RETURN WITH BID

LETTING DATE July 31, 2009

ITEM NUMBER **6A**

Proposal Submitted By

Name

Address

City/State

9 Digit Zip Code - Telephone Number

FEIN Number FAX Number

E-Mail Address

BIDDERS NEED NOT RETURN THE ENTIRE PROPOSAL
(See instructions inside front cover)

NOTICE TO PROSPECTIVE BIDDERS

This proposal can be used for bidding purposes by only those companies that request and receive written AUTHORIZATION TO BID from IDOT's Central Bureau of Construction.
(SEE INSTRUCTIONS ON THE INSIDE OF COVER)

PROPOSAL COVER SHEET

Illinois Department of Transportation
DIVISION OF AERONAUTICS

AIRPORT **St. Louis Downtown**

MUNICIPAL DESIGNATION Cahokia

COUNTY DESIGNATION St. Clair

ILLINOIS PROJECT NO. CPS-3665

FEDERAL PROJECT NO. 3-17-0039-B18

For engineering information, contact Charles Hagloch of Hanson Professional Services, Inc. at (217) 747-9376.

FAA rules prohibit the use of escalation clauses for materials. Therefore, the Division of Aeronautics cannot offer a bituminous material cost adjustment provision for projects utilizing federal funds.

PLEASE MARK THE APPROPRIATE BOX BELOW:

☐ A Bid Bond is included.

☐ A Cashier's Check or a Certified Check is included.

INSTRUCTIONS

ABOUT IDOT PROPOSALS: All proposals issued by IDOT are potential bidding proposals. Each proposal contains all Certifications and Affidavits, a Proposal Signature Sheet and a Proposal Bid Bond required for Prime Contractors to submit a bid after written **Authorization to Bid** has been issued by IDOT's Central Bureau of Construction.

HOW MANY PROPOSALS SHOULD PROSPECTIVE BIDDERS REQUEST?: Prospective bidders should, prior to submitting their initial request for plans and proposals, determine their needs and request the total number of plans and proposals needed for each item requested. There will be a nonrefundable charge of $15 for each set of plans and specifications issued.

WHO CAN BID?: Bids will be accepted from only those companies that request and receive written **Authorization to Bid** from IDOT's Central Bureau of Construction. To request authorization, a potential bidder must complete and submit Part B of the Request for Authorization to Bid/or Not For Bid Status form (BDE 124 INT) and submit an original Affidavit of Availability (BC 57).

WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID?: When a prospective prime bidder submits a "Request for Proposal Forms and Plans" he/she must indicate at that time which items are being requested For Bidding purposes. Only those items requested For Bidding will be analyzed. After the request has been analyzed, the bidder will be issued a **Proposal Denial and/or Authorization Form**, approved by the Central Bureau of Construction, that indicates which items have been approved For Bidding. If **Authorization to Bid** cannot be approved, the **Proposal Denial and/or Authorization Form** will indicate the reason for denial. If a contractor has requested to bid but has not received a **Proposal Denial and/or Authorization Form**, they should contact the Central Bureau of Construction in advance of the letting date.

WHAT MUST BE INCLUDED WHEN BIDS ARE SUBMITTED?: Bidders need not return the entire proposal when bids are submitted. That portion of the proposal that must be returned includes the following:

1. All documents from the Proposal Cover Sheet through the Proposal Bid Bond

2. Other special documentation and/or information that may be required by the contract special provisions

All proposal documents, including Proposal Guaranty Checks or Proposal Bid Bonds, should be stapled together to prevent loss when bids are processed by IDOT personnel.

ABOUT SUBMITTING BIDS: It is recommended that bidders deliver bids in person to insure they arrive at the proper location prior to the time specified for the receipt of bids. Any bid received at the place of letting after the time specified will not be accepted.

WHO SHOULD BE CALLED IF ASSISTANCE IS NEEDED?

Questions Regarding	**Call**
Prequalification and/or Authorization to Bid	(217)782-3413
Preparation and submittal of bids	(217/782-7806
Mailing of plans and proposals	(217/782-7806
Electronic plans and proposals	(217)524-1624

ADDENDUMS AND REVISIONS TO THE PROPOSAL FORM

Planholders should verify that they have received and incorporated the addendum and/or revision prior to submitting their bid. Failure by the bidder to include an addendum or revision could result in a bid being rejected as irregular.

Illinois Department of Transportation

PROPOSAL

TO THE DEPARTMENT OF TRANSPORTATION

1. Proposal of _____
   _____

   for the improvement officially known as:

   (a) St. Louis Downtown Airport

   (b) The proposed improvement shown in detail on the plans issued by the Department schedule and detail sheets included herein, includes, in general, the following described work:

   Construct Runway 12L/30R extension and Taxiway B7.

