the prescribed thickness without crushing, pulverizing or further breaking down the pieces, such material may be placed in the embankment as directed in lifts not exceeding 2 feet in thickness. Each lift shall be leveled and smoothed with suitable equipment by distribution of spalls and finer fragments of rock. The lift shall not be constructed above an elevation 4 feet below the finished subgrade.

[There will be no separate measurement of payment for compacted embankment. All costs incidental to placing in lifts, compacting, discing, watering, mixing, sloping, and other operations necessary for construction of embankments will be included in the contract price for excavation, borrow, or other items.]

~~[Payment for compacted embankment will be made under embankment in-place and no payment will be made for excavation, borrow, or other items.]~~

~~**152-2.9 Proof rolling.** The purpose of proof rolling the subgrade is to identify any weak areas in the subgrade and not for compaction of the subgrade. 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]] [[___] ton Proof Roller with tires spaced not more than 32 inches on-center with tires inflated to [100/125/150 psi]] in the presence of the RPR. Apply a minimum of [___] coverage, or as specified by the RPR, under pavement 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. Removal and replacement of soft areas is incidental to this item.~~

152-2.10 Compaction requirements. The subgrade under areas to be paved shall be compacted to a depth of 12 inches and to a density of not less than **95** percent of the maximum dry density as determined by ASTM D698 . ~~The subgrade in areas outside the limits of the pavement areas shall be compacted to a depth of [12 inches] and to a density of not less than [95] percent of the maximum density as determined by ASTM [D698].~~

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). When the material has greater than 30 percent retained on the ¾ inch (19.0 mm) sieve, follow the methods in ASTM D698**.** Tests for moisture content and compaction will be taken at a minimum of **3000** S.Y. of subgrade. All quality assurance testing shall be done by the Contractor's laboratory in the presence of the RPR, and density test results shall be furnished upon completion to the RPR for acceptance determination.

The in-place field density shall be determined in accordance with 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 within 12 months prior to its use on this contract. The gage shall be field standardized daily.

Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

If the specified density is not attained, the entire lot shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

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 RPR and the finished subgrade shall be maintained.

152-2.11 Finishing and protection of subgrade. Finishing and protection of the subgrade is incidental to this item. Grading and compacting of the subgrade shall be performed so that it will drain readily. All low areas, holes or depressions in the subgrade shall be brought to grade. 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. All ruts or rough places that develop in the completed subgrade shall be graded, re-compacted, and retested. The Contractor shall protect the subgrade from damage and limit hauling over the finished subgrade to only traffic essential for construction purposes.

The Contractor shall maintain the completed course in satisfactory condition throughout placement of subsequent layers. No subbase, base, or surface course shall be placed on the subgrade until the subgrade has been accepted by the RPR.

152-2.12 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.

The Contractor's equipment shall not cause damage to any excavated surface, compacted lift or to the subgrade as a result of hauling operations. Any damage caused as a result of the Contractor's hauling operations shall be repaired at the Contractor's expense.

The Contractor shall be responsible for providing, maintaining and removing any haul roads or routes within or outside of the work area, and shall return the affected areas to their former condition, unless otherwise authorized in writing by the Owner. No separate payment will be made for any work or materials associated with providing, maintaining and removing haul roads or routes.

152-2.13 Surface Tolerances. In those areas on which a subbase or base course is to be placed, 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 re-compacted to grade until the required smoothness and accuracy are obtained and approved by the RPR. The Contractor shall perform all final smoothness and grade checks in the presence of the RPR. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense.

a. Smoothness. The finished surface shall not vary more than +/- ½ inch when tested with a 12-foot straightedge applied parallel with and at right angles to the centerline. The straightedge shall be moved continuously forward at half the length of the 12-footstraightedge for the full length of each line on a 50-foot grid.

b. Grade. The grade and crown shall be measured on a 50-foot grid and shall be within +/-0.05 feet of the specified grade.

On safety areas, turfed areas and other designated areas within the grading limits where no subbase or base is to placed, grade shall not vary more than 0.10 feet from specified grade. Any deviation in excess of this amount shall be corrected by loosening, adding or removing materials, and reshaping.

152-2.14 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 be located as shown on the plans and the approved CSPP, and shall not be placed on areas that subsequently will require any excavation or embankment fill. If, in the judgment of the RPR, 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 re-handling.

~~Upon completion of grading operations, stockpiled topsoil shall be handled and placed as shown on the plans and as required in Item T-905. Topsoil shall be paid for as provided in Item T-905. No direct payment will be made for topsoil under Item P-152.~~

METHOD OF MEASUREMENT

152-3.1 ~~Measurement for payment specified by the cubic yard shall be computed by the **[** average end areas of design cross sections **] [** the comparison of digital terrain model (DTM) surfaces **]** for computation of neat line design quantities **]**. The end area is that bound by the original ground line established by *the design survey* field cross-sections and the final theoretical pay line established by cross-sections shown on the plans, subject to verification by the RPR.~~ *There shall be no separate measurement or payment for materials, labor, equipment, tools, or incidentals associated with excavating, compacting, and preparing the subgrade. Excavation, compaction, and preparation of subgrade shall be considered subsidiary to the bid item SS-230 Concrete for Structures".*

BASIS OF PAYMENT

152-4.1 ~~**[** Unclassified excavation **] [** Rock Excavation **] [** Borrow Excavation **] [** Muck Excavation **] [** Drainage Excavation **] [** Stockpiled Material **]** 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 **] [** Borrow **] [** Rock **] [** Muck **] [** Drainage **] [** Excavation **] [** Stockpiled material **]]** - per cubic yard~~

~~[Item P-152-4.2 Embankment in place - per cubic yard]~~

~~[Item P-152-4.3 Stockpiled material – per cubic yard]~~

~~*Item P-152-4.4 Unsuitable Excavation – per cubic yard*~~

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO T-180	Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop

ASTM International (ASTM)

ASTM D698	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3))
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 (2700 kN-m/m^3))
ASTM D6938	Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

Advisory Circulars (AC)

AC 150/5370-2	Operational Safety on Airports During Construction Software

Software

FAARFIELD – FAA Rigid and Flexible Iterative Elastic Layered Design

U.S. Department of Transportation

FAA RD-76-66	Design and Construction of Airport Pavements on Expansive Soils

END OF ITEM P-152

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ITEM L-108 UNDERGROUND POWER CABLE FOR AIRPORTS

DESCRIPTION

108-1.1 This item shall consist of furnishing and installing power cables that are direct buried and furnishing and/or installing power cables within conduit or duct banks per these specifications at the locations shown on the plans. It includes excavation and backfill of trench for direct-buried cables only. Also included are the installation of counterpoise wires, ground wires, ground rods and connections, cable splicing, cable marking, cable testing, and all incidentals necessary to place the cable in operating condition as a completed unit to the satisfaction of the RPR. This item shall not include the installation of duct banks or conduit, trenching and backfilling for duct banks or conduit, or furnishing or installation of cable for FAA owned/operated facilities.

EQUIPMENT AND MATERIALS

108-2.1 General.

a. Airport lighting equipment and materials covered by advisory circulars (AC) shall be approved under the Airport Lighting Equipment Certification Program per AC 150/5345-53, current version.

b. All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification, when requested by the RPR.

c. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials that comply with these specifications at the Contractor's cost.

d. All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

e. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be neatly bound in a properly sized 3-ring binder, tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials, or procedures that do not meet the system design and the standards and codes, specified in this document.

f. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for at least twelve (12) months from the date of final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner. ~~The Contractor shall maintain a minimum insulation resistance in accordance with paragraph 108-3.10e with isolation transformers connected in new circuits and new segments of existing circuits through the end of the contract warranty period when tested in accordance with AC 150/5340-26, *Maintenance Airport Visual Aid Facilities*, paragraph 5.1.3.1, Insulation Resistance Test.~~

108-2.2 Cable. ~~Underground cable for airfield lighting facilities (runway and taxiway lights and signs) shall conform to the requirements of AC 150/5345-7, Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits latest edition. Conductors for use on 6.6 ampere primary airfield lighting series circuits shall be single conductor, seven strand, #8 American wire gauge (AWG), L-824 Type C, 5,000 volts, non-shielded, with cross-linked polyethylene insulation. Conductors for use on 20 ampere primary airfield~~

~~lighting series circuits shall be single conductor, seven strand, #6 AWG, L-824 Type C, 5,000 volts, non-shielded, with cross-linked polyethylene insulation. L-824 conductors for use on the L-830 secondary of airfield lighting series circuits shall be sized in accordance with the manufacturer's recommendations. All other conductors shall comply with FAA and National Electric Code (NEC) requirements. Conductor sizes noted above shall not apply to leads furnished by manufacturers on airfield lighting transformers and fixtures.~~

Wire for electrical circuits up to 600 volts shall comply with Specification L-824 and/or Commercial Item Description A-A-59544A and shall be type THWN-2, 75°C for installation in conduit and RHW-2, 75°C for direct burial installations. Conductors for parallel (voltage) circuits shall be type and size and installed in accordance with NFPA-70, National Electrical Code.

Unless noted otherwise, all 600-volt and less non-airfield lighting conductor sizes are based on a 75°C, THWN-2, 600-volt insulation, copper conductors, not more than three single insulated conductors, in raceway, in free air. The conduit/duct sizes are based on the use of THWN-2, 600-volt insulated conductors. The Contractor shall make the necessary increase in conduit/duct sizes for other types of wire insulation. In no case shall the conduit/duct size be reduced. The minimum power circuit wire size shall be #12 AWG.

Conductor sizes may have been adjusted due to voltage drop or other engineering considerations. Equipment provided by the Contractor shall be capable of accepting the quantity and sizes of conductors shown in the Contract Documents. All conductors, pigtails, cable step-down adapters, cable step-up adapters, terminal blocks and splicing materials necessary to complete the cable termination/splice shall be considered incidental to the respective pay items provided.

Cable type, size, number of conductors, strand and service voltage shall be as specified in the Contract Document.

108-2.3 Bare copper wire (~~counterpoise~~, bare copper wire ground and ground rods). ~~Wire for counterpoise or ground installations for airfield lighting systems shall be No.~~ **[**~~6~~**][**~~4~~**][**~~2~~**]** ~~AWG bare solid copper wire for counterpoise and/or No.~~ **[**~~6~~**][**~~4~~**][**~~2~~**]** ~~AWG insulated stranded for grounding bond wire per ASTM B3 and ASTM B8, and shall be~~ **[**~~bare copper wire~~**][**~~tinned copper wire per ASTM B33~~**]**~~.~~ For voltage powered circuits, the equipment grounding conductor shall comply with NEC Article 250.

Ground rods shall be copper-clad steel**.** The ground rods shall be of the length and diameter specified on the plans, but in no case be less than 10 feet long and 3/4 inch in diameter.

108-2.4 Cable connections. In-line connections or splices of underground primary cables shall be of the type called for on the plans, and shall be one of the types listed below. No separate payment will be made for cable connections.

a. The cast splice. A cast splice, employing a plastic mold and using epoxy resin equivalent to that manufactured by 3M™ Company, "Scotchcast" Kit No. 82-B, or an approved equivalent, used for potting the splice is acceptable.

b. The field-attached plug-in splice. Field attached plug-in splices shall be installed as shown on the plans. The Contractor shall determine the outside diameter of the cable to be spliced and furnish appropriately sized connector kits and/or adapters. Tape or heat shrink tubing with integral sealant shall be in accordance with the manufacturer's requirements. Primary Connector Kits manufactured by Amerace, "Super Kit", Integro "Complete Kit", or approved equal *are* acceptable.

c. The factory-molded plug-in splice. Specification for L-823 Connectors, Factory-Molded to Individual Conductors, is acceptable.

d. The taped or heat-shrink splice. Taped splices employing field-applied rubber, or synthetic rubber tape covered with plastic tape is acceptable. The rubber tape should meet the requirements of ASTM D4388 and the plastic tape should comply with Military Specification MIL-I-24391 or Commercial Item Description A-A-55809. Heat shrinkable tubing shall be heavy-wall, self-sealing tubing rated for the voltage of the wire being spliced and suitable for direct-buried installations. The tubing shall be factory coated with a

thermoplastic adhesive-sealant that will adhere to the insulation of the wire being spliced forming a moisture- and dirt-proof seal. Additionally, heat shrinkable tubing for multi-conductor cables, shielded cables, and armored cables shall be factory kits that are designed for the application. Heat shrinkable tubing and tubing kits shall be manufactured by Tyco Electronics/ Raychem Corporation, Energy Division, or approved equivalent.

In all the above cases, connections of cable conductors shall be made using crimp connectors using a crimping tool designed to make a complete crimp before the tool can be removed. All L-823/L-824 splices and terminations shall be made per the manufacturer's recommendations and listings.

All connections of counterpoise, grounding conductors and ground rods shall be made by the exothermic process or approved equivalent, except that a light base ground clamp connector shall be used for attachment to the light base. All exothermic connections shall be made per the manufacturer's recommendations and listings.

~~**108-2.5 Splicer qualifications.** Every airfield lighting cable splicer shall be qualified in making airport cable splices and terminations on cables rated at or above 5,000 volts AC. The Contractor shall submit to the RPR proof of the qualifications of each proposed cable splicer for the airport cable type and voltage level to be worked on. Cable splicing/terminating personnel shall have a minimum of three (3) years continuous experience in terminating/splicing medium voltage cable.~~

108-2.6 Concrete. Not required.

~~**108-2.7 Flowable backfill.** Flowable material used to backfill trenches for power cable trenches shall conform to the requirements of Item P-153, Controlled Low Strength Material.~~

~~**108-2.8 Cable identification tags.** Cable identification tags shall be made from a non-corrosive material with the circuit identification stamped or etched onto the tag. The tags shall be of the type as detailed on the plans.~~

108-2.9 Tape. Electrical tapes shall be Scotch™ Electrical Tapes –Scotch™ 88 (1-1/2 inch wide) and Scotch™ 130C® linerless rubber splicing tape (2-inch (50 mm) wide), as manufactured by the Minnesota Mining and Manufacturing Company (3M™), or an approved equivalent.

108-2.10 Electrical coating. Electrical coating shall be Scotchkote™ as manufactured by 3M™, or an approved equivalent.

~~**108-2.11 Existing circuits.** Whenever the scope of work requires connection to an existing circuit, the existing circuit's insulation resistance shall be tested, in the presence of the RPR. The test shall be performed per this item and prior to any activity that will affect the respective circuit. The Contractor shall record the results on forms acceptable to the RPR. When the work affecting the circuit is complete, the circuit's insulation resistance shall be checked again, in the presence of the RPR. The Contractor shall record the results on forms acceptable to the RPR. The second reading shall be equal to or greater than the first reading or the Contractor shall make the necessary repairs to the existing circuit to bring the second reading above the first reading. All repair costs including a complete replacement of the L-823 connectors, L-830 transformers and L-824 cable, if necessary, shall be borne by the Contractor. All test results shall be submitted in the Operation and Maintenance (O&M) Manual.~~

108-2.12 Detectable warning tape. Plastic, detectable, American Public Works Association (APWA) Red (electrical power lines, cables, conduit and lighting cable) with continuous legend tape shall be polyethylene film with a metalized foil core and shall be 3-6 inches wide. Detectable tape is incidental to the respective bid item. Detectable warning tape for communication cables shall be orange. Detectable warning tape color code shall comply with the APWA Uniform Color Code.

CONSTRUCTION METHODS

108-3.1 General. The Contractor shall install the specified cable at the approximate locations indicated on the plans. Unless otherwise shown on the plans, all cable required to cross under pavements expected to carry aircraft loads shall be installed in concrete encased duct banks. Cable shall be run without splices, from ~~fixture~~ *equipment* to ~~fixture~~ *equipment*.

~~Cable connections between lights will be permitted only at the light locations for connecting the underground cable to the primary leads of the individual isolation transformers.~~ The Contractor shall be responsible for providing cable in continuous lengths for home runs or other long cable runs without connections unless otherwise authorized in writing by the RPR or shown on the plans.

~~In addition to connectors being installed at individual isolation transformers, L-823 cable connectors for maintenance and test points shall be installed at locations shown on the plans. Cable circuit identification markers shall be installed on both sides of the L-823 connectors installed and on both sides of slack loops where a future connector would be installed.~~

~~Provide not less than 3 feet of cable slack on each side of all connections, isolation transformers, light units, and at points where cable is connected to field equipment. Where provisions must be made for testing or for future above grade connections, provide enough slack to allow the cable to be extended at least one foot vertically above the top of the access structure. This requirement also applies where primary cable passes through empty light bases, junction boxes, and access structures to allow for future connections, or as designated by the RPR.~~

~~Primary airfield lighting cables installed shall have cable circuit identification markers attached on both sides of each L-823 connector and on each airport lighting cable entering or leaving cable access points, such as manholes, hand holes, pull boxes, junction boxes, etc. Markers shall be of sufficient length for imprinting the cable circuit identification legend on one line, using letters not less than 1/4 inch in size. The cable circuit identification shall match the circuits noted on the construction plans.~~

108-3.2 Installation in duct banks or conduits. This item includes the installation of the cable in duct banks or conduit per the following paragraphs. The maximum number and voltage ratings of cables installed in each single duct or conduit, and the current-carrying capacity of each cable shall be per the latest version of the National Electric Code, or the code of the local agency or authority having jurisdiction.

The Contractor shall make no connections or splices of any kind in cables installed in conduits or duct banks.

Unless otherwise designated in the plans, where ducts are in tiers, use the lowest ducts to receive the cable first, with spare ducts left in the upper levels. Check duct routes prior to construction to obtain assurance that the shortest routes are selected and that any potential interference is avoided.

Duct banks or conduits shall be installed as a separate item per *SS-300 Basic Electrical Requirements* ~~Item L-110, Airport Underground Electrical Duct Banks and Conduit~~. The Contractor shall run a mandrel through duct banks or conduit prior to installation of cable to ensure that the duct bank or conduit is open, continuous and clear of debris. The mandrel size shall be compatible with the conduit size. The Contractor shall swab out all conduits/ducts and clean light bases, manholes, etc., interiors immediately prior to pulling cable. Once cleaned and swabbed, the light bases and all accessible points of entry to the duct/conduit system shall be kept closed except when installing cables. Cleaning of ducts, ~~light bases,~~ manholes, etc., is incidental to the pay item of the item being cleaned. All raceway systems left open, after initial cleaning, for any reason shall be re-cleaned at the Contractor's expense. The Contractor shall verify existing ducts proposed for use in this project as clear and open. The Contractor shall notify the RPR of any blockage in the existing ducts.