2. The plans for the proposed work are those issued by the Department of Transportation to cover the work described above.

The specifications are those prepared by the Department of Transportation, Division of Aeronautics and designated as "Standard Specifications for Construction of Airports," the "Supplemental Specifications and Recurring Special Provisions," the "Interim Revisions to Supplemental Specifications and Recurring Special Provisions", latest editions located on the IDOT website at http://www.dot.il.gov/aero/airspecs.html, and the "Special Provisions" thereto, adopted and in effect on the date of invitation for bids.

3. **COMPLETION TIME/LIQUIDATED DAMAGES**. It being understood and agreed that the completion within the time limit is an essential part of the contract, the bidder agrees to complete the work within 87 (does not include winter shutdown) calendar days, unless additional time is granted by the Engineer in accordance with the provisions of the specifications. In case of failure to complete the work on or before the time named herein, or within such extra time as may have been allowed by extensions, the bidder agrees that the Department of Transportation shall withhold from such sum as may be due him/her under the terms of this contract, the costs, as set forth below, which costs shall be considered and treated not as a penalty but as damages due to the State from the bidder by reason of the failure of the bidder to complete the work within the time specified in the contract. The following Schedule of Deductions supersedes the table given in Section 60-09 of the Division's Standard Specifications for Construction of Airports.

Schedule of Deductions for Each
Day of Overrun in Contract Time

Original Contract Amount		Daily Charge
From More Than	To and Including	Calendar Day
$ 0	$ 25,000	$ 300
25,000	100,000	375
100,000	500,000	550
500,000	1,000,000	725
1,000,000	2,000,000	900
2,000,000	3,000,000	1,100
3,000,000	5,000,000	1,300
5,000,000	7,500,000	1,450
7,500,000	10,000,000	1,650

A daily charge shall be made for every day shown on the calendar beyond the specified contract time in calendar days.

4. **ASSURANCE OF EXAMINATION AND INSPECTION/WAIVER.** The undersigned further declares that he/she has carefully examined the proposal, plans, specifications, supplemental and applicable recurring special provisions, form of contract and contract bonds, and special provisions, and that he/she has inspected in detail the site of the proposed work, and that he/she has familiarized themselves with all of the local conditions affecting the contract and the detailed requirements of construction, and understands that in making this proposal he/she waives all right to plead any misunderstanding regarding the same.

5. **EXECUTION OF CONTRACT AND CONTRACT BONDS.** The undersigned further agrees to execute a contract for this work and present the same to the department within fifteen (15) days after the contract has been mailed to him/her. The undersigned further agrees that he/she and his/her surety will execute and present within fifteen (15) days after the contract has been mailed to him/her contract bonds satisfactory to and in the form prescribed by the Department of Transportation, in the penal sum of the full amount of the contract, guaranteeing the faithful performance of the work in accordance with the terms of the contract and guaranteeing payment in full all bills and accounts for materials and labor used in the construction of the work.

6. PROPOSAL GUARANTY. Accompanying this proposal is either a bid bond on the department form, executed by a corporate surety company satisfactory to the department, or a proposal guaranty check consisting of a bank cashier's check or a properly certified check for not less than 5 per cent of the amount bid or for the amount specified in the following schedule:

Amount of Bid			Proposal Guaranty	Amount of Bid			Proposal Guaranty
Up to		$5,000	$150	$2,000,000	to	$3,000,000	$100,000
$5,000	to	$10,000	$300	$3,000,000	to	$5,000,000	$150,000
$10,000	to	$50,000	$1,000	$5,000,000	to	$7,500,000	$250,000
$50,000	to	$100,000	$3,000	$7,500,000	to	$10,000,000	$400,000
$100,000	to	$150,000	$5,000	$10,000,000	to	$15,000,000	$500,000
$150,000	to	$250,000	$7,500	$15,000,000	to	$20,000,000	$600,000
$250,000	to	$500,000	$12,500	$20,000,000	to	$25,000,000	$700,000
$500,000	to	$1,000,000	$25,000	$25,000,000	to	$30,000,000	$800,000
$1,000,000	to	$1,500,000	$50,000	$30,000,000	to	$35,000,000	$900,000
$1,500,000	to	$2,000,000	$75,000	over		$35,000,000	$1,000,000

Bank cashier's checks or properly certified checks accompanying proposals shall be made payable to the Treasurer, State of Illinois, when the state is awarding authority; the county treasurer, when a county is the awarding authority; or the city, village, or town treasurer, when a city, village, or town is the awarding authority.