The cable shall be installed in a manner that prevents harmful stretching of the conductor, damage to the insulation, or damage to the outer protective covering. The ends of all cables shall be sealed with moisture-seal tape providing moisture-tight mechanical protection with minimum bulk, or alternately, heat shrinkable tubing before pulling into the conduit and it shall be left sealed until connections are made. Where more than one cable is to be installed in a conduit, all cable shall be pulled in the conduit at the same time. The pulling of a cable through duct banks or conduits may be accomplished by hand winch or power winch with the use of cable grips or pulling eyes. Maximum pulling tensions shall not exceed the cable manufacturer's recommendations. A non-hardening cable-pulling lubricant recommended for the type of cable being installed shall be used where required.

The Contractor shall submit the recommended pulling tension values to the RPR prior to any cable installation. If required by the RPR, pulling tension values for cable pulls shall be monitored by a

dynamometer in the presence of the RPR. Cable pull tensions shall be recorded by the Contractor and reviewed by the RPR. Cables exceeding the maximum allowable pulling tension values shall be removed and replaced by the Contractor at the Contractor's expense.

The manufacturer's minimum bend radius or NEC requirements (whichever is more restrictive) shall apply. Cable installation, handling and storage shall be per manufacturer's recommendations. During cold weather, particular attention shall be paid to the manufacturer's minimum installation temperature. Cable shall not be installed when the temperature is at or below the manufacturer's minimum installation temperature. At the Contractor's option, the Contractor may submit a plan, for review by the RPR, for heated storage of the cable and maintenance of an acceptable cable temperature during installation when temperatures are below the manufacturer's minimum cable installation temperature.

Cable shall not be dragged across base can or manhole edges, pavement or earth. When cable must be coiled, lay cable out on a canvas tarp or use other appropriate means to prevent abrasion to the cable jacket.

108-3.3 Installation of direct-buried cable in trenches. Unless otherwise specified, the Contractor shall not use a cable plow for installing the cable. Cable shall be unreeled uniformly in place alongside or in the trench and shall be carefully placed along the bottom of the trench. The cable shall not be unreeled and pulled into the trench from one end. Slack cable sufficient to provide strain relief shall be placed in the trench in a series of S curves. Sharp bends or kinks in the cable shall not be permitted.

Where cables must cross over each other, a minimum of 3 inches vertical displacement shall be provided with the topmost cable depth at or below the minimum required depth below finished grade.

a. Trenching. Where turf is well established and the sod can be removed, it shall be carefully stripped and properly stored. Trenches for cables may be excavated manually or with mechanical trenching equipment. Walls of trenches shall be essentially vertical so that a minimum of surface is disturbed. Graders shall not be used to excavate the trench with their blades. The bottom surface of trenches shall be essentially smooth and free from coarse aggregate. Unless otherwise specified, cable trenches shall be excavated to a minimum depth of 18 inches below finished grade per NEC Table 300.5, except as follows:

- When off the airport or crossing under a roadway or driveway, the minimum depth shall be 36 inches unless otherwise specified.
- Minimum cable depth when crossing under a railroad track, shall be 42 inches unless otherwise specified.

The Contractor shall excavate all cable trenches to a width not less than 6 inches. Unless otherwise specified on the plans, all cables in the same location and running in the same general direction shall be installed in the same trench.

When rock is encountered, the rock shall be removed to a depth of at least 3 below the required cable depth and it shall be replaced with bedding material of earth or sand containing no mineral aggregate particles that would be retained on a 1/4-inch sieve. Flowable backfill material may alternatively be used. *The Contractor shall ascertain the type of soil or rock to be excavated before bidding. All such rock removal shall be performed and paid for under Item P-152.*

Duct bank or conduit markers temporarily removed for trench excavations shall be replaced as required.

It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Where existing active cables cross proposed installations, the Contractor shall ensure that these cables are adequately protected. Where crossings are unavoidable, no splices will be allowed in the existing cables, except as specified on the plans. Installation of new cable where such crossings must occur shall proceed as follows:

(1) Existing cables shall be located manually. Unearthed cables shall be inspected to assure absolutely no damage has occurred.

(2) Trenching, etc., in cable areas shall then proceed, with approval of the RPR, with care taken to minimize possible damage or disruption of existing cable, including careful backfilling in area of cable.

In the event that any previously identified cable is damaged during the course of construction, the Contractor shall be responsible for the complete repair or replacement.

b. Backfilling. After the cable has been installed, the trench shall be backfilled. The first layer of backfill in the trench shall encompass all cables; be 3 deep, loose measurement; and shall be either earth or sand containing no mineral aggregate particles that would be retained on a 1/4-inch sieve. This layer shall not be compacted. The second layer shall be 5 inches deep, loose measurement, and shall contain no particles that would be retained on a one inch (25.0 mm) sieve. The remaining third and subsequent layers of backfill shall not exceed 8 inches of loose measurement and be excavated or imported material and shall not contain stone or aggregate larger than 4 inches maximum diameter.

The second and subsequent layers shall be thoroughly tamped and compacted to at least the density of the adjacent material. If the cable is to be installed in locations or areas where other compaction requirements are specified (under pavements, embankments, etc.) the backfill compaction shall be **[**to a minimum of 100 percent of ASTM D1557**][**backfill with controlled low strength material (CLSM) in accordance with P-153**]**.

Trenches shall not contain pools of water during backfilling operations. The trench shall be completely backfilled and tamped level with the adjacent surface, except that when turf is to be established over the trench, the backfilling shall be stopped at an appropriate depth consistent with the type of turfing operation to be accommodated. A proper allowance for settlement shall also be provided. Any excess excavated material shall be removed and disposed of per the plans and specifications.

Underground electrical warning (caution) tape shall be installed in the trench above all direct-buried cable. Contractor shall submit a sample of the proposed warning tape for acceptance by the RPR. If not shown on the plans, the warning tape shall be located 6 inches) above the direct-buried cable or the counterpoise wire if present. A 3-6 inch wide polyethylene film detectable tape, with a metalized foil core, shall be installed above all direct buried cable or counterpoise. The tape shall be of the color and have a continuous legend as indicated on the plans. The tape shall be installed 8 inches minimum below finished grade.

c. Restoration. Following restoration of all trenching near airport movement surfaces, the Contractor shall visually inspect the area for foreign object debris (FOD) and remove any that is found. Where soil and sod has been removed, it shall be replaced as soon as possible after the backfilling is completed. All areas disturbed by work shall be restored to its original condition. The restoration shall include the **[**sodding**] [**topsoiling**] [**fertilizing**] [**liming**] [**seeding**] [**sprigging**] [**mulching**]** as shown on the plans. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance. When trenching is through paved areas, restoration shall be equal to existing conditions. If the cable is to be installed in locations or areas where other compaction requirements are specified (under pavements, embankments, etc.) the backfill compaction shall be **[**to a minimum of 100 percent of ASTM D1557**][**backfill with controlled low strength material (CLSM) in accordance with P-153**]**. Restoration shall be considered incidental to the pay item of which it is a component part.

108-3.4 Cable markers for direct-buried cable. The location of direct buried circuits shall be marked by a concrete slab marker, 2 feet square and 4-6 inch thick, extending approximately one inch above the surface. Each cable run from a line of lights and signs to the equipment vault shall be marked at approximately every 200 feet along the cable run, with an additional marker at each change of direction of cable run. All other direct-buried cable shall be marked in the same manner. Cable markers shall be installed directly above the cable. The Contractor shall impress the word “CABLE” and directional arrows on each cable marking slab. The letters shall be approximately 4 inches high and 3 inches wide, with width of stroke 1/2 inch and 1/4 inch deep. Stencils shall be used for cable marker lettering; no hand lettering shall be permitted.

At the location of each underground cable connection/splice, except at lighting units, or isolation transformers, a concrete marker slab shall be installed to mark the location of the connection/splice. The Contractor shall impress the word “SPLICE” on each slab. The Contractor also shall impress additional circuit identification symbols on each slab as directed by the RPR. All cable markers and splice markers shall be painted international orange. Paint shall be specifically manufactured for uncured exterior concrete.

After placement, all cable or splice markers shall be given one coat of high-visibility aviation orange paint as approved by the RPR. Furnishing and installation of cable markers is incidental to the respective cable pay item.

108-3.5 Splicing. Connections of the type shown on the plans shall be made by experienced personnel regularly engaged in this type of work and shall be made as follows:

a. Cast splices. These shall be made by using crimp connectors for jointing conductors. Molds shall be assembled, and the compound shall be mixed and poured per the manufacturer's instructions and to the satisfaction of the RPR.

b. Field-attached plug-in splices. These shall be assembled per the manufacturer's instructions. These splices shall be made by plugging directly into mating connectors. The joint where the connectors come together shall be finished by one of the following methods: (1) wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2 inches on each side of the joint (2) Covered with heat shrinkable tubing with integral sealant extending at least 1-1/2 inches on each side of the joint or (3) On connector kits equipped with water seal flap; roll-over water seal flap to sealing position on mating connector.

c. Factory-molded plug-in splices. These shall be made by plugging directly into mating connectors. The joint where the connectors come together shall be finished by one of the following methods: (1) Wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2 inches on each side of the joint. (2) Covered with heat shrinkable tubing with integral sealant extending at least 1-1/2 inches on each side of the joint. or (3) On connector kits so equipped with water seal flap; roll-over water seal flap to sealing position on mating connector.

d. Taped or heat-shrink splices. A taped splice shall be made in the following manner:

Bring the cables to their final position and cut so that the conductors will butt. Remove insulation and jacket allowing for bare conductor of proper length to fit compression sleeve connector with 1/4 inch of bare conductor on each side of the connector. Prior to splicing, the two ends of the cable insulation shall be penciled using a tool designed specifically for this purpose and for cable size and type. Do not use emery paper on splicing operation since it contains metallic particles. The copper conductors shall be thoroughly cleaned. Join the conductors by inserting them equidistant into the compression connection sleeve. Crimp conductors firmly in place with crimping tool that requires a complete crimp before tool can be removed. Test the crimped connection by pulling on the cable. Scrape the insulation to assure that the entire surface over which the tape will be applied (plus 3 inches on each end) is clean. After scraping, wipe the entire area with a clean lint-free cloth. Do not use solvents.

Apply high-voltage rubber tape one-half lapped over bare conductor. This tape should be tensioned as recommended by the manufacturer. Voids in the connector area may be eliminated by highly elongating the tape, stretching it just short of its breaking point. The manufacturer's recommendation for stretching tape during splicing shall be followed. Always attempt to exactly half-lap to produce a uniform buildup. Continue buildup to 1-1/2 times cable diameter over the body of the splice with ends tapered a distance of approximately one inch over the original jacket. Cover rubber tape with two layers of vinyl pressure-sensitive tape one-half lapped. Do not use glyptol or lacquer over vinyl tape as they react as solvents to the tape. No further cable covering or splice boxes are required.

Heat shrinkable tubing shall be installed following manufacturer's instructions. Direct flame heating shall not be permitted unless recommended by the manufacturer. Cable surfaces within the limits of the heat-shrink application shall be clean and free of contaminates prior to application.

e. Assembly. Surfaces of equipment or conductors being terminated or connected shall be prepared in accordance with industry standard practice and manufacturer's recommendations. All surfaces to be connected shall be thoroughly cleaned to remove all dirt, grease, oxides, nonconductive films, or other foreign material. Paints and other nonconductive coatings shall be removed to expose base metal. Clean all surfaces at least 1/4 inch beyond all sides of the larger bonded area on all mating surfaces. Use a joint compound suitable for the materials used in the connection. Repair painted/coated surface to original condition after completing the connection.

108-3.6 Bare ~~counterpoise~~ wire installation for lightning protection and grounding. ~~If shown on the plans or included in the job specifications, bare solid [No. 6 AWG] copper counterpoise wire shall be installed for lightning protection of the underground cables. The RPR shall select one of two methods of lightning protection for the airfield lighting circuit based upon sound engineering practice and lightning strike density.~~

a. Equipotential. – Not used

b. Isolation – Not used

c. Common Installation requirements. Grounding electrodes may be rods, ground dissipation plates, radials, or other electrodes listed in the NFPA 70 (NEC) or NFPA 780.

Where raceway is installed by the directional bore, jack and bore, or other drilling method, the counterpoise conductor shall be permitted to be installed concurrently with the directional bore, jack and bore, or other drilling method raceway, external to the raceway or sleeve.

The counterpoise wire shall also be exothermically welded to ground rods installed as shown on the plans but not more than 500 apart around the entire circuit. The counterpoise system shall be continuous and terminate at the transformer vault or at the power source. It shall be securely attached to the vault or equipment external ground ring or other made electrode-grounding system. The connections shall be made as shown on the plans and in the specifications.

Where an existing airfield lighting system is being extended or modified, the new counterpoise conductors shall be interconnected to existing counterpoise conductors at each intersection of the new and existing airfield lighting counterpoise systems.

d. Parallel Voltage Systems. Provide grounding and bonding in accordance with NFPA 70, National Electrical Code.

~~108-3.7 Counterpoise installation above multiple conduits and duct banks.~~ ~~Counterpoise wires shall be installed above multiple conduits/duct banks for airfield lighting cables, with the intent being to provide a complete area of protection over the airfield lighting cables. When multiple conduits and/or duct banks for airfield cable are installed in the same trench, the number and location of counterpoise wires above the conduits shall be adequate to provide a complete area of protection measured 45 degrees each side of vertical.~~

~~Where duct banks pass under pavement to be constructed in the project, the counterpoise shall be placed above the duct bank. Reference details on the construction plans.~~

~~108-3.8 Counterpoise installation at existing duct banks.~~ ~~When airfield lighting cables are indicated on the plans to be routed through existing duct banks, the new counterpoise wiring shall be terminated at ground rods at each end of the existing duct bank where the cables being protected enter and exit the duct bank. The new counterpoise conductor shall be bonded to the existing counterpoise system.~~

~~108-3.9 Exothermic bonding.~~ ~~Bonding of counterpoise wire shall be by the exothermic welding process or equivalent method accepted by the RPR. Only personnel experienced in and regularly engaged in this type of work shall make these connections.~~

~~Contractor shall demonstrate to the satisfaction of the RPR, the welding kits, materials and procedures to be used for welded connections prior to any installations in the field. The installations shall comply with the manufacturer's recommendations and the following:~~

~~a.~~ ~~All slag shall be removed from welds.~~

~~b.~~ ~~Using an exothermic weld to bond the counterpoise to a lug on a galvanized light base is not recommended unless the base has been specially modified. Consult the manufacturer's installation directions for proper methods of bonding copper wire to the light base. See AC 150/5340-30 for galvanized light base exception.~~

~~**c.** If called for in the plans, all buried copper and weld material at weld connections shall be thoroughly coated with 6 mm of 3M™ Scotchkote™, or approved equivalent, or coated with coal tar Bitumastic® material to prevent surface exposure to corrosive soil or moisture.~~

108-3.10 Testing. The Contractor shall furnish all necessary equipment and appliances for testing the airport electrical systems and underground cable circuits before and after installation. The Contractor shall perform all tests in the presence of the RPR. The Contractor shall demonstrate the electrical characteristics to the satisfaction of the RPR. All costs for testing are incidental to the respective item being tested. For phased projects, the tests must be completed by phase. The Contractor must maintain the test results throughout the entire project as well as during the warranty period that meet the following:

a. Earth resistance testing methods shall be submitted to the RPR for approval. Earth resistance testing results shall be recorded on an approved form and testing shall be performed in the presence of the RPR. All such testing shall be at the sole expense of the Contractor.

b. Should the counterpoise or ground grid conductors be damaged or suspected of being damaged by construction activities the Contractor shall test the conductors for continuity with a low resistance ohmmeter. The conductors shall be isolated such that no parallel path exists and tested for continuity. The RPR shall approve of the test method selected. All such testing shall be at the sole expense of the Contractor.

After installation, the Contractor shall test and demonstrate to the satisfaction of the RPR the following:

c. That all affected lighting power and control circuits (existing and new) are continuous and free from short circuits.

d. That all affected circuits (existing and new) are free from unspecified grounds.

e. ~~That the insulation resistance to ground of all new non-grounded high voltage series circuits or cable segments is not less than **[ ]** megohms. Verify continuity of all series airfield lighting circuits prior to energization.~~

f. ~~That the insulation resistance to ground of all new non-grounded conductors of new multiple circuits or circuit segments is not less than 100 megohms.~~

g. That all affected circuits (existing and new) are properly connected per applicable wiring diagrams.

h. That all affected circuits (existing and new) are operable. Tests shall be conducted that include operating each control not less than 10 times and the continuous operation of each lighting and power circuit for not less than 1/2 hour.

i. That the impedance to ground of each ground rod does not exceed **25** ohms prior to establishing connections to other ground electrodes. The fall-of-potential ground impedance test shall be used, as described by American National Standards Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) Standard 81, to verify this requirement. As an alternate, clamp-on style ground impedance test meters may be used to satisfy the impedance testing requirement. Test equipment and its calibration sheets shall be submitted for review and approval by the RPR prior to performing the testing.

Two copies of tabulated results of all cable tests performed shall be supplied by the Contractor to the RPR. Where connecting new cable to existing cable, insulation resistance tests shall be performed on the new cable prior to connection to the existing circuit.

There are no approved “repair” procedures for items that have failed testing other than complete replacement.

METHOD OF MEASUREMENT

108-4.1 No separate payment will be made for conductors or feeder modifications.

108-4.3 No separate payment will be made for ground rods.