If a combination bid is submitted, the proposal guaranties which accompany the individual proposals making up the combination will be considered as also covering the combination bid.

The amount of the proposal guaranty check is _____ $( ). If this proposal is accepted and the undersigned shall fail to execute contract bonds as required herein, it is hereby agreed that the amount of the proposal guaranty shall become the property of the State of Illinois, and shall be considered as payment of damages due to delay and other causes suffered by the State because of the failure to execute said contract and contract bonds; otherwise, the bid bond shall become void or the proposal guaranty check shall be returned to the undersigned.

Attach Cashier's Check or Certified Check Here

In the event that one proposal guaranty check is intended to cover two or more proposals, the amount must be equal to the sum of the proposal guaranties which would be required for each individual proposal. If the guaranty check is placed in another proposal, state below where it may be found.

The proposal guaranty check will be found in the proposal for: Item _____

Airport _____

Mark the proposal cover sheet as to the type of proposal guaranty submitted.

7. COMBINATION BIDS. The undersigned further agrees that if awarded the contract for the sections contained in the following combination, he/she will perform the work in accordance with the requirements of each individual proposal comprising the combination bid specified in the schedule below, and that the combination bid shall be prorated against each section in proportion to the bid submitted for the same. If an error is found to exist in the gross sum bid for one or more of the individual sections included in a combination, the combination bid shall be corrected as provided below.

A combination bid is a total bid received on 2 or more proposals. No combination bids other than those specifically set up by the Department will be considered. Separate proposal forms will be issued for each project in the combination so bids may be submitted on the combination as well as on separate units of the combination. The Department reserves the right to make awards on combination bids or separate bids to the best advantage of the Department.

If a combination bid is submitted on 2 or more proposals, separate proposals on each individual contract shall also be submitted, and unless separate proposals are so submitted, the combination bid will not be considered. If the bidder desires to submit a combination bid, the bidder shall state, in the place provided in the proposal form, the amount of the combination bid for the entire combination.

If a combination bid is submitted on any stipulated combination, and errors are found to exist in computing the gross sum bid on any one or more of the individual proposals, corrections shall be made, by the Department and the amount of the combination bid shall be corrected so that it will be in the same proportion to the sum of the corrected gross sum bid as the combination bid submitted was to the sum of the gross sum bid submitted.

The following provisions shall govern combination bidding:

(a) A combination bid which is submitted for 2 or more proposals and awarded on that basis shall have the bid prorated against each proposal in proportion to the bid submitted for each proposal.

(b) Separate contracts shall be executed for each individual proposal included in the combination.

(c) The contract time for all contracts awarded on a combination bid shall be the sum of all calendar days contained within each contract included in the combination, unless otherwise provided in the contracts.

(d) In the event the Contractor fails to complete any or all of the contracts on the combination bid within the contract time, including any authorized extension, the liquidated damages shall be determined from the schedule of deductions shown above in paragraph 3 for each day of overrun in contract time, based on the combination bid total, and shall be computed on the combination and prorated against the 2 or more individual contracts based on the dollar value of each contract.

(e) The plans and Special Provisions for each separate contract shall be construed separately for all requirements, except as described in paragraphs (a) through (d) listed above.

RETURN WITH BID

When a combination bid is submitted, the schedule below must be completed in each proposal comprising the combination.

If alternate bids are submitted for one or more of the sections comprising the combination, a combination bid must be submitted for each alternate.

Schedule of Combination Bids

Combination No.	Sections Included in Combination	Combination Bid Dollars	Cents

8. **SCHEDULE OF PRICES.** The undersigned submits herewith his/her schedule of prices covering the work to be performed under this contract; he/she understands that he/she must show in the schedule the unit prices (with no more than two decimal places, i.e. $25.35, not $25.348) for which he/she proposes to perform each item of work, that the extensions must be made by him/her, and that if not so done his/her proposal may be rejected as irregular.

   The undersigned further agrees that the unit prices submitted herewith are for the purpose of obtaining a gross sum, and for use in computing the value of additions and deductions; that if there is a discrepancy between the gross sum bid and that resulting from the summation of the quantities multiplied by their respective unit prices, the latter shall govern.

9. **CERTIFICATE OF AUTHORITY.** The undersigned bidder, if a business organized under the laws of another State, assures the Department that it will furnish a copy of its certificate of authority to do business in the State of Illinois with the return of the executed contract and bond. Failure to furnish the certificate within the time provided for execution of an awarded contract may be cause for cancellation of the award and forfeiture of the proposal guaranty to the State.