BASIS OF PAYMENT

108-5.1 All conductor or feeder modifications work shall be subsidiary to the respective pay items under SS-300.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5340-26	Maintenance of Airport Visual Aid Facilities
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
AC 150/5345-53	Airport Lighting Equipment Certification Program

Commercial Item Description

A-A-59544A	Cable and Wire, Electrical (Power, Fixed Installation)
A-A-55809	Insulation Tape, Electrical, Pressure-Sensitive Adhesive, Plastic

ASTM International (ASTM)

ASTM B3	Standard Specification for Soft or Annealed Copper Wire
ASTM B8	Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
ASTM B33	Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes
ASTM D4388	Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes

Mil Spec

MIL-PRF-23586F	Performance Specification: Sealing Compound (with Accelerator), Silicone Rubber, Electrical
MIL-I-24391	Insulation Tape, Electrical, Plastic, Pressure Sensitive
MIL-P-21035	*Paint High Zinc Duct Content, Galvanizing Repair*

National Fire Protection Association (NFPA)

NFPA-70	National Electrical Code (NEC)
NFPA-780	Standard for the Installation of Lightning Protection Systems

American National Standards Institute (ANSI)/Institute of Electrical and Electronics Engineers (IEEE)

ANSI/IEEE STD 81	IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System

Federal Aviation Administration Standard

FAA STD-019E	Lightning and Surge Protection, Grounding Bonding and Shielding Requirements for Facilities and Electronic Equipment

END OF ITEM L-108

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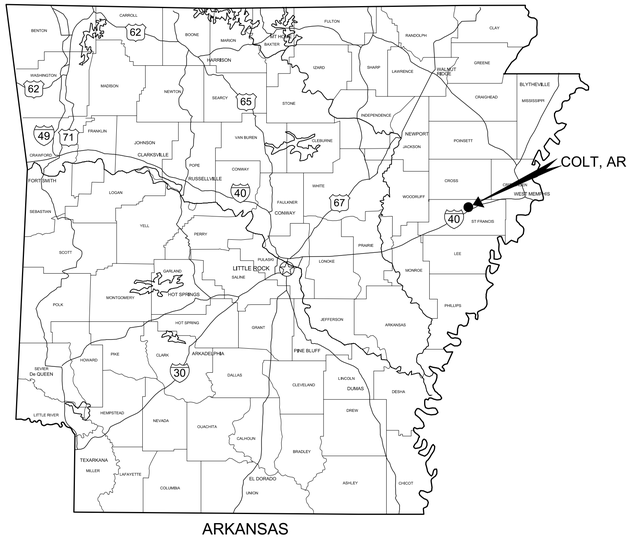
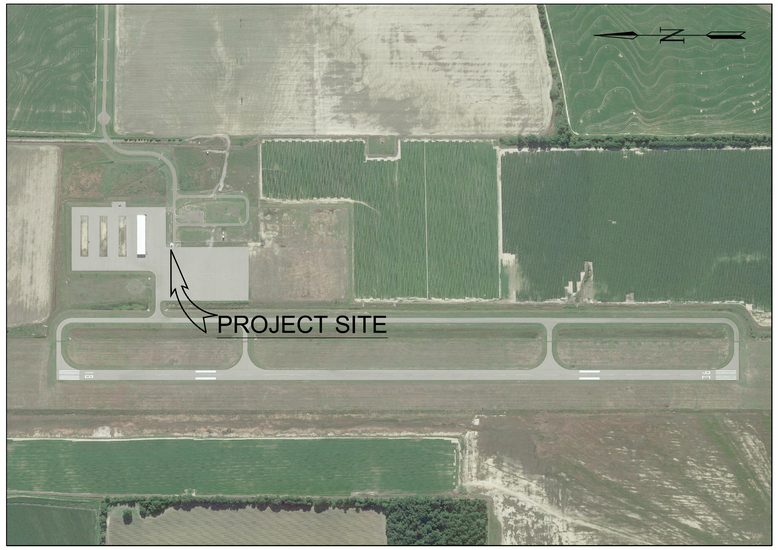
JET-A FUEL SYSTEM INSTALLATION
DELTA REGIONAL AIRPORT
DELTA REGIONAL AIRPORT AUTHORITY
COLT, ARKANSAS



LOCATION MAP



VICINITY MAP

NO SCALE

Sheet List Table		
SHEET NUMBER	*DRAWING NUMBER*	*SHEET TITLE*
1	G-001	COVER SHEET AND INDEX OF SHEETS
2	G-101	PROJECT LAYOUT AND SURVEY CONTROL PLAN
3	G-201	GENERAL NOTES
4	G-301	CONSTRUCTION SAFETY AND PHASING PLAN
5	C-101	JET-A FUELING FACILITY SITE PLAN
6	C-501	STRUCTURAL DETAILS I
7	C-502	STRUCTURAL DETAILS II
8	E-001	ELECTRICAL LEGEND AND GENERAL NOTES
9	E-501	ELECTRICAL DETAILS
10	E-502	FUEL FARM RACK DETAILS
11	E-601	ONE-LINE DIAGRAM - SCHEDULE 1
12	E-602	ONE-LINE DIAGRAM - SCHEDULE 2
13	E-603	PANEL SCHEDULES

GARVER PROJECT NO. 19A10120
OCTOBER 2020

GARVER
4701 Northshore Drive
North Little Rock, AR 72118
(501) 376-3633

Know what's **below.**
Call before you dig.

CAUTION: UNDERGROUND UTILITIES ARE WITHIN AND ADJACENT TO THE LIMITS OF CONSTRUCTION. AN ATTEMPT HAS BEEN MADE TO LOCATE THESE UTILITIES ON THE PLANS. HOWEVER, ALL EXISTING UTILITIES MAY NOT BE SHOWN, AND THE ACTUAL LOCATIONS OF THE UTILITIES MAY VARY FROM THE LOCATIONS SHOWN. PRIOR TO BEGINNING ANY TYPE OF EXCAVATION, THE CONTRACTOR SHALL CONTACT THE UTILITIES INVOLVED AND MAKE ARRANGEMENTS FOR THE LOCATION OF THE UTILITIES ON THE GROUND. THE CONTRACTOR SHALL MAINTAIN THE UTILITY LOCATION MARKINGS UNTIL THEY ARE NO LONGER NECESSARY.

ARKANSAS STATE LAW, THE UNDERGROUND FACILITIES DAMAGE PREVENTION ACT, REQUIRES TWO WORKING DAYS ADVANCE NOTIFICATION THROUGH THE ARKANSAS ONE-CALL SYSTEM CENTER BEFORE EXCAVATING USING MECHANIZED EQUIPMENT OR EXPLOSIVES (EXCEPT IN THE CASE OF AN EMERGENCY). THE ONE-CALL SYSTEM PHONE NUMBER IS 1-800-482-8998. THE CONTRACTOR IS ADVISED THAT THERE IS A SEVERE PENALTY FOR NOT MAKING THIS CALL. NOT ALL UTILITY COMPANIES ARE MEMBERS OF THE ARKANSAS ONE-CALL SYSTEM; THEREFORE, THE CONTRACTOR IS ADVISED TO CONTACT ALL NON-MEMBER UTILITIES AS WELL AS THE ONE-CALL SYSTEM.

CERTIFICATE OF AUTHORIZATION
GARVER LLC
No. 766
ARKANSAS ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14751
JORDAN C. CULVER

DIGITALLY SIGNED: 10/20/2020

REV.	DATE	DESCRIPTION	BY

DELTA REGIONAL AIRPORT AUTHORITY
COLT, AR

JET-A FUEL SYSTEM INSTALLATION

COVER SHEET AND INDEX OF SHEETS

JOB NO.: 19A10120
DATE: OCT. 2020
DESIGNED BY: JLV
DRAWN BY: JLV

BAR IS ONE INCH ON ORIGINAL DRAWING
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
G-001

SHEET NUMBER **1**

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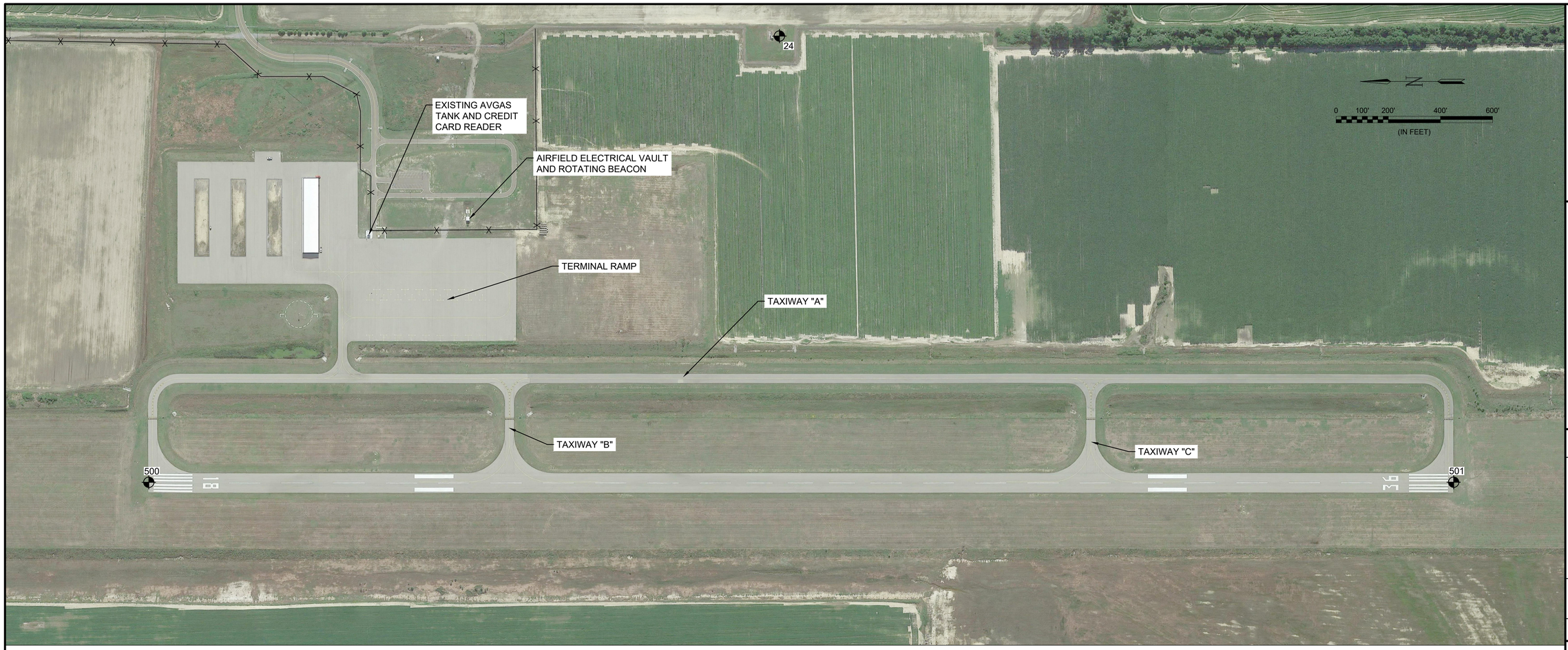

SURVEY CONTROL DATA

POINT NO.	EASTING	NORTHING	ELEVATION	DESCRIPTION
24	288538.0330	1664963.0330	232.55'	ACP
162 (NOT SHOWN)	285452.7170	1661062.9040	216.46'	ACP
150A (NOT SHOWN)	294428.3625	1665058.7195	242.49'	1/2" REBAR, RESHOT
58A (NOT SHOWN)	282272.0450	1665429.0890	233.20'	1/2" REBAR, RESHOT
181 (NOT SHOWN)	292897.0960	1664124.2923	238.91'	1/2" REBAR, RESHOT
500	290943.5960	1663264.1610	238.88'	NAIL RUNWAY
501	285941.2570	1663264.4830	228.81'	NAIL RUNWAY

ITEMS OF WORK - SCHEDULE 1

1. CONSTRUCT CONCRETE PAD FOR THE PROPOSED JET-A TANK LOCATION.
2. INSTALL NEW 12,000 GALLON JET-A TANK, DISPENSING EQUIPMENT, 10 HP PUMP, NEW ELECTRICAL SERVICE, AND OTHER ASSOCIATED ELECTRICAL ITEMS.

ITEMS OF WORK - SCHEDULE 2

1. CONSTRUCT CONCRETE PAD FOR THE PROPOSED JET-A TANK LOCATION.
2. INSTALL NEW 10,000 GALLON JET-A TANK, DISPENSING EQUIPMENT, 5 HP PUMP, AND OTHER ASSOCIATED ELECTRICAL ITEMS.

LEGEND

- SURVEY CONTROL POINT
- EXISTING FENCE LINE

GARVER

CERTIFICATE OF AUTHORIZATION
GARVER LLC
No. 766
ARKANSAS ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14751
JORDAN C. CUTLER

DIGITALLY SIGNED: 10/20/2020

REV.	DATE	DESCRIPTION	BY

DELTA REGIONAL AIRPORT AUTHORITY
COLT, AR

JET-A FUEL SYSTEM INSTALLATION

PROJECT LAYOUT AND SURVEY CONTROL PLAN

JOB NO.: 19A10120
DATE: OCT. 2020
DESIGNED BY: JLV
DRAWN BY: JLV

BAR IS ONE INCH ON ORIGINAL DRAWING
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
G-101

SHEET NUMBER **2**

File: L:\2019\19A10120 - DRP Jet-A Fuel System\Drawings\DRP-G101-PL.dwg Last Save: 10/20/2020 8:41 AM Last saved by: JMElliott
Last plotted by: Halbrook, Chris J. Plot Style: AECmono.ctb Plot Scale: 1:2.5849 Plot Date: 10/20/2020 11:15 AM Plotter used: None

1. THE TERM "OWNER", AS CONTAINED IN THESE PLANS, SHALL REFER TO DELTA REGIONAL AIRPORT AUTHORITY.

2. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS AND CODES IN REGARD TO SAFETY, NOISE CONTROL, EROSION CONTROL, WATERSHED PROTECTION, AND EMISSIONS DURING CONSTRUCTION.

3. THE CONTRACTOR SHALL COMPLY WITH ALL CITY, COUNTY AND STATE TRAFFIC REGULATIONS CONCERNING THE USE OF STREETS AND ROADWAYS FOR HAULING. ANY DAMAGE DONE TO THE ROADWAYS DUE TO THE CONTRACTOR'S EQUIPMENT OR HAULING OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR, TO THE OWNER'S SATISFACTION AT NO COST TO THE OWNER. CONTRACTOR SHALL MAINTAIN CLEANLINESS OF ALL AFFECTED STREETS AND ROADWAYS TO THE OWNER'S SATISFACTION.

4. UPON RECEIPT OF THE NOTICE OF AWARD, THE CONTRACTOR SHALL DESIGNATE IN WRITING TO THE ENGINEER FOR APPROVAL THE NAME OF THE SUPERINTENDENT WHO WILL BE IN CHARGE OF THE CONTRACTOR'S OPERATIONS. ONCE ASSIGNED TO THE PROJECT, THE SUPERINTENDENT SHALL NOT BE REMOVED BY THE CONTRACTOR WITHOUT THE PRIOR CONSENT OF THE ENGINEER. THE CONTRACTOR'S PROJECT SUPERINTENDENT SHALL HAVE CONTROL OVER THE CONTRACTOR'S WORK FORCE AND THE KNOWLEDGE AND AUTHORITY TO IMPLEMENT ANY ACTIONS REQUIRED TO ENSURE COMPLIANCE WITH THE PLANS AND SPECIFICATIONS AND QUALITY CONTROL PROGRAM.

5. NO FIELD CHANGES OR DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS SHALL BE MADE WITHOUT THE PRIOR APPROVAL OF THE OWNER AND THE ENGINEER.

6. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL VEHICULAR TRAFFIC CONTROL DEVICES DURING CONSTRUCTION IN ACCORDANCE WITH THE PLANS AND ALL STATE, COUNTY AND LOCAL REQUIREMENTS.

7. CONTRACTOR TO PROVIDE ANY NECESSARY ROAD SIGNS AND/OR BARRICADES FOR USE OUTSIDE OF THE AOA, OFF OF THE AIRFIELD, AND AT THE CONSTRUCTION ENTRANCE, AS WELL AS DIRECTIONAL SIGNS FOR CONSTRUCTION TRAFFIC. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF SAID BARRICADES AND SIGNS.

8. THE CONTRACTOR SHALL CONDUCT FINAL CLEANING OF AFFECTED AIRPORT PAVEMENTS, TO THE OWNER'S SATISFACTION, PRIOR TO RE-OPENING THE PAVEMENTS TO AIRCRAFT AND VEHICLE TRAFFIC.

9. CONSTRUCTION EQUIPMENT AND MATERIALS SHALL ONLY ENTER THE SITE THROUGH THE CONSTRUCTION ENTRANCE AND SHALL ONLY BE STORED IN AREAS DESIGNATED BY THE OWNER.

10. ONLY RUBBER TIRED VEHICLES SHALL BE ALLOWED ON EXISTING AIRPORT PAVEMENT.

11. THE CONTRACTOR SHALL LAYOUT, CONSTRUCT, MAINTAIN, AND REPAIR ALL ACCESS/HAUL ROADS NEEDED TO CONSTRUCT THE WORK. THE EXISTING ACCESS ROADS SHOWN ON THE PLANS SHALL BE REPAIRED, AT NO COST TO THE OWNER, AS DETERMINED NECESSARY BY THE ENGINEER AT THE CLOSE OF THE PROJECT.

12. ANY DAMAGE TO EXISTING PAVEMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR PROMPTLY AT NO ADDITIONAL COST TO THE OWNER. REPAIR METHODS SHALL BE APPROVED BY THE OWNER PRIOR TO ACTUAL REPAIR. CONTRACTOR SHALL PREPARE A PHOTOGRAPHIC AND VIDEO LOG OF THE PRE-EXISTING CONDITIONS OF THESE EXISTING PAVEMENTS TO REMAIN, PRIOR TO BEGINNING CONSTRUCTION. THIS LOG SHALL BE SUBMITTED TO THE ENGINEER WITHIN 1 WEEK OF THE START OF CONSTRUCTION.

13. THE CONTRACTOR SHALL CONTINUOUSLY MAINTAIN THE CONSTRUCTION WORK AREA FREE OF TRASH. ALL TRASH SHALL BE TOTALLY REMOVED FROM THE WORK AREA BEFORE THE END OF EACH WORK PERIOD. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AT LEAST ONE COVERED DISPOSAL SITE FOR TRASH DISPOSAL AT AN APPROVED LOCATION. NO ON-SITE BURNING OF TRASH IS PERMITTED.