ILLINOIS DEPARTMENT OF TRANSPORTATION
SCHEDULE OF PRICES
CONTRACT NUMBER - SD048

COUNTY NAME	CODE	DIST	AIRPORT NAME	FED PROJECT	ILL PROJECT
ST CLAIR	163	08	ST. LOUIS DOWNTOWN	3-17-0039-B18	CP-S -3665

****** BASE ******

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
AR108158	1/C #8 5 KV UG CABLE IN UD	L.F.	5,656.000			=		
AR108652	3/C #2 600 V UG CABLE IN UD	L.F.	1,990.000			=		
AR108706	1/C #6 COUNTERPOISE	L.F.	1,990.000			=		
AR108806	6 PAIR CONTROL CABLE	L.F.	1,990.000			=		
AR110502	2-WAY CONCRETE ENCASED DUCT	L.F.	120.000			=		
AR110552	EXTEND 2-WAY DUCT	L.F.	3.000			=		
AR125415	MITL-BASE MOUNTED	EACH	13.000			=		
AR125443	TAXI GUIDANCE SIGN, 3 CHARACTER	EACH	2.000			=		
AR125444	TAXI GUIDANCE SIGN, 4 CHARACTER	EACH	1.000			=		
AR125445	TAXI GUIDANCE SIGN, 5 CHARACTER	EACH	1.000			=		
AR125510	MIRL, BASE MOUNTED	EACH	16.000			=		
AR125545	MI THRESHOLD LIGHT BASE MTD	EACH	6.000			=		
AR125565	SPLICE CAN	EACH	1.000			=		
AR125901	REMOVE STAKE MOUNTED LIGHT	EACH	9.000			=		
AR125902	REMOVE BASE MOUNTED LIGHT	EACH	1.000			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
AR125967	RELOCATE REILS	PAIR	1.000	X			=		
AR150510	ENGINEER'S FIELD OFFICE	L.S.	1.000	X			=		
AR150530	TRAFFIC MAINTENANCE	L.S.	1.000	X			=		
AR150540	HAUL ROUTE	L.S.	1.000	X			=		
AR151450	CLEARING AND GRUBBING	ACRE	0.800	X			=		
AR152410	UNCLASSIFIED EXCAVATION	C.Y.	12,596.000	X			=		
AR152440	BORROW EXCAVATION	C.Y.	6,789.000	X			=		
AR152442	OFFSITE BORROW EXCAVATION	C.Y.	3,300.000	X			=		
AR156510	SILT FENCE	L.F.	2,610.000	X			=		
AR156511	DITCH CHECK	EACH	1.000	X			=		
AR156513	SEPARATION FABRIC	S.Y.	16,686.000	X			=		
AR156521	HEADWALL PROTECTION	EACH	3.000	X			=		
AR156540	RIPRAP	S.Y.	90.000	X			=		
AR208540	OVERSIZE AGGREGATE	TON	6,098.000	X			=		
AR209510	CRUSHED AGGREGATE BASE COURSE	TON	3,915.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
AR501506	6" PCC PAVEMENT	S.Y.	15,001.000			X =		
AR501530	PCC TEST BATCH	EACH	1.000			X =		
AR501900	REMOVE PCC PAVEMENT	S.Y.	104.000			X =		
AR620520	PAVEMENT MARKING-WATERBORNE	S.F.	16,161.000			X =		
AR620525	PAVEMENT MARKING-BLACK BORDER	S.F.	4,945.000			X =		
AR620900	PAVEMENT MARKING REMOVAL	S.F.	2,289.000			X =		
AR701548	48" RCP, CLASS IV	L.F.	88.000			X =		
AR705411	POROUS BACKFILL NO. 1	C.Y.	224.000			X =		
AR705524	4" PERFORATED UNDERDRAIN W/SOCK	L.F.	4,156.000			X =		
AR705630	UNDERDRAIN INSPECTION HOLE	EACH	12.000			X =		
AR752448	PRECAST REINFORCED CONC. FES 48"	EACH	2.000			X =		
AR800402	ADD 2 MODULE WITH SIGN BASE EXTEN	EACH	2.000			X =		
AR800430	LIGHTED RUNWAY CLOSURE MARKER	L.S.	1.000			X =		
AR800433	PIPE ARCH 9'- 9" X 6'- 7"	L.F.	588.000			X =		
AR800434	STORMWATER BYPASS GOOSE LAKE DITC	L.S.	1.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
AR901510	SEEDING	ACRE	3.900	X			=		
AR901511	SEEDING-FORMULA 1	ACRE	3.900	X			=		
AR908510	MULCHING	ACRE	7.800	X			=		

SUBTOTAL BASE $

***THE DEPARTMENT RESERVES THE RIGHT TO AWARD THIS CONTRACT ON THE
***BASIS OF ANY OF THE ALTERNATES OR COMBINATION THEREOF.

****** ALT 1 ******

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
AS107408	L-806 WIND CONE - 8' LIGHTED	EACH	2.000	X			=		
AS108158	1/C #8 5 KV UG CABLE IN UD	L.F.	880.000	X			=		
AS109200	INSTALL ELECTRICAL EQUIPMENT	L.S.	1.000	X			=		

SUBTOTAL ALT 1 $

CONTRACT - SD048

SUMMARY OF TOTAL ALTERNATES		DOLLARS	CTS
TOTAL BASE	$		
TOTAL ALT 1	$		

NOTE:

1. EACH PAY ITEM SHOULD HAVE A UNIT PRICE AND A TOTAL PRICE.

2. THE UNIT PRICE SHALL GOVERN IF NO TOTAL PRICE IS SHOWN OR IF THERE IS A DISCREPANCY BETWEEN THE PRODUCT OF THE UNIT PRICE MULTIPLIED BY THE QUANTITY.

3. IF A UNIT PRICE IS OMITTED, THE TOTAL PRICE WILL BE DIVIDED BY THE QUANTITY IN ORDER TO ESTABLISH A UNIT PRICE.

4. A BID MAY BE DECLARED UNACCEPTABLE IF NEITHER A UNIT PRICE NOR A TOTAL PRICE IS SHOWN.

THE PRECEDING SCHEDULE OF PRICES MUST BE

COMPLETED AND RETURNED.

RETURN WITH BID

STATE REQUIRED ETHICAL STANDARDS GOVERNING CONTRACT PROCUREMENT: ASSURANCES, CERTIFICATIONS AND DISCLOSURES

I. GENERAL

A. Article 50 of the Illinois Procurement Code establishes the duty of all State chief procurement officers, State purchasing officers, and their designees to maximize the value of the expenditure of public moneys in procuring goods, services, and contracts for the State of Illinois and to act in a manner that maintains the integrity and public trust of State government. In discharging this duty, they are charged by law to use all available information, reasonable efforts, and reasonable actions to protect, safeguard, and maintain the procurement process of the State of Illinois.

B. In order to comply with the provisions of Article 50 and to carry out the duty established therein, all bidders are to adhere to ethical standards established for the procurement process, and to make such assurances, disclosures and certifications required by law. By execution of the Proposal Signature Sheet, the bidder indicates that each of the mandated assurances has been read and understood, that each certification is made and understood, and that each disclosure requirement has been understood and completed.

C. In addition to all other remedies provided by law, failure to comply with any assurance, failure to make any disclosure or the making of a false certification shall be grounds for termination of the contract and the suspension or debarment of the bidder.

II. ASSURANCES

A. The assurances hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous assurance, and the surety providing the performance bond shall be responsible for the completion of the contract.

B. Felons

1. The Illinois Procurement Code provides:

Section 50-10. Felons. Unless otherwise provided, no person or business convicted of a felony shall do business with the State of Illinois or any state agency from the date of conviction until 5 years after the date of completion of the sentence for that felony, unless no person held responsible by a prosecutorial office for the facts upon which the conviction was based continues to have any involvement with the business.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-10.

C. Conflicts of Interest

1. The Illinois Procurement Code provides in pertinent part:

Section 50-13. Conflicts of Interest.

(a) Prohibition. It is unlawful for any person holding an elective office in this State, holding a seat in the General Assembly, or appointed to or employed in any of the offices or agencies of state government and who receives compensation for such employment in excess of 60% of the salary of the Governor of the State of Illinois, or who is an officer or employee of the Capital Development Board or the Illinois Toll Highway Authority, or who is the spouse or minor child of any such person to have or acquire any contract, or any direct pecuniary interest in any contract therein, whether for stationery, printing, paper, or any services, materials, or supplies, that will be wholly or partially satisfied by the payment of funds appropriated by the General Assembly of the State of Illinois or in any contract of the Capital Development Board or the Illinois Toll Highway authority.

(b) Interests. It is unlawful for any firm, partnership, association or corporation, in which any person listed in subsection (a) is entitled to receive (i) more than 7 1/2% of the total distributable income or (ii) an amount in excess of the salary of the Governor, to have or acquire any such contract or direct pecuniary interest therein.