14. FOR INSPECTION AND MAINTENANCE PURPOSES, THE CONTRACTOR SHALL PROVIDE THE OWNER AND ITS REPRESENTATIVES ACCESS TO THE CONSTRUCTION WORK AREA AT ALL TIMES.

15. THE CONTRACTOR SHALL DISCONTINUE OPERATIONS THAT VIOLATE EXISTING LAWS AND REGULATIONS OR CREATE AN UNDUE HAZARD TO AIR TRAFFIC.

16. DO NOT SCALE DRAWINGS. USE GIVEN DIMENSIONS ONLY.

17. ANY ITEMS REQUIRED TO COMPLETE THE PROJECT, WHICH ARE NOT INDICATED ON THE SUMMARY OF QUANTITIES WITH A SPECIFIC PAY ITEM, SHALL BE INCIDENTAL TO THE CONTRACT.

18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ANY REQUIRED PERMITS.

19. AIRPORT RUNWAYS AND TAXIWAYS SHOULD REMAIN IN USE BY AIRCRAFT TO THE MAXIMUM EXTENT POSSIBLE.

20. THE INTENT OF THE CONTRACT DOCUMENTS IS TO ORGANIZE AND CONTROL THE WORK SO THAT IT IS ACCOMPLISHED WITH MINIMUM INCONVENIENCE TO THE AIRPORT, AND TO INSURE THE SAFETY OF AIRCRAFT MOVEMENTS AT THE AIRPORT DURING THE CONSTRUCTION PERIOD. ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH FAA AC 150/5370-2F, OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, LATEST EDITION.

21. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR LOCATING ALL UTILITIES AND PROTECTING THEM. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES TO LOCATE UTILITIES AND SHALL BE RESPONSIBLE FOR REPAIRING ANY UTILITIES DAMAGED DURING CONSTRUCTION TO OWNER'S SATISFACTION AND AT NO COST TO THE UTILITY OWNER OR AIRPORT. USE OF UTILITY OWNER LOCATION INFORMATION SHALL IN NO WAY RELIEVE THE CONTRACTOR OF HIS SOLE RESPONSIBILITY TO LOCATE, PROTECT, AND REPAIR DAMAGE TO ANY UTILITIES DAMAGED BY HIS OPERATIONS.

22. NO SMOKING IS ALLOWED IN ANY LOCATION INSIDE THE AIRPORTS SECURITY FENCE.

23. THE CONTRACTOR WILL BE RESPONSIBLE FOR STAKING OF ALL ELEMENTS OF THE PROJECT.

24. ONLY VEHICLES MARKED WITH THE CONTRACTOR'S COMPANY LOGO ON BOTH SIDES OF VEHICLE WILL BE ALLOWED ON THE INSIDE OF THE PERIMETER FENCE. ALL EQUIPMENT SHALL BE EQUIPPED WITH ORANGE AND WHITE CHECKED FLAGS AND FLASHING YELLOW STROBE LIGHTS. STROBE LIGHTS MUST BE USED BY ALL VEHICLES AT ALL TIMES. ALL VEHICLE MARKING SHALL CONFORM TO FAA AC 150/2510-5D. NO PERSONAL VEHICLES ARE PERMITTED INSIDE THE PERIMETER FENCE.

25. WASTE MATERIAL PRODUCED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE PROPERLY DISPOSED OF OFF AIRPORT PROPERTY IN AN APPROVED DISPOSAL SITE AT CONTRACTOR'S EXPENSE.

26. THE CONTRACTOR SHALL CONTROL DUST FROM HIS/HER OPERATION TO A LEVEL ACCEPTABLE TO THE ENGINEER AT ALL TIMES. THE CONTRACTOR SHALL HAVE AVAILABLE TO HIM/HER POWER DRIVEN SWEEPER, WATERING TRUCKS, AND OTHER EQUIPMENT NECESSARY TO CONTROL DUST AND DEBRIS AT ALL TIMES. ALL METHODS FOR CONTROLLING DUST AND DEBRIS SHALL BE SUBJECT TO THE ENGINEER'S ACCEPTANCE. DUST AND DEBRIS CONTROL SHALL BE STRICTLY MONITORED DUE TO ITS IMPACT ON AIRCRAFT SAFETY. FAILURE TO PROPERLY CONTROL DUST AND DEBRIS OR TO RESPOND TO ANY REQUEST TO DO SO WILL RESULT IN CONSTRUCTION ACTIVITIES BEING STOPPED.

27. ALL CONTRACTOR VEHICLES AND TRAFFIC SHALL REMAIN WITHIN THE DESIGNATED STAGING AREA OR HAUL ROUTES.

28. AT REGULAR INTERVALS, THE CONTRACTOR SHALL CLEAN UP THE SITE IN ORDER THAT THE SITE PRESENTS A NEAT APPEARANCE AND THAT THE PROGRESS OF WORK WILL NOT BE IMPEDED. ONE SUCH CLEAN UP SHALL IMMEDIATELY PRECEDE FINAL INSPECTION. IMMEDIATELY FOLLOWING ACCEPTANCE OF THE WORK BY THE OWNER, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EQUIPMENT, SURPLUS MATERIALS, AND DEBRIS RESULTING FROM HIS OPERATIONS, AND LEAVE THE SITE IN A CONDITION FULLY ACCEPTABLE TO THE OWNER.

STAGING AREA NOTES:

1. THE CONTRACTOR'S EMPLOYEES' AND VISITORS' VEHICLES SHALL PARK IN THE CONTRACTOR'S PARKING LOT. ONLY OWNER APPROVED PERSONNEL WILL BE ALLOWED TO ACCESS AND/OR PARK ON AIRPORT PROPERTY.

2. THE LOCATION AND SIZE OF THE CONTRACTOR'S STAGING AREA IS SHOWN FOR REFERENCE ONLY. THE EXACT LIMITS OF THE CONTRACTOR'S PARKING AND STAGING AREA FOR MATERIAL STOCKPILING, OFFICE TRAILERS, AND DELIVERIES SHALL BE PROPOSED BY THE CONTRACTOR FOR THE APPROVAL OF THE ENGINEER. THE CONTRACTOR STAGING PLANS SHALL BE APPROVED BY THE OWNER PRIOR TO CONSTRUCTION.

3. THE STAGING AREA SHALL BE PREPARED TO A STABLE AND DRAINABLE CONDITION. THE CONTRACTOR MAY HAVE THE OPTION OF ERECTING CHAIN-LINK SECURITY FENCING TO DELINEATE AND PROTECT THE AREA.

4. THE CONTRACTOR MAY DO SOME GRADING AND DRAINAGE WORK TO ADAPT THE AREA TO SPECIFIC NEEDS. UPON COMPLETION OF THE WORK, THE AREA WILL BE DRESSED AND RESTORED TO ITS ORIGINAL CONDITION TO THE SATISFACTION OF THE ENGINEER AND OWNER UPON COMPLETION OF THE CONTRACT WORK.

5. THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY CONNECTIONS TO THE STAGING AREA. ALL REQUIRED UTILITIES FOR THE CONTRACTOR'S STAGING AREA SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY AGENCY BY THE CONTRACTOR. THE CONTRACTOR SHALL OBTAIN ANY APPLICABLE METERS AND PERMITS. UTILITY ARRANGEMENTS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

6. NO SEPARATE PAY ITEM SHALL BE MADE FOR ANY ITEM REQUIRED FOR THE CONTRACTOR TO ENCLOSE AND DEVELOP HIS/HER STAGING AREA.

7. THE OWNER SHALL NOT BE RESPONSIBLE FOR ANY LOST OR STOLEN PROPERTY.

8. NO EQUIPMENT OR VEHICLES SHALL BE PARKED WITHIN 10 FEET OF ANY AIRPORT OPERATIONS AREA (AOA).

FOREIGN OBJECT DEBRIS (FOD)/PENALTY NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL AND CLEANING THEIR HAUL ROUTE AND WORK AREAS. OF PARTICULAR IMPORTANCE, CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING FOD IN ANY AREAS OF AIRCRAFT OPERATIONS AFFECTED BY THE CONTRACTOR. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AN AIRCRAFT DAMAGE THAT OCCURS AS A RESULT OF FOD IN THEIR WORK AREAS. THE AIRPORT NOR ENGINEER WILL BE RESPONSIBLE FOR FOD INSPECTIONS, MAINTENANCE, OR OPERATION OF ANY ACTIVE AIRFIELD PAVEMENTS BEING UTILIZED BY THE CONTRACTOR.

2. IF AIRCRAFT OPERATORS COMPLAIN OF FOD OR OTHER UNSAFE CONDITIONS,

   A. 1ST OFFENSE: CONTRACTOR SHALL CEASE CROSSING OPERATIONS, REPORT ON INCIDENT AND REMEDIATION PRACTICES. CONTRACTOR SHALL NOT RESUME OPERATIONS WITHOUT OWNER APPROVAL.

   B. 2ND OFFENSE: CONTRACTOR SHALL CEASE CROSSING OPERATIONS AND MUST PROVIDE FOR ALTERNATE HAUL ROUTE(S)/SITE ACCESS.

3. IF AIRCRAFT SUSTAIN DAMAGE AS A RESULT OF FOD OR OTHER UNSAFE CONDITIONS:

   A. 1ST OFFENSE: CONTRACTOR SHALL BE FISCALLY RESPONSIBLE FOR ANY DAMAGE INCURRED AND SHALL CEASE CROSSING OPERATIONS AND MUST FULLY PROVIDE FOR ALTERNATE HAUL ROUTE(S)/SITE ACCESS.

GARVER

CERTIFICATE OF AUTHORIZATION
GARVER LLC No. 766
ARKANSAS–ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14751
JORDAN C. CLUVER

DIGITALLY SIGNED: 10/20/2020

REV.	DATE	DESCRIPTION	BY

DELTA REGIONAL AIRPORT AUTHORITY
COLT, AR

JET-A FUEL SYSTEM INSTALLATION

GENERAL NOTES

JOB NO.: 19A10120
DATE: OCT. 2020
DESIGNED BY: JLV
DRAWN BY: JLV

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NUMBER
G-201

SHEET NUMBER **3**

File: L:\2019\19A10120 - DRP Jet-A Fuel System\Drawings\G-201 GENERAL NOTES I.dwg Last Save: 10/20/2020 7:08 AM Last saved by: JMElliott
Last plotted by: Halbrook, Chris J. Plot Style: AECmono.ctb Plot Scale: 1:2.5849 Plot Date: 10/20/2020 11:16 AM Plotter used: None

CONTRACT TIME

PHASE	CONSECUTIVE CALENDAR DAYS
WORK AREA 1 (30 DAYS)	20 40 60 80 100 120

N

0 50' 100' 200' 300'
(IN FEET)

WORK AREA 1 (30 DAYS):

CONTRACTOR SHALL INSTALL LIGHTED BARRICADES AS SHOWN ON THE PLANS IN ACCORDANCE WITH ALL APPROPRIATE FAA ADVISORY CIRCULARS.

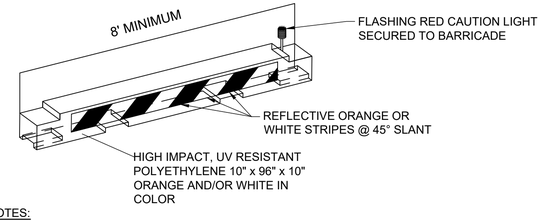
CONTRACTOR SHALL CONSTRUCT NEW CONCRETE PAD, INSTALL JET-A FUEL TANK AND ALL ASSOCIATED FUEL DISPENSING EQUIPMENT. CONTRACTOR SHALL CLEAN UP WORK AREA AND REMOVE LIGHTED BARRICADES.

LEGEND

- (EP) CONTRACTOR'S EMPLOYEE PARKING
- LIGHTED LOW PROFILE BARRICADES
- CONTRACTOR ACCESS AND HAUL ROUTE
- PROCUREMENT PERIOD
- WORK AREA 1
- CONTRACTOR'S EQUIPMENT STORAGE AND STAGING AREA
- FENCE

NOTES TO THE CONTRACTOR:

1. CONTRACTOR SHALL FOLLOW THE REQUIREMENTS OF AC 150/5370-2G OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION AT ALL TIMES.
2. CONTRACTOR'S ACCESS/HAUL ROUTES, EMPLOYEE PARKING, AND EQUIPMENT STORAGE AREA ARE SUBJECT TO CHANGE AT THE DISCRETION OF THE ENGINEER OR OWNER. FINAL LOCATION OF THESE ITEMS WILL BE DISCUSSED AT THE PRECONSTRUCTION MEETING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE DONE DUE TO HIS/HER HAUL/ACCESS ROUTES.
3. THE CONTRACTOR SHALL ENSURE THAT THE PAVEMENT SURFACES ARE KEPT CLEAN FROM DIRT, MUD, AND OTHER DEBRIS FROM THE CONTRACTOR'S EQUIPMENT. FREQUENT CLEAN UP IN THE VICINITY OF THE CONTRACTOR'S WORK AREAS IS REQUIRED. THE CONTRACTOR SHALL PERFORM FOREIGN OBJECT DEBRIS (FOD) CHECKS AT THE CONCLUSION OF EACH WORK DAY. SEE AC 150/5210-24, AIRPORT FOREIGN OBJECT DEBRIS (FOD) MANAGEMENT FOR FURTHER INFORMATION.
4. CONTRACTOR SHALL PROTECT ALL ITEMS NOT DESIGNATED FOR REMOVAL.
5. THE APRON PAVEMENT SHALL REMAIN OPEN FOR THE DURATION OF CONSTRUCTION. THE CONTRACTOR SHALL WATCH FOR TAXIING AIRCRAFT PRIOR TO CROSSING ANY APRON PAVEMENT. AIRCRAFT SHALL HAVE THE RIGHT OF WAY AT ALL TIMES.
6. TIRES OF VEHICLES AND EQUIPMENT SHALL BE INSPECTED FOR FOD PRIOR TO ROLLING ONTO PAVEMENT. IN THE EVENT FOD IS TRACKED ONTO PAVEMENT, PAVEMENT SHALL BE CLEANED OF FOD IMMEDIATELY.
7. CONTRACTOR SHALL REMAIN CLEAR OF APRON PAVEMENT, TAXIWAY, AND RUNWAY 18-36 AT ALL TIMES.
8. FOLLOWING THE AWARD OF THE CONTRACT AND PRIOR TO ISSUING THE NOTICE TO PROCEED, THE OWNER WILL ISSUE THE CONTRACTOR A NOTICE TO PROCURE TO ALLOW THE CONTRACTOR SUFFICIENT TIME TO PROCURE CONSTRUCTION MATERIALS WITH A LONG LEAD TIME.
9. CONTRACTOR EMPLOYEES SHALL NOT USE ANY OF THE FACILITIES OF THE TERMINAL BUILDING AT ANY TIME.



NOTES:

1. BARRICADES SHALL MEET THE REQUIREMENTS OF THE CURRENT FAA ADVISORY CIRCULAR 150/5370-2 AND BE APPROVED BY THE ENGINEER.
2. CONTRACTOR SHALL WEIGHT BARRICADE TO PREVENT DISPLACEMENT. THE METHOD SHALL BE APPROVED BY THE ENGINEER.
3. BARRICADES SHALL BE LOCATED AS DEFINED IN THE CONSTRUCTION SAFETY AND PHASING PLAN (CSPP).
4. BARRICADES SHALL BE LINKED.

1 G-301

LOW PROFILE AIRCRAFT BARRICADE (MOVEMENT AREAS)

SCALE: NONE

GARVER

CERTIFICATE OF AUTHORIZATION
GARVER LLC
No. 766
ARKANSAS ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14751
JORDAN C. CULVER

DIGITALLY SIGNED: 10/20/2020

REV.	DATE	DESCRIPTION	BY

DELTA REGIONAL AIRPORT AUTHORITY
COLT, AR

JET-A FUEL SYSTEM INSTALLATION

CONSTRUCTION SAFETY AND PHASING PLAN

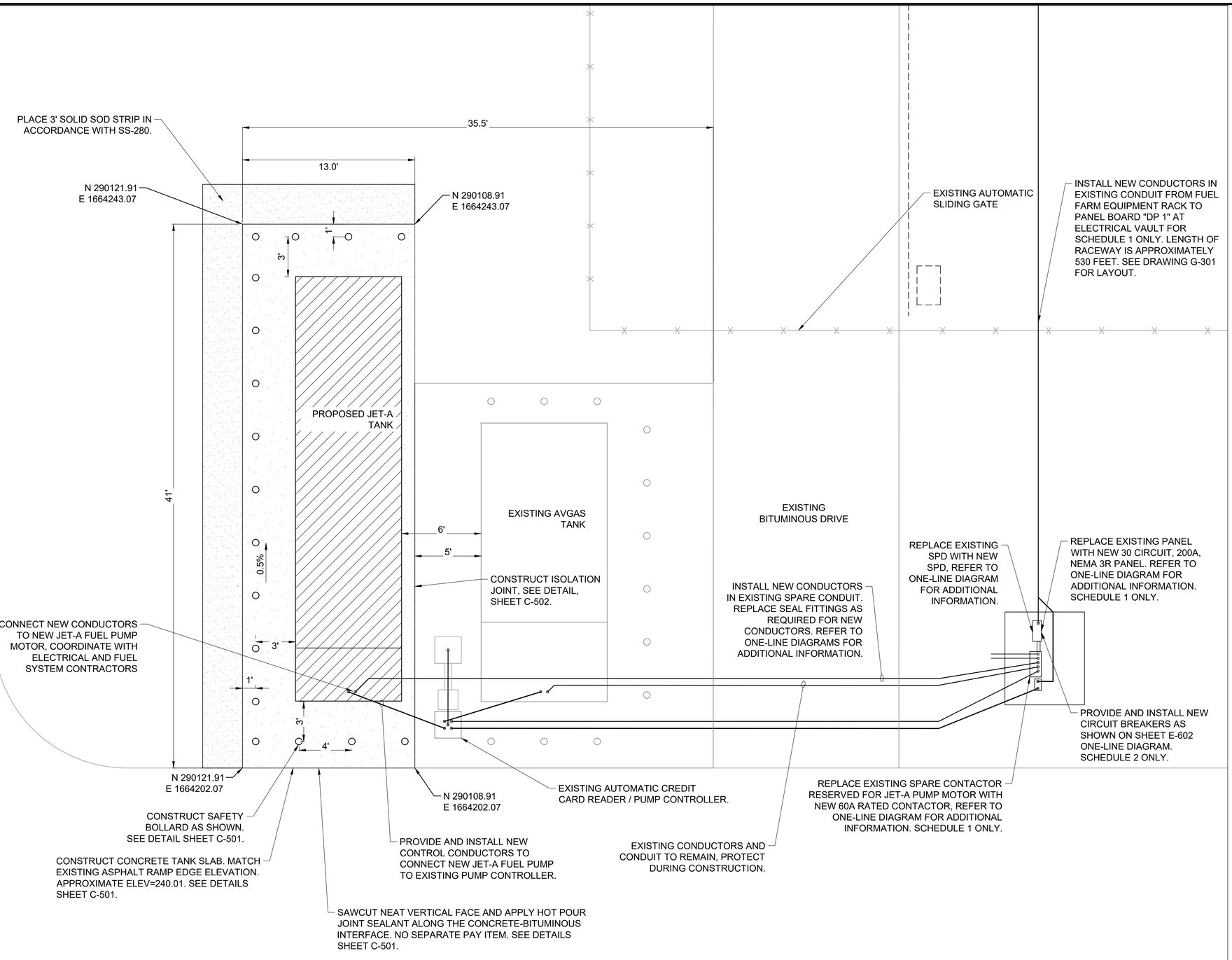
JOB NO.: 19A10120
DATE: OCT. 2020
DESIGNED BY: JLV
DRAWN BY: JLV