(c) Combined interests. It is unlawful for any firm, partnership, association, or corporation, in which any person listed in subsection (a) together with his or her spouse or minor children is entitled to receive (i) more than 15%, in the aggregate, of the total distributable income or (ii) an amount in excess of 2 times the salary of the Governor, to have or acquire any such contract or direct pecuniary interest therein.

(d) Securities. Nothing in this Section invalidates the provisions of any bond or other security previously offered or to be offered for sale or sold by or for the State of Illinois.

(e) Prior interests. This Section does not affect the validity of any contract made between the State and an officer or employee of the State or member of the General Assembly, his or her spouse, minor child or any combination of those persons if that contract was in existence before his or her election or employment as an officer, member, or employee. The contract is voidable, however, if it cannot be completed within 365 days after the officer, member, or employee takes office or is employed.

The current salary of the Governor is $177,412.00. Sixty percent of the salary is $106,447.20.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-13, or that an effective exemption has been issued by the Board of Ethics to any individual subject to the Section 50-13 prohibitions pursuant to the provisions of Section 50-20 of the Code and Executive Order Number 3 (1998). Information concerning the exemption process is available from the Department upon request.

D. Negotiations

1. The Illinois Procurement Code provides in pertinent part:

Section 50-15. Negotiations.

(a) It is unlawful for any person employed in or on a continual contractual relationship with any of the offices or agencies of State government to participate in contract negotiations on behalf of that office or agency with any firm, partnership, association, or corporation with whom that person has a contract for future employment or is negotiating concerning possible future employment.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-15, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

E. Inducements

1. The Illinois Procurement Code provides:

Section 50-25. Inducement. Any person who offers or pays any money or other valuable thing to any person to induce him or her not to bid for a State contract or as recompense for not having bid on a State contract is guilty of a Class 4 felony. Any person who accepts any money or other valuable thing for not bidding for a State contract or who withholds a bid in consideration of the promise for the payment of money or other valuable thing is guilty of a Class 4 felony.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-25, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

F. Revolving Door Prohibition

1. The Illinois Procurement Code provides:

Section 50-30. Revolving door prohibition. Chief procurement officers, associate procurement officers, State purchasing officers, their designees whose principal duties are directly related to State procurement, and executive officers confirmed by the Senate are expressly prohibited for a period of 2 years after terminating an affected position from engaging in any procurement activity relating to the State agency most recently employing them in an affected position for a period of at least 6 months. The prohibition includes, but is not limited to: lobbying the procurement process; specifying; bidding; proposing bid, proposal, or contract documents; on their own behalf or on behalf of any firm, partnership, association, or corporation. This Section applies only to persons who terminate an affected position on or after January 15, 1999.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-30, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

G. Reporting Anticompetitive Practices

1. The Illinois Procurement Code provides:

Section 50-40. Reporting anticompetitive practices. When, for any reason, any vendor, bidder, contractor, chief procurement officer, State purchasing officer, designee, elected official, or State employee suspects collusion or other anticompetitive practice among any bidders, offers, contractors, proposers, or employees of the State, a notice of the relevant facts shall be transmitted to the Attorney General and the chief procurement officer.

2. The bidder assures the Department that it has not failed to report any relevant facts concerning the practices addressed in Section 50-40 which may involve the contract for which the bid is submitted.

H. Confidentiality

1. The Illinois Procurement Code provides:

Section 50-45. Confidentiality. Any chief procurement officer, State purchasing officer, designee, or executive officer who willfully uses or allows the use of specifications, competitive bid documents, proprietary competitive information, proposals, contracts, or selection information to compromise the fairness or integrity of the procurement, bidding, or contract process shall be subject to immediate dismissal, regardless of the Personnel code, any contract, or any collective bargaining agreement, and may in addition be subject to criminal prosecution.

2. The bidder assures the Department that it has no knowledge of any fact relevant to the practices addressed in Section 50-45 which may involve the contract for which the bid is submitted.

I. Insider Information

1. The Illinois Procurement Act provides:

Section 50-50. Insider information. It is unlawful for any current or former elected or appointed State official or State employee to knowingly use confidential information available only by virtue of that office or employment for actual or anticipated gain for themselves or another person.

2. The bidder assures the Department that it has no knowledge of any facts relevant to the practices addressed in Section 50-50 which may involve the contract for which the bid is submitted.

III. CERTIFICATIONS

A. The certifications hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous certification, and the surety providing the performance bond shall be responsible for completion of the contract.

B. Bribery

1. The Illinois Procurement Code provides:

Section 50-5. Bribery.

(a) Prohibition. No person or business shall be awarded a contract or subcontract under this Code who:

(1) has been convicted under the laws of Illinois or any other state of bribery or attempting to bribe an officer or employee of the State of Illinois or any other state in that officer's or employee's official capacity; or

(2) has made an admission of guilt of that conduct that is a matter of record but has not been prosecuted for that conduct.