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
G-301

SHEET NUMBER **4**

File: L:\2019\19A10120 - DRP Jet-A Fuel System\Drawings\DRP-G301-CSPP.dwg Last Save: 10/20/2020 7:17 AM Last saved by: JMElliott
Last plotted by: Halbrook, Chris J. Plot Style: AECmono.ctb Plot Scale: 1:2.5849 Plot Date: 10/20/2020 11:16 AM Plotter used: None



N

0 2' 4' 8' 12'

(IN FEET)

LEGEND

- PROPOSED CONCRETE PAD
- PROPOSED SODDING
- PROPOSED JET-A TANK

NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE STATE AND LOCAL FIRE MARSHALL AND CODE ENFORCEMENT PERSONNEL AND FOR OBTAINING ALL NECESSARY PERMITS.
2. THE FUELING SYSTEM SHALL BE DESIGNED AND CONSTRUCTED ACCORDING TO FAA ADVISORY CIRCULAR 150/5230-4B, NFPA 30, NFPA 30A, NFPA 70, NFPA 407, NFPA 780, AIP 150 SPECIFICATIONS, AND NATIONAL BUREAU OF STANDARDS HANDBOOK NO. 44.
3. CONTRACTOR SHALL GRADE AREA ADJACENT TO TANK SLAB TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE FUEL SYSTEM.
4. THE PROJECT WILL BE BID IN TWO SCHEDULES. SCHEDULE 1 INCLUDES A 12,000 GALLON JET-A TANK, 10 HP MOTOR, NEW ELECTRICAL POWER FEEDER, AND NEW PANEL. SCHEDULE 2 INCLUDES A 10,000 GALLON TANK, 5 HP MOTOR, AND MINIMAL ELECTRICAL MODIFICATIONS.
5. REFER TO ONE-LINE DIAGRAMS AND DETAILS FOR ADDITIONAL INFORMATION ON ELECTRICAL SCOPE OF WORK. NOTE THAT SCHEDULE 1 REQUIRES ADDITIONAL CIRCUIT BREAKER REPLACEMENT (FOR ELECTRICAL PANEL FEEDER) WITHIN AIRFIELD ELECTRICAL VAULT.

NOTES:
CONTRACTOR SHALL GRADE AREA ADJACENT TO TANK SLAB TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE FUEL SYSTEM.

GARVER

CERTIFICATE OF AUTHORIZATION
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STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14751
JORDAN C. CULVER

DIGITALLY SIGNED: 10/20/2020

REV.	DATE	DESCRIPTION	BY

DELTA REGIONAL AIRPORT AUTHORITY
COLT, AR

JET-A FUEL SYSTEM INSTALLATION

JET-A FUELING FACILITY SITE PLAN

JOB NO.: 19A10120
DATE: OCT. 2020
DESIGNED BY: JLV
DRAWN BY: JLV

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
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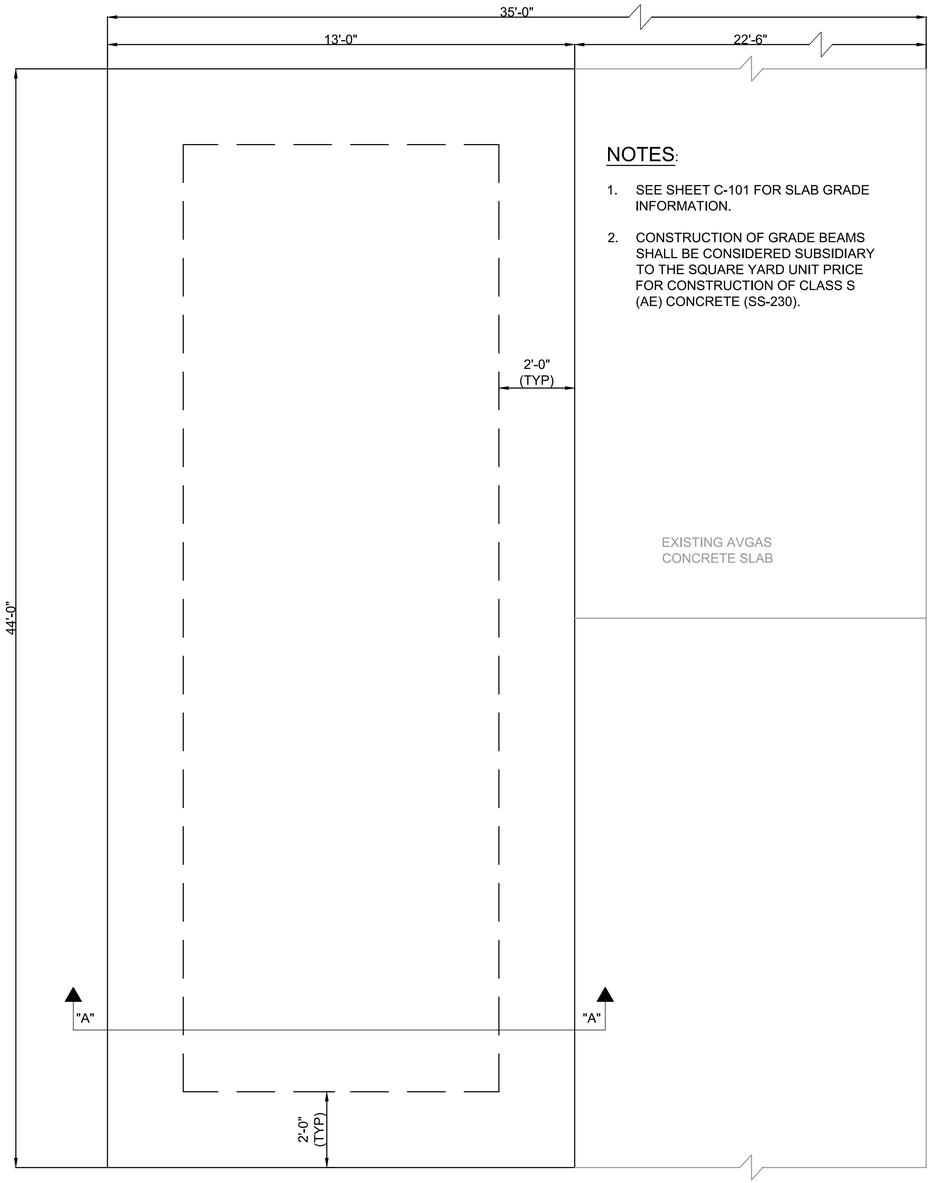
DRAWING NUMBER
C-101

SHEET NUMBER **5**

File: L:\2019\19A10120 - DRP Jet-A Fuel System\Drawings\DRP-C101-SP.dwg Last Save: 10/20/2020 7:41 AM Last saved by: JMElliott
Last plotted by: Elliott, Jarrett M. Plot Style: AECmono.ctb Plot Scale: 1:2.5849 Plot Date: 10/20/2020 12:08 PM Plotter used: None



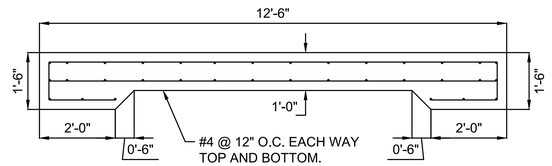
NOTES:

1. SEE SHEET C-101 FOR SLAB GRADE INFORMATION.
2. CONSTRUCTION OF GRADE BEAMS SHALL BE CONSIDERED SUBSIDIARY TO THE SQUARE YARD UNIT PRICE FOR CONSTRUCTION OF CLASS S (AE) CONCRETE (SS-230).

EXISTING AVGAS CONCRETE SLAB

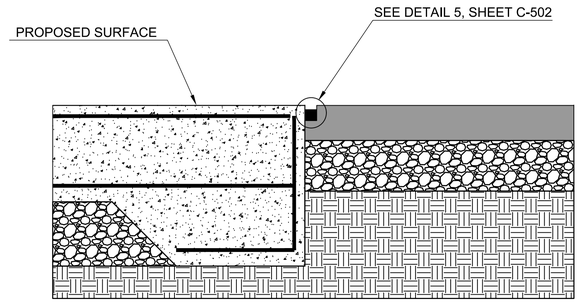
1 C-501 FUEL TANK SLAB DETAIL

SCALE: NONE



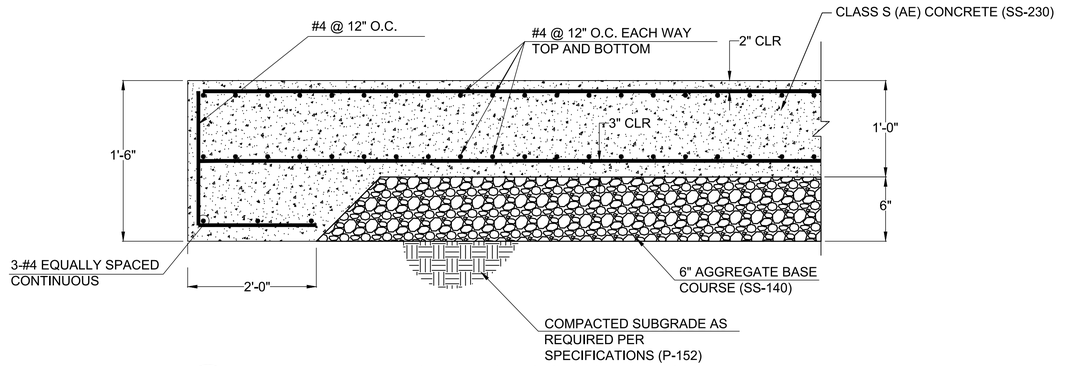
"A-A"

SCALE NONE



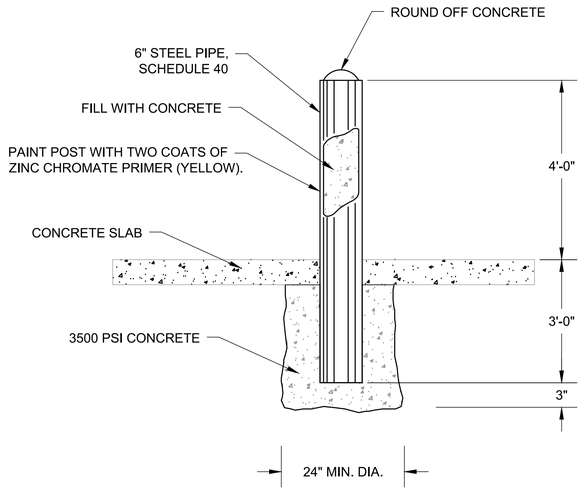
2 C-501 BITUMINOUS PAVEMENT/FUEL TANK SLAB JOINTS

SCALE: NONE



3 C-501 FUEL TANK SLAB CROSS SECTION

SCALE: NONE



4 C-501 SAFETY BOLLARD (SS-281)

SCALE: NONE

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GARVER LLC No. 766
ARKANSAS ENGINEER

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LICENSED PROFESSIONAL ENGINEER
No.14751
JORDAN C. CULVER

DIGITALLY SIGNED: 10/20/2020

REV.	DATE	DESCRIPTION	BY

DELTA REGIONAL AIRPORT AUTHORITY
COLT, AR

JET-A FUEL SYSTEM INSTALLATION

STRUCTURAL DETAILS I

JOB NO.: 19A10120
DATE: OCT. 2020
DESIGNED BY: JLV
DRAWN BY: JLV

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0 1"
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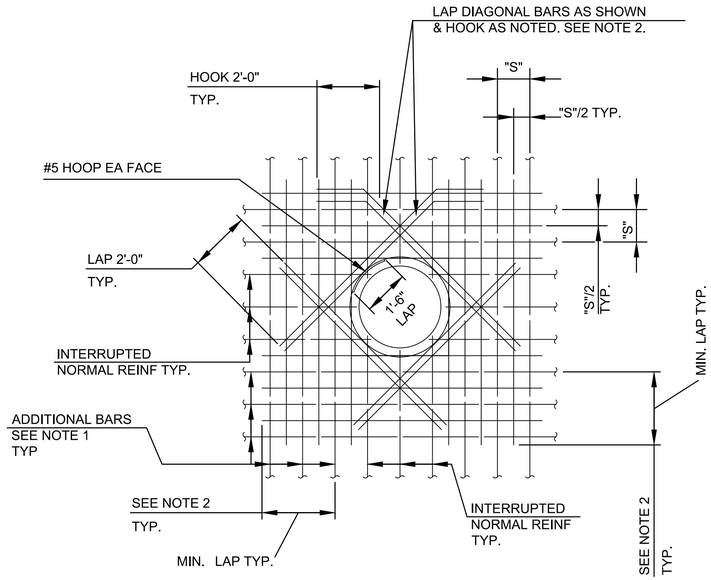
DRAWING NUMBER
C-501

SHEET NUMBER **6**

File: L:\2019\19A10120 - DRP Jet-A Fuel System\Drawings\DRP-C500-DT.dwg Last Save: 10/20/2020 8:18 AM Last saved by: JMElliott
Last plotted by: Halbrook, Chris J. Plot Style: AECmono.ctb Plot Scale: 1:2.5849 Plot Date: 10/20/2020 11:17 AM Plotter used: None



1 C-502

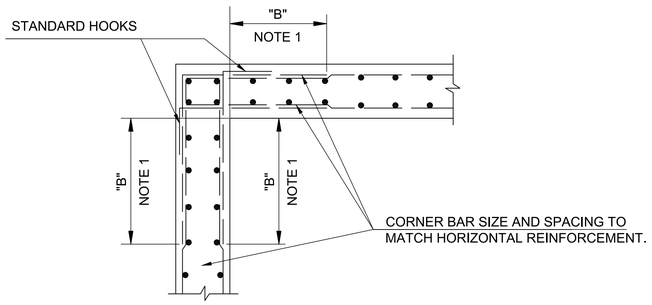
ADDITIONAL REINFORCING FOR OPENINGS

SCALE: NONE

NOTES:

1. NUMBER OF ADDITIONAL REINFORCEMENT BARS AT EACH SIDE OF OPENING SHALL EQUAL HALF THE NUMBER OF INTERRUPTED BARS IN EACH LAYER OF REINFORCEMENT.

2. PROVIDE STANDARD HOOKS FOR BARS IF LAP LENGTH EXTENSION CANNOT BE OBTAINED AT JOINTS OR OTHER OBSTRUCTIONS. PLACE ADDITIONAL BARS IN SAME PLANES AS INTERRUPTED REINFORCEMENT.



2 C-502

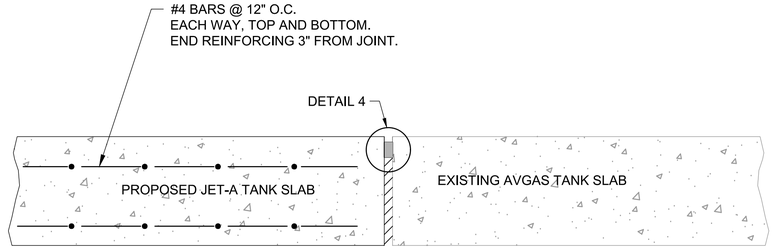
TYPICAL PLAN-REINFORCING EACH FACE

SCALE: NONE

NOTES:

1. UNLESS OTHERWISE NOTED ON THE DRAWINGS, DIMENSION "B" SHALL BE THE MINIMUM CLASS B LAP SPLICE LENGTH AS REQUIRED. IF BAR SIZES DIFFER, AS REQUIRED FOR THE SMALLER OF THE TWO BARS BEING SPLICED.

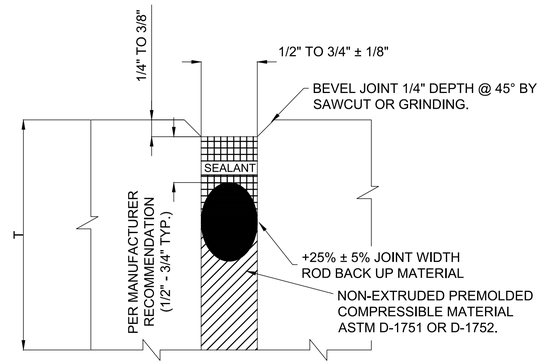
2. ALL GRADE BEAMS AND FOUNDATIONS SHALL ALSO HAVE CORNER BARS.



3 C-502

TYPE A-1 - ISOLATION JOINT

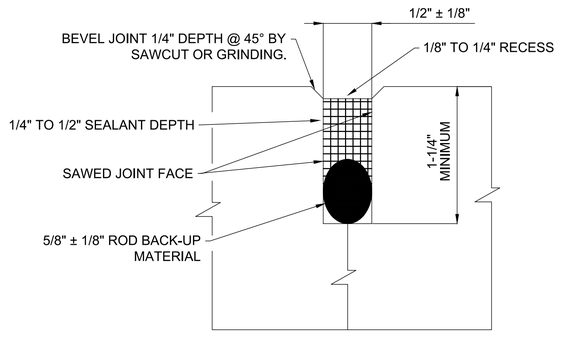
SCALE: NONE



4 C-502

ISOLATION JOINTS

SCALE: NONE



5 C-502

CONSTRUCTION JOINTS

SCALE: NONE

CERTIFICATE OF AUTHORIZATION
GARVER LLC
No. 766
ARKANSAS ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14751
JORDAN C. CULVER

DIGITALLY SIGNED: 10/20/2020

REV.	DATE	DESCRIPTION	BY

DELTA REGIONAL AIRPORT AUTHORITY
COLT, AR

JET-A FUEL SYSTEM INSTALLATION

STRUCTURAL DETAILS II

JOB NO.: 19A10120
DATE: OCT. 2020
DESIGNED BY: JLV
DRAWN BY: JLV

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
C-502

SHEET NUMBER **7**

File: L:\2019\19A10120 - DRP Jet-A Fuel System\Drawings\DRP-C500-DT.dwg Last Saved: 10/20/2020 8:18 AM Last saved by: JMElliott
Last plotted by: Halbrook, Chris J. Plot Style: AECmono.ctb Plot Scale: 1:2.5849 Plot Date: 10/20/2020 11:17 AM Plotter used: None

SYMBOL	ITEM DESCRIPTION
4W-4"	ELECTRICAL DUCT, NUMBER, AND SIZE OF CONDUITS INDICATED
OR ⏚ OR ⊙	3/4" x 10' COPPER CLAD GROUND ROD
	TRANSFORMER, RATINGS AS SHOWN
 20A/3P	CIRCUIT BREAKER, TRIP RATING SHOWN, 3-POLE UNLESS OTHERWISE NOTED
SPD	SURGE PROTECTIVE DEVICE WITH INDICATING LIGHTS

AFG	ABOVE FINISHED GRADE
AOA	AIRCRAFT OPERATIONS AREA
PE	POLYETHYLENE CONDUIT
DEB	DIRECT EARTH BURIED
WP	WEATHERPROOF
UON	UNLESS OTHERWISE NOTED

CAUTION NOTES:

1. UNDERGROUND UTILITIES EXIST WITHIN AND ADJACENT TO THE LIMITS OF CONSTRUCTION. AN ATTEMPT HAS BEEN MADE TO LOCATE THESE UTILITIES ON THE PLANS, HOWEVER, ALL EXISTING UTILITIES MAY NOT BE SHOWN AND THE ACTUAL LOCATIONS OF THE UTILITIES MAY VARY FROM THE LOCATIONS SHOWN. PRIOR TO BEGINNING ANY TYPE OF EXCAVATION, THE CONTRACTOR SHALL CONTACT THE UTILITIES INVOLVED AND MAKE ARRANGEMENTS FOR THE LOCATION OF THE UTILITIES ON THE GROUND. THE CONTRACTOR SHALL MAINTAIN THE UTILITY LOCATION MARKINGS UNTIL THEY ARE NO LONGER NECESSARY.
2. ARKANSAS STATE LAW, THE UNDERGROUND FACILITIES DAMAGE PREVENTION ACT, REQUIRES TWO WORKING DAYS ADVANCE NOTIFICATION THROUGH THE ARKANSAS ONE-CALL SYSTEM CENTER BEFORE EXCAVATING USING MECHANIZED EQUIPMENT OR EXPLOSIVES (EXCEPT IN THE CASE OF AN EMERGENCY). THE ONE-CALL SYSTEM PHONE NUMBER IS 1-800-482-8998. THE CONTRACTOR IS ADVISED THAT THERE IS A SEVERE PENALTY FOR NOT MAKING THIS CALL. NOT ALL UTILITY COMPANIES ARE MEMBERS OF THE ARKANSAS ONE-CALL SYSTEM; THEREFORE, THE CONTRACTOR IS ADVISED TO CONTACT ALL NON-MEMBER UTILITIES AS WELL AS THE ONE-CALL SYSTEM.

ELECTRICAL SAFETY NOTES:

1. SERIES CIRCUITS CAN BE DANGEROUS AND / OR FATAL.
2. LOCKOUT / TAGOUT PROCEDURES SHALL BE FOLLOWED.

DEMOLITION NOTES:

1. RESTORE THE DEMOLITION WORK AREAS TO MATCH EXISTING CONDITIONS.
2. LOCATE, IDENTIFY, AND PROTECT EXISTING SERVICES PASSING THROUGH DEMOLITION AREAS AND SERVING OTHER AREAS OUTSIDE THE DEMOLITION LIMITS. MAINTAIN SERVICES TO AREAS OUTSIDE DEMOLITION LIMITS. WHEN SERVICES MUST BE INTERRUPTED, INSTALL TEMPORARY SERVICES FOR AFFECTED AREAS.
3. MAINTAIN AND PROTECT EXISTING SERVICES WHICH TRANSIT THE AREAS AFFECTED BY SELECTIVE DEMOLITION.
4. MAINTAIN CIRCUIT CONTINUITY TO ALL EXISTING SYSTEM EQUIPMENT, DEVICES, ETC., TO REMAIN IN USE WHETHER NOTED ON THE PLANS OR NOT. FIELD VERIFY EXISTING ITEMS TO REMAIN IN USE. WIRING FOR EXISTING DEVICES WHICH MUST BE RE-ROUTED OR WHICH ARE PARTIALLY ABANDONED, SHALL BE RECONNECTED TO SERVICE THE REMAINING DEVICES ON THE CIRCUIT.
5. THE INTENTION OF THE ELECTRICAL DEMOLITION IS TO DISCONNECT AND REMOVE ALL ELECTRICAL WORK MADE VOID BY THE SCOPE OF THE CONSTRUCTION AND ALTERATION. FIELD VERIFY EXACT MATERIAL QUANTITIES REQUIRED TO BE REMOVED.
6. ALL REMOVED MATERIALS, OTHER THAN REMOVED MATERIALS TO BE RELOCATED, OR TURNED OVER TO THE OWNER, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT SITE.
7. COORDINATE ALL DEMOLITION WORK WITH ALL OTHER TRADES.
8. ALL EXISTING ELECTRICAL WORK AND ASSOCIATED RACEWAY AND WIRING WHICH HAS BEEN MADE OBSOLETE BY THE WORK AND / OR IS SHOWN DASHED ON THE ELECTRICAL DEMOLITION DRAWINGS, SHALL BE DISCONNECTED AND REMOVED, UNLESS OTHERWISE NOTED. AN ATTEMPT HAS BEEN MADE TO INDICATE ALL OF THIS WORK, BUT TOTAL ACCURACY IS NOT GUARANTEED.
9. FOR EXISTING ELECTRICAL EQUIPMENT TO BE REMOVED, DEMOLISH ALL EQUIPMENT, DEVICES, CIRCUITS, CONDUITS, BOXES, AND OTHER APPURTENANCES AS REQUIRED FOR A COMPLETE REMOVAL.
10. CUT OFF BOLT PROTRUSIONS, REMOVE ANCHORS, ETC. AT CEILING, FLOOR, OR WALL SURFACES AS REQUIRED. NO SUPPORT ITEMS SHALL BE LEFT IN PLACE.
11. REMOVE, CAP, AND / OR RELOCATE EQUIPMENT, OUTLETS, CONDUIT, WIRE, ETC., WHETHER INDICATED ON THE DRAWINGS OR NOT, AND AS MAY BECOME NECESSARY BECAUSE OF EXISTING FIELD CONDITIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VISIBLY EXAMINE ALL EXISTING AREAS DESIGNATED FOR REMOVAL OR MODIFICATION TO DETERMINE THE CONDUIT AND THE WIRING THAT WILL REQUIRE CAPPING AND / OR REMOVAL. THE CONTRACTOR SHALL BE HELD TO HAVING VISITED THE SITE AND TAKEN ALL EXISTING CONDITIONS INTO CONSIDERATION.
12. IN THE DEMOLITION WORK, REMOVE ALL CABLING ASSOCIATED WITH SYSTEMS BEING REMOVED UNDER THIS PROJECT BACK TO SOURCE. NO CABLE SHALL BE LEFT ABANDONED IN PLACE. REMOVE ALL UNUSED AND EMPTY CONDUIT THAT IS EXPOSED OR WITHIN ACCESSIBLE CEILINGS WHICH IS AFFECTED BY AND IS IN THE AREA OF THE WORK OF THIS CONTRACT.
13. WHERE ELECTRICAL EQUIPMENT, CONDUIT, BOXES, AND SUPPORTING HARDWARE ARE REMOVED, PATCH AND FINISH THE SURFACE (WALL AND CEILING) AS REQUIRED TO MATCH THE EXISTING, UNLESS OTHERWISE NOTED.
14. WHERE BURIED CONDUITS EXTENDING OUT OF A CONCRETE SLAB BECOME ABANDONED, CUT AND GRIND THE CONDUITS OFF FLUSH WITH TOP OF SLAB AND PLUG WITH NON-SHRINK WATERPROOF GROUT FILL.

CONSTRUCTION NOTES:

1. THE LOCATION OF EXISTING CABLES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD LOCATING AND IDENTIFYING THE EXISTING CIRCUITS TO DETERMINE THEIR EXACT ROUTING. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING THE ELECTRICAL SYSTEMS IN A WORKING CONDITION UNTIL THE NEW CIRCUITS HAVE BEEN INSTALLED AND TESTED. THE CONTRACTOR SHALL PROACTIVELY AND EXPEDITIOUSLY ACCOMPLISH THIS CABLE IDENTIFICATION WORK PRIOR TO PERFORMING ANY MODIFICATIONS TO THE ELECTRICAL CIRCUITS. COORDINATE IDENTIFICATION WORK WITH THE OWNER AND ENGINEER AND MAKE ALL CORRECTIONS, ADDITIONS, ETC. ON THE AS-BUILT DRAWINGS.
2. THE CONTRACTOR SHALL BE EXTREMELY CAREFUL WHILE EXCAVATING IN THE AREA OF ELECTRICAL CIRCUITS. ANY CABLE OR CONDUIT / DUCT WHICH IS NICKED OR DAMAGED DURING EXCAVATION SHALL BE PROPERLY AND EXPEDITIOUSLY SPLICED OR THE LENGTH OF CABLE AND CONDUIT / DUCT REPLACED. A SPLICE OR CONDUIT / DUCT MARKER SHALL BE INSTALLED AT ALL SPLICE OR OTHER REPAIR LOCATIONS MORE THAN 2' AWAY FROM A LIGHT, SIGN, HANDHOLE, MANHOLE, OR JUNCTION STRUCTURE. ALL REPAIR AND / OR REPLACEMENT WORK AND MATERIALS SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER AND TO THE SATISFACTION OF THE OWNER AND ENGINEER.
3. ALL ELECTRICAL CABLES SHALL BE CLEARLY IDENTIFIED, LABELED, AND TAGGED AT ALL POINTS WHERE THEY ARE AVAILABLE FOR CONNECTIONS OR INSPECTION, INCLUDING, BUT NOT LIMITED TO MANHOLES, HANDHOLES, PULL BOXES, AND JUNCTION BOXES.
4. LOCKOUT / TAGOUT AND CONSTANT CURRENT REGULATOR CALIBRATION PROCEDURES SHALL BE PAID FOR BY SS-300 PAY ITEMS UNLESS OTHERWISE NOTED.
5. CONDUITS AND DUCTS UNDER PAVED AREAS SHALL BE CONCRETE ENCASED.
6. CONDUITS AND DUCTS UNDER NON-PAVED AREAS SHALL BE NON-ENCASED, UNLESS OTHERWISE NOTED.
7. DURING CONSTRUCTION, PROTECT ALL EQUIPMENT, DUCTS, CONDUITS, CABLES, ETC. THAT ARE TO REMAIN IN PLACE. WHERE EXISTING ITEMS ARE CUT, BROKEN, OR DAMAGED, THE CONTRACTOR SHALL REPLACE OR REPAIR PROACTIVELY AND EXPEDITIOUSLY THE ITEMS WITH THE SAME TYPE OF ORIGINAL MATERIAL AND CONSTRUCTION OR BETTER AT NO ADDITIONAL COST TO THE OWNER AND TO THE SATISFACTION OF THE OWNER AND ENGINEER.

GARVER

CERTIFICATE OF AUTHORIZATION
GARVER LLC
No. 766
ARKANSAS ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16153
NICHOLAS A. HOLLAND

Digitally Signed 10/20/2020

REV.	DATE	DESCRIPTION	BY

DELTA REGIONAL AIRPORT AUTHORITY
COLT, AR

JET-A FUEL SYSTEM INSTALLATION

ELECTRICAL LEGEND AND GENERAL NOTES

JOB NO.: 19A10120
DATE: OCT. 2020
DESIGNED BY: NAH
DRAWN BY: CJH

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
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DRAWING NUMBER
E-001

SHEET NUMBER **8**

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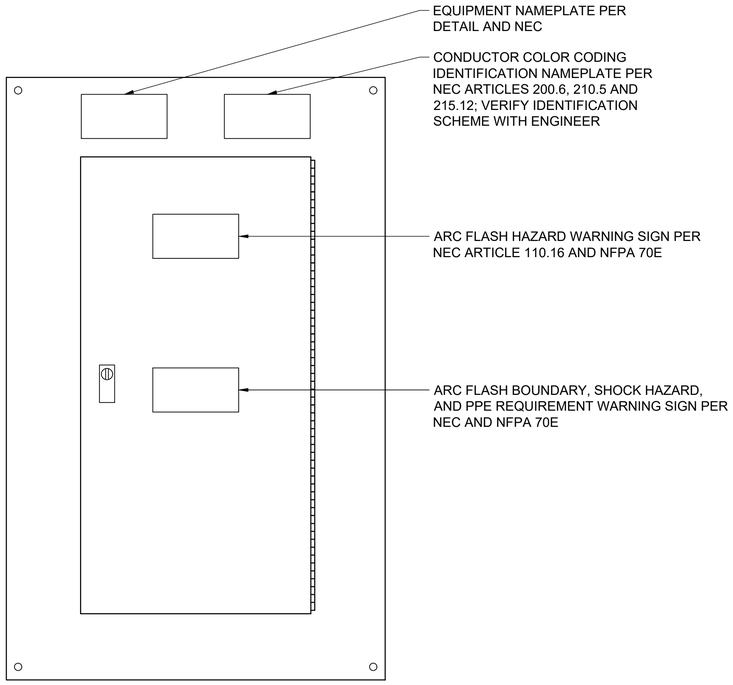
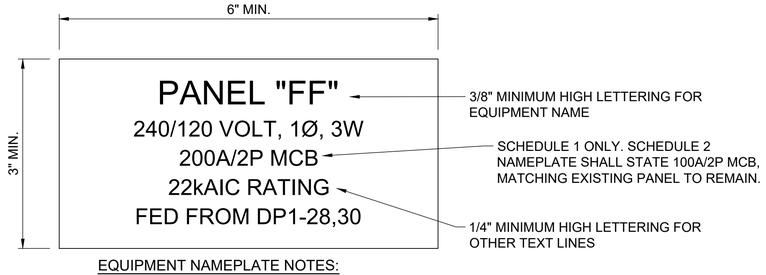
Last plotted by: Halbrook, Chris J Plot Style: AECmono.ctb Plot Scale: 1:2.5849 Plot Date: 10/20/2020 11:17 AM Plotter used: None



PANEL FRONT VIEW

GENERAL NOTES:

1. INSTALL ALL NAMEPLATES AND WARNING SIGNS IN ACCORDANCE WITH NEC AND NFPA 70E REQUIREMENTS.
2. INSTALL NAMEPLATES AND WARNING SIGNS ON ALL ELECTRICAL EQUIPMENT, INCLUDING BUT NOT LIMITED TO, SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, SWITCHES, CONTROL PANELS, AND MOTOR CONTROL CENTERS.
3. EXTERIOR EQUIPMENT SHALL HAVE WEATHER-RESISTANT, NON-FADING NAMEPLATES AND SIGNAGE.
4. REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE AND SIGNAGE REQUIREMENTS.

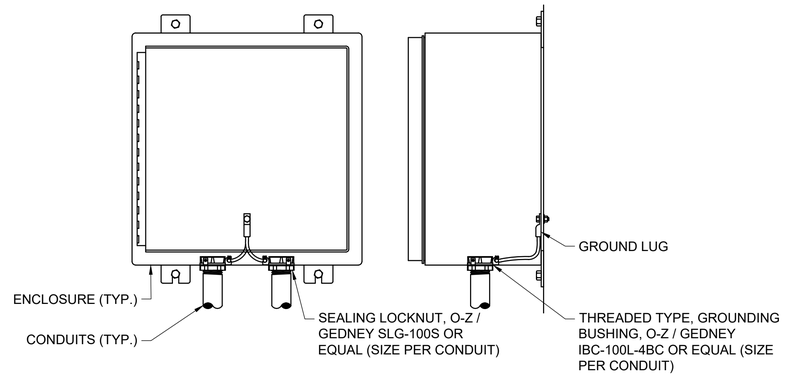


EQUIPMENT NAMEPLATE NOTES:

1. INSTALL 2-PLEX ACRYLIC, WHITE ON BLACK CORE, MULTIPLE LINES TEXT, CUSTOM ENGRAVED NAME PLATES.
2. MOUNT WITH STAINLESS STEEL SCREWS.
3. SEAL SCREW HOLES WITH SILICONE RUBBER.
4. NAMEPLATE INFORMATION SHALL INCLUDE:
   - A. IDENTIFICATION NAME
   - B. VOLTAGE SYSTEM
   - C. AMPACITY RATING AND TYPE
   - D. EQUIPMENT AIC RATING
   - E. FEEDER DESCRIPTION

1 / E-501 TYPICAL ENGRAVED NAMEPLATE AND SIGNAGE DETAIL

SCALE: NONE



NOTES:

1. ALL SERVICE, FEEDER, AND BRANCH CIRCUIT CONDUITS SHALL BE GROUNDED ON BOTH ENDS.

2 / E-501 CONDUIT GROUNDING DETAIL

SCALE: NONE

CERTIFICATE OF AUTHORIZATION — GARVER LLC No. 766 — ARKANSAS ENGINEER

STATE OF ARKANSAS — LICENSED PROFESSIONAL ENGINEER — No.16153 — NICHOLAS A. HOLLAND

Digitally Signed 10/20/2020

REV.	DATE	DESCRIPTION	BY

DELTA REGIONAL AIRPORT AUTHORITY
COLT, AR

JET-A FUEL SYSTEM INSTALLATION

ELECTRICAL DETAILS

JOB NO.: 19A10120
DATE: OCT. 2020
DESIGNED BY: NAH
DRAWN BY: CJH

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DRAWING NUMBER
E-501

SHEET NUMBER **9**

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Last plotted by: Halbrook, Chris J. Plot Style: AECmono.ctb Plot Scale: 1:2.5849 Plot Date: 10/20/2020 11:17 AM Plotter used: None

FUEL RACK NOTES:

1. ALL BOLTS, NUTS, WASHERS, ANCHORS, PLATES, AND OTHER MOUNTING ITEMS SHALL BE CORROSION RESISTANT, STAINLESS STEEL.
2. LETTERING FOR PLACARD SHALL BE WHITE LETTERING ON RED BACKGROUND.
3. PLACARD SHALL BE WEATHER RESISTANT, CONSPICUOUSLY LOCATED AT LEAST 7 FEET AFG, AND POSITIONED SO THAT IT CAN BE READ FROM A DISTANCE OF AT LEAST 25 FEET.
4. EACH CONDUIT SHALL BE INSTALLED WITH A BONDING BUSHING. CONNECT ALL BONDING BUSHING BACK TO SERVICE GROUND PER NEC 501.30A.
5. SUBMIT SHOP DRAWINGS FOR APPROVAL BY ENGINEER PRIOR TO CONSTRUCTION.