(b) Businesses. No business shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of the business if the employee or agent is no longer employed by the business and:

(1) the business has been finally adjudicated not guilty; or

(2) the business demonstrates to the governmental entity with which it seeks to contract, and that entity finds that the commission of the offense was not authorized, requested, commanded, or performed by a director, officer, or high managerial agent on behalf of the business as provided in paragraph (2) of subsection (a) of Section 5-4 of the Criminal Code of 1961.

(c) Conduct on behalf of business. For purposes of this Section, when an official, agent, or employee of a business committed the bribery or attempted bribery on behalf of the business and in accordance with the direction or authorization of a responsible official of the business, the business shall be chargeable with the conduct.

(d) Certification. Every bid submitted to and contract executed by the State shall contain a certification by the contractor that the contractor is not barred from being awarded a contract or subcontract under this Section. A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

2. The bidder certifies that it is not barred from being awarded a contract under Section 50.5.

C. Educational Loan

1. Section 3 of the Educational Loan Default Act provides:

§ 3. No State agency shall contract with an individual for goods or services if that individual is in default, as defined in Section 2 of this Act, on an educational loan. Any contract used by any State agency shall include a statement certifying that the individual is not in default on an educational loan as provided in this Section.

2. The bidder, if an individual as opposed to a corporation, partnership or other form of business organization, certifies that the bidder is not in default on an educational loan as provided in Section 3 of the Act.

D. Bid-Rigging/Bid Rotating

1. Section 33E-11 of the Criminal Code of 1961 provides:

§ 33E-11. (a) Every bid submitted to and public contract executed pursuant to such bid by the State or a unit of local government shall contain a certification by the prime contractor that the prime contractor is not barred from contracting with any unit of State or local government as a result of a violation of either Section 33E-3 or 33E-4 of this Article. The State and units of local government shall provide the appropriate forms for such certification.

(b) A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

A violation of Section 33E-3 would be represented by a conviction of the crime of bid-rigging which, in addition to Class 3 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be barred for 5 years from the date of conviction from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

A violation of Section 33E-4 would be represented by a conviction of the crime of bid-rotating which, in addition to Class 2 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be permanently barred from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

2. The bidder certifies that it is not barred from contracting with the Department by reason of a violation of either Section 33E-3 or Section 33E-4.

E. International Anti-Boycott

1. Section 5 of the International Anti-Boycott Certification Act provides:

§ 5. State contracts. Every contract entered into by the State of Illinois for the manufacture, furnishing, or purchasing of supplies, material, or equipment or for the furnishing of work, labor, or services, in an amount exceeding the threshold for small purchases according to the purchasing laws of this State or $10,000.00, whichever is less, shall contain certification, as a material condition of the contract, by which the contractor agrees that neither the contractor nor any substantially-owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the U.S. Export Administration Act of 1979 or the regulations of the U.S. Department of Commerce promulgated under that Act.

2. The bidder makes the certification set forth in Section 5 of the Act.

F. Drug Free Workplace

1. The Illinois "Drug Free Workplace Act" applies to this contract and it is necessary to comply with the provisions of the "Act" if the contractor is a corporation, partnership, or other entity (including a sole proprietorship) which has 25 or more employees.

2. The bidder certifies that if awarded a contract in excess of $5,000 it will provide a drug free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance, including cannabis, is prohibited in the contractor's workplace; specifying the actions that will be taken against employees for violations of such prohibition; and notifying the employee that, as a condition of employment on such contract, the employee shall abide by the terms of the statement, and notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.

(b) Establishing a drug free awareness program to inform employees about the dangers of drug abuse in the workplace; the contractor's policy of maintaining a drug free workplace; any available drug counseling, rehabilitation, and employee assistance programs; and the penalties that may be imposed upon employees for drug violations.

(c) Providing a copy of the statement required by subparagraph (1) to each employee engaged in the performance of the contract and to post the statement in a prominent place in the workplace.

(d) Notifying the Department within ten (10) days after receiving notice from an employee or otherwise receiving actual notice of the conviction of an employee for a violation of any criminal drug statute occurring in the workplace.

(e) Imposing or requiring, within 30 days after receiving notice from an employee of a conviction or actual notice of such a conviction, an appropriate personnel action, up to and including termination, or the satisfactory participation in a drug abuse assistance or rehabilitation program approved by a federal, state or local health, law enforcement or other appropriate agency.

(f) Assisting employees in selecting a course of action in the event drug counseling, treatment, and rehabilitation is required and indicating that a trained referral team is in place.