INSTALL NEW EMERGENCY SHUT OFF WARNING SIGN, INCORPORATING THE FOLLOWING WORDING WHICH MUST BE MINIMUM 7' AFG AND CAN BE VISIBLE FROM 25 FEET:

PUSH FOR EMERGENCY FUEL SHUTOFF CALL 911

INSTALL NEW EMERGENCY INSTRUCTIONS WARNING SIGN, INCORPORATING THE FOLLOWING WORDING WHICH CAN BE READ FROM 10 FEET:

EMERGENCY INSTRUCTIONS IN CASE OF FIRE OR SPILL:

1. PUSH FUEL SHUTOFF BUTTON.
2. REPORT ACCIDENT BY CALLING 911.
3. REPORT ADDRESS OF SITE: DELTA REGIONAL AIRPORT.

SCHEDULE 1 WORK ONLY:

1. REPLACE PANELBOARD WITH NEW 200A/2P MCB PANELBOARD.
2. DISCONNECT AND RECONNECT ALL EXISTING EQUIPMENT, MAKING ALL FINAL CONNECTIONS. TEST EQUIPMENT TO ENSURE CORRECT OPERATIONS AFTER PANEL REPLACEMENT.
3. INSTALL NEW NAMEPLATES AND LABELS.
4. REPLACE 30A CONTACTOR WITH NEW 60A CONTACTOR.

INSTALL NEW LAMINATED PANEL SCHEDULE WITHIN PANEL ENCLOSURE.

SCHEDULE 2 WORK ONLY:

1. RELOCATE EXISTING BREAKERS AS REQUIRED TO PROVIDE ADDITIONAL SPACES FOR NEW BREAKERS IN PANELBOARD.
2. INSTALL NEW 40A/2P BREAKER, MATCHING PANEL AND CIRCUIT BREAKER STYLE AND 22kAIC/INTERRUPT RATINGS FOR JET-A FUEL PUMP.
3. INSTALL NEW 60A/2P BREAKER, MATCHING PANEL AND CIRCUIT BREAKER STYLE AND 22kAIC/INTERRUPT RATINGS FOR SPD.
4. MAKE ALL FINAL CONNECTIONS.
5. INSTALL NEW NAMEPLATES AND LABELS.
6. REPLACE 30A CONTACTOR WITH NEW 40A CONTACTOR.

REMOVE EXISTING SPD AND INSTALL NEW SPD, MATCHING EXISTING

1 / E-502 FUEL FARM RACK MODIFICATIONS

SCALE: NONE

CERTIFICATE OF AUTHORIZATION
GARVER LLC
No. 766
ARKANSAS ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16153
NICHOLAS A. HOLLAND

Digitally Signed 10/20/2020

REV.	DATE	DESCRIPTION	BY

DELTA REGIONAL AIRPORT AUTHORITY
COLT, AR

JET-A FUEL SYSTEM INSTALLATION

FUEL FARM RACK DETAILS

JOB NO.: 19A10120
DATE: OCT. 2020
DESIGNED BY: NAH
DRAWN BY: CJH

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DRAWING NUMBER
E-502

SHEET NUMBER **10**

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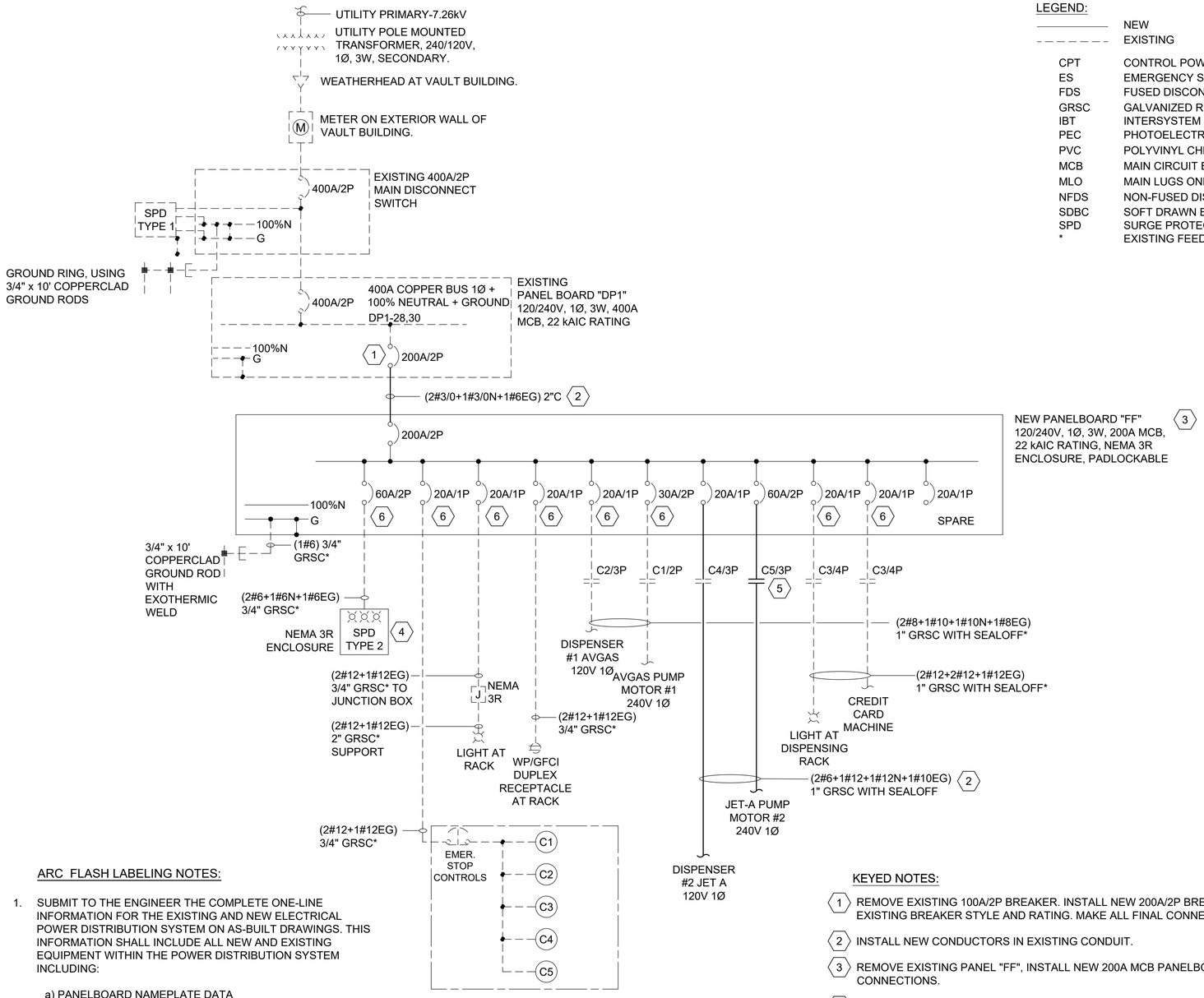
Last plotted by: Halbrook, Chris J. Plot Style: AECmono.ctb Plot Scale: 1:2.5849 Plot Date: 10/20/2020 11:17 AM Plotter used: None



LEGEND:

———		NEW
- - - - - - -		EXISTING
CPT		CONTROL POWER TRANSFORMER
ES		EMERGENCY STOP
FDS		FUSED DISCONNECT SWITCH
GRSC		GALVANIZED RIGID STEEL CONDUIT
IBT		INTERSYSTEM BONDING TERMINAL
PEC		PHOTOELECTRIC CELL
PVC		POLYVINYL CHLORIDE
MCB		MAIN CIRCUIT BREAKER
MLO		MAIN LUGS ONLY
NFDS		NON-FUSED DISCONNECT SWITCH
SDBC		SOFT DRAWN BARE COPPER
SPD		SURGE PROTECTIVE DEVICE
*		EXISTING FEEDERS TO REMAIN

ONE-LINE DIAGRAM NOTES:

1. ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2020) NATIONAL ELECTRICAL CODE, NFPA 101 (2018) LIFE SAFETY CODE, STATE ELECTRICAL CODE, AND LOCAL ELECTRICAL CODE.
2. COORDINATE ELECTRICAL POWER SUPPLY WITH EQUIPMENT SUPPLIED.
3. COORDINATE ALL ELECTRICAL WORK AND POWER OUTAGES WITH OWNER.
4. FOR ELECTRICAL WORK OF 600V OR LESS, ALL CONDUCTORS, TERMINATIONS, TERMINAL BLOCKS, LUGS, CONNECTORS, DEVICES, AND EQUIPMENT SHALL BE LISTED, MARKED, AND RATED 75 DEGREES C MINIMUM UNLESS OTHERWISE NOTED.
5. ALL WIRING SHALL BE MINIMUM TYPE THHN/THWN-2 UNLESS OTHERWISE NOTED.
6. ALL WIRING SHALL BE COPPER, UNLESS OTHERWISE NOTED.
7. EQUIPMENT SHORT CIRCUIT CURRENT RATINGS AND AVAILABLE INTERRUPTING CURRENT RATINGS SHALL BE FULLY RATED TO INTERRUPT SYMMETRICAL SHORT CIRCUIT CURRENT AVAILABLE AT TERMINALS. SERIES RATED SYSTEMS SHALL NOT BE USED.
8. PHASE AND NEUTRAL BUSES SHALL BE COPPER 100% RATED UNLESS OTHERWISE NOTED.
9. GROUND BUSES SHALL BE COPPER UNLESS OTHERWISE NOTED.
10. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL FEEDER AND BRANCH CIRCUITS.
11. INSTALL ALL CONDUCTORS AND CABLES IN CONDUIT UNLESS OTHERWISE NOTED.
12. INSTALL LUGS AND JUNCTION BOXES AS REQUIRED TO FIT WIRING.
13. MAINTAIN INTEGRITY OF ALL FIRE RATED WALLS DUE TO CONDUIT WALL PENETRATIONS.
14. INSTALL NEW TYPED PANEL SCHEDULES IN ALL ELECTRICAL PANELS INDICATING WORK PERFORMED.
15. MAKE ELECTRICAL CONNECTIONS TO EVERYTHING FURNISHED OR INSTALLED BY THIS CONTRACT, WHETHER INDICATED OR NOT ON THE ELECTRICAL DRAWINGS.
16. TRACE AND IDENTIFY ALL EXISTING CIRCUITS AND CABLES TO REMAIN PRIOR TO ANY WORK.
17. INSTALL NEW PERMANENT LABELS ON PANELBOARDS INDICATING WORK PERFORMED.
18. PROTECT ANY OTHER EXISTING CABLES WITHIN THE DUCT AND MANHOLE SYSTEM. TYPICAL FOR ALL MANHOLES, HANDHOLES, AND PULLBOXES.
19. PERFORM LOCK-OUT / TAG-OUT PROCEDURES PRIOR TO WORKING ON CIRCUITS.
20. ALL CONDUITS ENTERING OR EXITING A HAZARDOUS AREA MUST HAVE ABOVE GROUND SEALOFFS AT BOTH ENDS.
21. DESIGN BASED ON THE 10 HP, SINGLE PHASE MOTOR. IF CONTRACTOR PROPOSES EQUIPMENT THAT REQUIRES HIGHER POWER REQUIREMENTS, CONTRACTOR SHALL UPSIZE WIRE, CONDUITS, CONTACTORS, WIREWAYS, CIRCUIT BREAKERS, AND PANEL/SERVICE, IF REQUIRED TO MAKE INSTALLATION WORK TO OPERATIONAL REQUIREMENTS, TO NEC REQUIREMENTS, AND OWNER/ENGINEER SATISFACTION.

KEYED NOTES:

1. REMOVE EXISTING 100A/2P BREAKER. INSTALL NEW 200A/2P BREAKER IN PANEL "DP1", MATCHING EXISTING BREAKER STYLE AND RATING. MAKE ALL FINAL CONNECTIONS.
2. INSTALL NEW CONDUCTORS IN EXISTING CONDUIT.
3. REMOVE EXISTING PANEL "FF", INSTALL NEW 200A MCB PANELBOARD "FF". MAKE ALL FINAL CONNECTIONS.
4. REMOVE EXISTING SPD. INSTALL NEW SPD MATCHING EXISTING. MAKE ALL FINAL CONNECTIONS.
5. REMOVE EXISTING 30A/3P CONTACTOR. INSTALL NEW 60A/3P CONTACTOR. ALL PHASE CONDUCTORS TO THE FUEL STATION MUST BE DISCONNECTED WHEN THE EMERGENCY BUTTON IS PUSHED.
6. RECONNECT EXISTING LOADS TO NEW PANEL. VERIFY OPERATIONS OF ALL RECONNECTED EXISTING EQUIPMENT BEFORE AND AFTER PANEL REPLACEMENTS.

ARC FLASH LABELING NOTES:

1. SUBMIT TO THE ENGINEER THE COMPLETE ONE-LINE INFORMATION FOR THE EXISTING AND NEW ELECTRICAL POWER DISTRIBUTION SYSTEM ON AS-BUILT DRAWINGS. THIS INFORMATION SHALL INCLUDE ALL NEW AND EXISTING EQUIPMENT WITHIN THE POWER DISTRIBUTION SYSTEM INCLUDING:
   a) PANELBOARD NAMEPLATE DATA
   b) TRANSFORMERS NAMEPLATE DATA
   c) CIRCUIT BREAKER / FUSE RATINGS AND MODEL NUMBERS
   d) CONDUCTOR SIZES, LENGTHS, AND TYPES
   e) CONDUIT SIZES AND TYPES
   f) OTHER INFORMATION AS REQUESTED
2. TRACE EXISTING CIRCUITS AS REQUIRED TO COMPLETE THE AS BUILT DRAWINGS.
3. ENGINEER WILL COMPLETE ARC FLASH STUDY FOLLOWING RECEIPT OF INFORMATION FROM CONTRACTOR. ENGINEER WILL PROVIDE FLASH LABEL LEGEND TO CONTRACTOR FOR ORDERING LABELS.
4. SUBMIT LABEL TYPE, STYLE, AND APPEARANCE TO ENGINEER FOR APPROVAL PRIOR TO PURCHASING LABELS.
5. PROCURE LABELS AND INSTALL ON EQUIPMENT.
6. ALL WORK REQUIRED TO COMPLETE ARC FLASH LABELING SHALL BE CONSIDERED SUBSIDIARY TO THE FUEL SYSTEM MODIFICATIONS PAY ITEMS.

1 / E-601 FUEL SYSTEM ONE-LINE DIAGRAM
SCALE: NONE

GARVER

CERTIFICATE OF AUTHORIZATION — GARVER LLC No. 766 — ARKANSAS ENGINEER

STATE OF ARKANSAS — LICENSED PROFESSIONAL ENGINEER — No. 16153 — NICHOLAS A. HOLLAND

Digitally Signed 10/20/2020

REV.	DATE	DESCRIPTION	BY

DELTA REGIONAL AIRPORT AUTHORITY
COLT, AR

JET-A FUEL SYSTEM INSTALLATION

ONE-LINE DIAGRAM - SCHEDULE 1

JOB NO.: 19A10120
DATE: OCT. 2020
DESIGNED BY: NAH
DRAWN BY: CJH

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
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DRAWING NUMBER
E-601

SHEET NUMBER **11**

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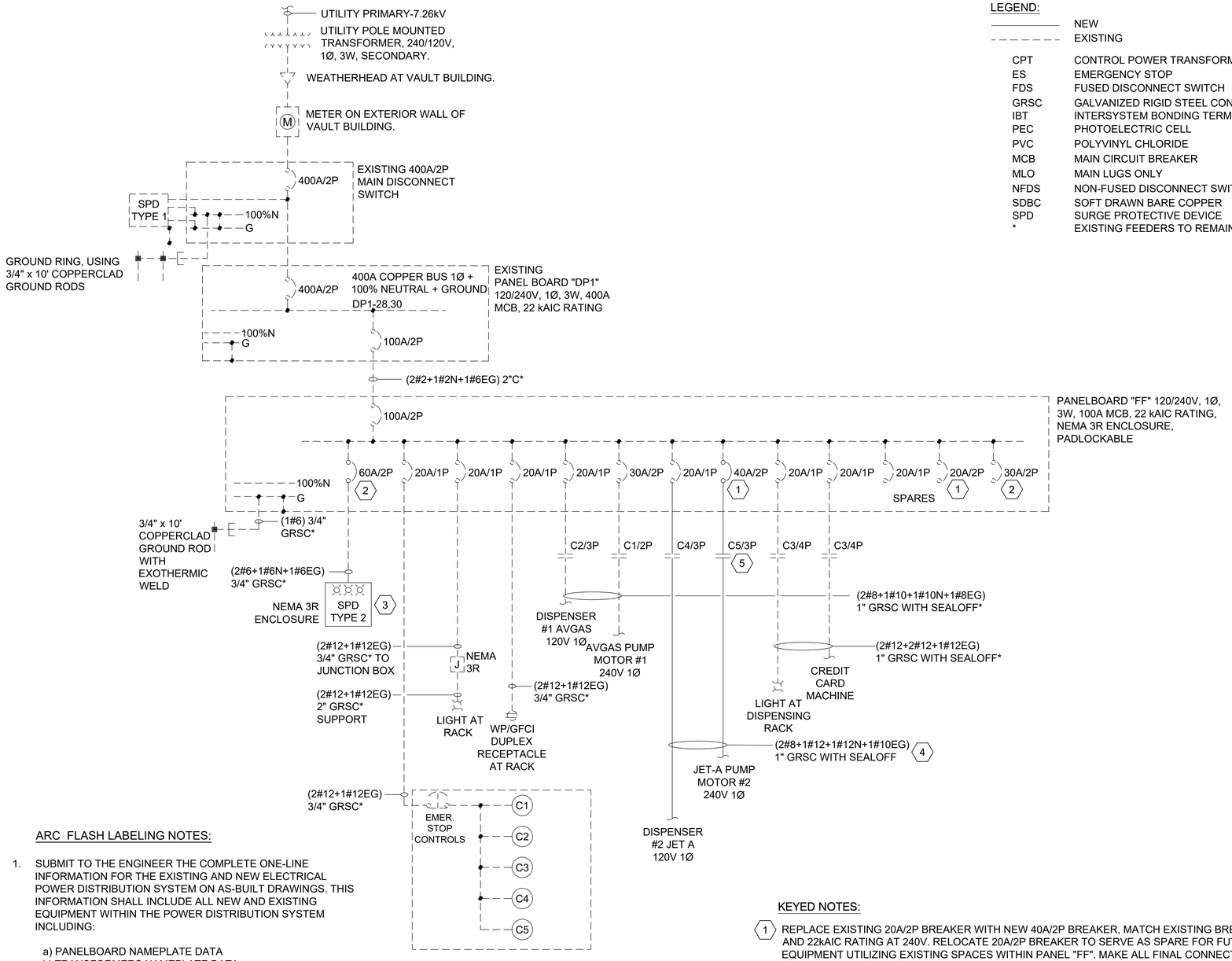
Last plotted by: Halbrook, Chris J. Plot Style: AECmono.ctb Plot Scale: 1:2.5849 Plot Date: 10/20/2020 11:17 AM Plotter used: None



LEGEND:

———	NEW
- - - - - -	EXISTING
CPT	CONTROL POWER TRANSFORMER
ES	EMERGENCY STOP
FDS	FUSED DISCONNECT SWITCH
GRSC	GALVANIZED RIGID STEEL CONDUIT
IBT	INTERSYSTEM BONDING TERMINAL
PEC	PHOTOELECTRIC CELL
PVC	POLYVINYL CHLORIDE
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
NFDS	NON-FUSED DISCONNECT SWITCH
SDBC	SOFT DRAWN BARE COPPER
SPD	SURGE PROTECTIVE DEVICE
*	EXISTING FEEDERS TO REMAIN

ONE-LINE DIAGRAM NOTES:

1. ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2020) NATIONAL ELECTRICAL CODE, NFPA 101 (2018) LIFE SAFETY CODE, STATE ELECTRICAL CODE, AND LOCAL ELECTRICAL CODE.
2. COORDINATE ELECTRICAL POWER SUPPLY WITH EQUIPMENT SUPPLIED.
3. COORDINATE ALL ELECTRICAL WORK AND POWER OUTAGES WITH OWNER.
4. FOR ELECTRICAL WORK OF 600V OR LESS, ALL CONDUCTORS, TERMINATIONS, TERMINAL BLOCKS, LUGS, CONNECTORS, DEVICES, AND EQUIPMENT SHALL BE LISTED, MARKED, AND RATED 75 DEGREES C MINIMUM UNLESS OTHERWISE NOTED.
5. ALL WIRING SHALL BE MINIMUM TYPE THHN/THWN-2 UNLESS OTHERWISE NOTED.
6. ALL WIRING SHALL BE COPPER, UNLESS OTHERWISE NOTED.
7. EQUIPMENT SHORT CIRCUIT CURRENT RATINGS AND AVAILABLE INTERRUPTING CURRENT RATINGS SHALL BE FULLY RATED TO INTERRUPT SYMMETRICAL SHORT CIRCUIT CURRENT AVAILABLE AT TERMINALS. SERIES RATED SYSTEMS SHALL NOT BE USED.
8. PHASE AND NEUTRAL BUSES SHALL BE COPPER 100% RATED UNLESS OTHERWISE NOTED.
9. GROUND BUSES SHALL BE COPPER UNLESS OTHERWISE NOTED.
10. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL FEEDER AND BRANCH CIRCUITS.
11. INSTALL ALL CONDUCTORS AND CABLES IN CONDUIT UNLESS OTHERWISE NOTED.
12. INSTALL LUGS AND JUNCTION BOXES AS REQUIRED TO FIT WIRING.
13. MAINTAIN INTEGRITY OF ALL FIRE RATED WALLS DUE TO CONDUIT WALL PENETRATIONS.
14. INSTALL NEW TYPED PANEL SCHEDULES IN ALL ELECTRICAL PANELS INDICATING WORK PERFORMED.
15. MAKE ELECTRICAL CONNECTIONS TO EVERYTHING FURNISHED OR INSTALLED BY THIS CONTRACT, WHETHER INDICATED OR NOT ON THE ELECTRICAL DRAWINGS.
16. TRACE AND IDENTIFY ALL EXISTING CIRCUITS AND CABLES TO REMAIN PRIOR TO ANY WORK.
17. INSTALL NEW PERMANENT LABELS ON PANELBOARDS INDICATING WORK PERFORMED.
18. PROTECT ANY OTHER EXISTING CABLES WITHIN THE DUCT AND MANHOLE SYSTEM. TYPICAL FOR ALL MANHOLES, HANDHOLES, AND PULLBOXES.
19. PERFORM LOCK-OUT / TAG-OUT PROCEDURES PRIOR TO WORKING ON CIRCUITS.
20. ALL CONDUITS ENTERING OR EXITING A HAZARDOUS AREA MUST HAVE ABOVE GROUND SEALOFFS AT BOTH ENDS.
21. DESIGN BASED ON THE 5 HP, SINGLE PHASE MOTOR. IF CONTRACTOR PROPOSES EQUIPMENT THAT REQUIRES HIGHER POWER REQUIREMENTS, CONTRACTOR SHALL UPSIZE WIRE, CONDUITS, CONTACTORS, WIREWAYS, CIRCUIT BREAKERS, AND PANEL/SERVICE, IF REQUIRED TO MAKE INSTALLATION WORK TO OPERATIONAL REQUIREMENTS, TO NEC REQUIREMENTS, AND OWNER/ENGINEER SATISFACTION.

ARC FLASH LABELING NOTES:

1. SUBMIT TO THE ENGINEER THE COMPLETE ONE-LINE INFORMATION FOR THE EXISTING AND NEW ELECTRICAL POWER DISTRIBUTION SYSTEM ON AS-BUILT DRAWINGS. THIS INFORMATION SHALL INCLUDE ALL NEW AND EXISTING EQUIPMENT WITHIN THE POWER DISTRIBUTION SYSTEM INCLUDING:
   a) PANELBOARD NAMEPLATE DATA
   b) TRANSFORMERS NAMEPLATE DATA
   c) CIRCUIT BREAKER / FUSE RATINGS AND MODEL NUMBERS
   d) CONDUCTOR SIZES, LENGTHS, AND TYPES
   e) CONDUIT SIZES AND TYPES
   f) OTHER INFORMATION AS REQUESTED
2. TRACE EXISTING CIRCUITS AS REQUIRED TO COMPLETE THE AS BUILT DRAWINGS.
3. ENGINEER WILL COMPLETE ARC FLASH STUDY FOLLOWING RECEIPT OF INFORMATION FROM CONTRACTOR. ENGINEER WILL PROVIDE FLASH LABEL LEGEND TO CONTRACTOR FOR ORDERING LABELS.
4. SUBMIT LABEL TYPE, STYLE, AND APPEARANCE TO ENGINEER FOR APPROVAL PRIOR TO PURCHASING LABELS.
5. PROCURE LABELS AND INSTALL ON EQUIPMENT.
6. ALL WORK REQUIRED TO COMPLETE ARC FLASH LABELING SHALL BE CONSIDERED SUBSIDIARY TO THE FUEL FARM MODIFICATIONS PAY ITEMS.

KEYED NOTES:

1. REPLACE EXISTING 20A/2P BREAKER WITH NEW 40A/2P BREAKER, MATCH EXISTING BREAKER STYLE AND 22kAIC RATING AT 240V. RELOCATE 20A/2P BREAKER TO SERVE AS SPARE FOR FUTURE EQUIPMENT UTILIZING EXISTING SPACES WITHIN PANEL "FF". MAKE ALL FINAL CONNECTIONS.
2. REPLACE EXISTING 30A/2P BREAKER WITH NEW 60A/2P BREAKER, MATCH EXISTING BREAKER STYLE AND 22kAIC RATING AT 240V. RELOCATE 30A/2P BREAKER TO SERVE AS SPARE FOR FUTURE EQUIPMENT UTILIZING EXISTING SPACES WITHIN PANEL "FF". MAKE ALL FINAL CONNECTIONS.
3. REMOVE EXISTING SPD. INSTALL NEW SPD MATCHING EXISTING. MAKE ALL FINAL CONNECTIONS.
4. INSTALL NEW CONDUCTORS IN EXISTING CONDUIT.
5. REMOVE EXISTING 30A/3P CONTACTOR. INSTALL NEW 40A/3P CONTACTOR. ALL PHASE CONDUCTORS TO THE FUEL STATION MUST BE DISCONNECTED WHEN THE EMERGENCY BUTTON IS PUSHED.

1 / E-602 FUEL SYSTEM ONE-LINE DIAGRAM
SCALE: NONE

GARVER

CERTIFICATE OF AUTHORIZATION — GARVER LLC No. 766 — ARKANSAS ENGINEER

STATE OF ARKANSAS — LICENSED PROFESSIONAL ENGINEER No.16153 — NICHOLAS A. HOLLAND

Digitally Signed 10/20/2020

REV.	DATE	DESCRIPTION	BY

DELTA REGIONAL AIRPORT AUTHORITY
COLT, AR

JET-A FUEL SYSTEM INSTALLATION

ONE-LINE DIAGRAM - SCHEDULE 2

JOB NO.: 19A10120
DATE: OCT. 2020
DESIGNED BY: NAH
DRAWN BY: CJH

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
E-602

SHEET NUMBER **12**

File: L:\2019\19A10120 - DRP Jet-A Fuel System\Drawings\DRP-E600-OL.dwg Last Save: 10/20/2020 9:39 AM Last saved by: CJHalbrook
Last plotted by: Halbrook, Chris J. Plot Style: AECmono.ctb Plot Scale: 1:2.5849 Plot Date: 10/20/2020 11:17 AM Plotter used: None

PANEL NAME:	VOLTAGE	PHASE:	WIRE:	NEUTRAL RATING:	PANEL DESCRIPTION:
FF	**240/120**	**1**	**3**	**100%**	**Fuel System Distribution Panel**
MAINS:	**MOUNTING:**	**MAX. NO. OF CIRCUITS:**	**MANUFACTURER:**	**PANEL A.I.C. RATING**	**LOCATION:**
200A MCB	**Surface**	**30**	**Square D**	**22 000 A**	**Apron**

NO	DESCRIPTION	BRANCH POLES	BRKR	WIRE (AWG)	VA A	VA B	Load Type	Load Type	VA A	VA B	WIRE (AWG)	BRANCH BKR	BRANCH POLES	DESCRIPTION	NO.
1	AVGAS Pump Motor	2	30	8	3360		E	E	0		6	60	2	SPD	2
3						3360	E	E		0					4
5	AVGAS Dispenser	1	20	10	1920		E	E	200		12	20	1	Credit Card Reader	6
7	Jet-A Dispenser	1	20	10		1920	E	E		180	12	20	1	Emergency Stop Controls	8
9	Jet-A Pump Motor	2	60	10	12000		E	L	107		12	20	1	LED Light Fixture at Rack	10
11						12000	E	R		180	12	20	1	GFCI Receptacle at Rack	12
13	Space	-	-	-	-		-	L	107		12	20	1	LED Light Fixture at Dispenser	14
15	Space	-	-	-		-	-	-		-	-	20	1	Spare	16
17	Space	-	-	-	-		-	-	-		-	-	-	Space	18
19	Space	-	-	-		-	-	-		-	-	-	-	Space	20
21	Space	-	-	-	-		-	-	-		-	-	-	Space	22
23	Space	-	-	-		-	-	-		-	-	-	-	Space	24
25	Space	-	-	-	-		-	-	-		-	-	-	Space	26
27	Space	-	-	-		-	-	-		-	-	-	-	Spare	28
29	Space	-	-	-	-		-	-	-		-	-	-	Space	30

Description	Code	A	B	Total SUM	Total %
LIGHTING	L	214	0	214	1
RECEPT	R	0	180	180	1
EQUIP.	E	17480	17460	34940	99
OTHER		0	0	0	0
HVAC	H	0	0	0	0
CUSTOM	HS	0	0	0	0
ADDITIONAL		0	0	0	0
TOTAL		17694	17640	35334	
DEMAND		17694	17640	35334	100
%		50	50		

Design Load (kVA)
0.27
0.18
34.94
0.00
0.00
0.00
0.00
35.39

Spare 15%

Total Connected Load
147.2 Amps 35.33 kVA

Total Design Load *
173.5 Amps 41.63 kVA

* Total Design Load includes calculated Design Loads per NEC Demand Factors and the stated Spare Capacity.

1 / E-603

FUEL FARM PANEL SCHEDULE - SCHEDULE 1

SCALE: NONE

NEW BREAKER MATCHING EXISTING BREAKER STYLE AND RATING

MOVE EXISTING SPD HERE BREAKER

MOVE EXISTING JET-A PUMP HERE BREAKER

PANEL NAME:	VOLTAGE	PHASE:	WIRE:	NEUTRAL RATING:	PANEL DESCRIPTION:
FF	**240/120**	**1**	**3**	**100%**	**Fuel System Distribution Panel**
MAINS:	**MOUNTING:**	**MAX. NO. OF CIRCUITS:**	**MANUFACTURER:**	**PANEL A.I.C. RATING**	**LOCATION:**
100A MCB	**Surface**	**30**	**Square D**	**22 000 A**	**Apron**

NO	DESCRIPTION	BRANCH POLES	BRKR	WIRE (AWG)	VA A	VA B	Load Type	Load Type	VA A	VA B	WIRE (AWG)	BRANCH BKR	BRANCH POLES	DESCRIPTION	NO.
1	AVGAS Pump Motor	2	30	8	3360		E	E	0		6	60	2	SPD	2
3						3360	E	E		0					4
5	AVGAS Dispenser	1	20	10	1920		E	E	200		12	20	1	Credit Card Reader	6
7	Jet-A Dispenser	1	20	10		1920	E	E		180	12	20	1	Emergency Stop Controls	8
9	Jet-A Pump Motor	2	40	8	3360		E	L	107		12	20	1	LED Light Fixture at Rack	10
11						3360	E	R		180	12	20	1	GFCI Receptacle at Rack	12
13	Spare	2	30	-	-		-	L	107		12	20	1	LED Light Fixture at Dispenser	14
15						-	-	-		-	-	20	1	Spare	16
17	Spare	2	20	-	-		-	-	-		-	-	-	Space	18
19						-	-	-		-	-	-	-	Space	20
21	Space	-	-	-	-		-	-	-		-	-	-	Space	22
23	Space	-	-	-		-	-	-		-	-	-	-	Space	24
25	Space	-	-	-	-		-	-	-		-	-	-	Space	26
27	Space	-	-	-		-	-	-		-	-	-	-	Spare	28
29	Space	-	-	-	-		-	-	-		-	-	-	Space	30

Description	Code	A	B	Total SUM	Total %
LIGHTING	L	214	0	214	1
RECEPT	R	0	180	180	1
EQUIP.	E	8840	8820	17660	98
OTHER		0	0	0	0
HVAC	H	0	0	0	0
CUSTOM	HS	0	0	0	0
ADDITIONAL		0	0	0	0
TOTAL		9054	9000	18054	
DEMAND		9054	9000	18054	100
%		50	50		

Design Load (kVA)
0.27
0.18
17.66
0.00
0.00
0.00
0.00
18.11

Spare 15%

Total Connected Load
75.2 Amps 18.05 kVA

Total Design Load *
88.8 Amps 21.30 kVA

* Total Design Load includes calculated Design Loads per NEC Demand Factors and the stated Spare Capacity.

2 / E-603

FUEL FARM PANEL SCHEDULE - SCHEDULE 2

SCALE: NONE

NEW BREAKER MATCHING EXISTING BREAKER STYLE AND RATING

CERTIFICATE OF AUTHORIZATION — GARVER LLC No. 766 — ARKANSAS ENGINEER

STATE OF ARKANSAS — LICENSED PROFESSIONAL ENGINEER — No. 16153 — NICHOLAS A. HOLLAND

Digitally Signed 10/20/2020

REV.	DATE	DESCRIPTION	BY

DELTA REGIONAL AIRPORT AUTHORITY
COLT, AR

JET-A FUEL SYSTEM INSTALLATION

PANEL SCHEDULES

JOB NO.: 19A10120
DATE: OCT. 2020
DESIGNED BY: NAH
DRAWN BY: CJH

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
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DRAWING NUMBER
E-603

SHEET NUMBER **13**

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Last plotted by: Halbrook, Chris J. Plot Style: AECmono.ctb Plot Scale: 1:2.5849 Plot Date: 10/20/2020 11:17 AM Plotter used: None