(g) Making a good faith effort to continue to maintain a drug free workplace through implementation of the actions and efforts stated in this certification.

G. Debt Delinquency

1. The Illinois Procurement Code provides:

Section 50-11 and 50-12. Debt Delinquency.
The contractor or bidder certifies that it, or any affiliate, is not barred from being awarded a contract under 30 ILCS 500. Section 50-11 prohibits a person from entering into a contract with a State agency if it knows or should know that it, or any affiliate, is delinquent in the payment of any debt to the State as defined by the Debt Collection Board. Section 50-12 prohibits a person from entering into a contract with a State agency if it, or any affiliate, has failed to collect and remit Illinois Use Tax on all sales of tangible personal property into the State of Illinois in accordance with the provisions of the Illinois Use Tax Act. The contractor further acknowledges that the contracting State agency may declare the contract void if this certification is false or if the contractor, or any affiliate, is determined to be delinquent in the payment of any debt to the State during the term of the contract.

H. Sarbanes-Oxley Act of 2002

1. The Illinois Procurement Code provides:

Section 50-60(c).
The contractor certifies in accordance with 30 ILCS 500/50-10.5 that no officer, director, partner or other managerial agent of the contracting business has been convicted of a felony under the Sarbanes-Oxley Act of 2002 or a Class 3 or Class 2 felony under the Illinois Securities Law of 1953 for a period of five years prior to the date of the bid or contract. The contractor acknowledges that the contracting agency shall declare the contract void if this certification is false.

I. Addenda

The contractor or bidder certifies that all relevant addenda have been incorporated in to this contract. Failure to do so may cause the bid to be declared unacceptable.

J. Section 42 of the Environmental Protection Act

The contractor certifies in accordance with 30 ILCS 500/50-12 that the bidder or contractor is not barred from being awarded a contract under this Section which prohibits the bidding on or entering into contracts with the State of Illinois or a State agency by a person or business found by a court or the Pollution Control Board to have committed a willful or knowing violation of Section 42 of the Environmental Protection Act for a period of five years from the date of the order. The contractor acknowledges that the contracting agency may declare the contract void if this certification is false.

K. Apprenticeship and Training Certification (Does not apply to federal aid projects)

In accordance with the provisions of Section 30-22 (6) of the Illinois Procurement Code, the bidder certifies that it is a participant, either as an individual or as part of a group program, in the approved apprenticeship and training programs applicable to each type of work or craft that the bidder will perform with its own forces. The bidder further certifies for work that will be performed by subcontract that each of its subcontractors submitted for approval either (a) is, at the time of such bid, participating in an approved, applicable apprenticeship and training program; or (b) will, prior to commencement of performance of work pursuant to this contract, begin participation in an approved apprenticeship and training program applicable to the work of the subcontract. The Department, at any time before or after award, may require the production of a copy of each applicable Certificate of Registration issued by the United States Department of Labor evidencing such participation by the contractor and any or all of its subcontractors. Applicable apprenticeship and training programs are those that have been approved and registered with the United States Department of Labor. The bidder shall list in the space below, the official name of the program sponsor holding the Certificate of Registration for all of the types of work or crafts in which the bidder is a participant and that will be performed with the bidder's forces. Types of work or craft work that will be subcontracted shall be included and listed as subcontracted work. The list shall also indicate any type of work or craft job category that does not have an applicable apprenticeship or training program. **The bidder is responsible for making a complete report and shall make certain that each type of work or craft job category that will be utilized on the project as reported on the Construction Employee Workforce Projection (Form BC-1256) and returned with the bid is accounted for and listed.**

N/A (Federal)

The requirements of this certification and disclosure are a material part of the contract, and the contractor shall require this certification provision to be included in all approved subcontracts. In order to fulfill this requirement, it shall not be necessary that an applicable program sponsor be currently taking or that it will take applications for apprenticeship, training or employment during the performance of the work of this contract.

L. Executive Order Number 1 (2007) Regarding Lobbying on Government Procurements

The bidder hereby warrants and certifies that they have complied and will comply with the requirements set forth in this Order. The requirements of this warrant and certification are a material part of the contract, and the contractor shall require this warrant and certification provision to be included in all approved subcontracts.

M. Disclosure of Business Operations in Iran

Section 50-36 of the Illinois Procurement Code, 30ILCS 500/50-36 provides that each bid, offer, or proposal submitted for a State contract shall include a disclosure of whether or not the Company acting as the bidder, offeror, or proposing entity, or any of its corporate parents or subsidiaries, within the 24 months before submission of the bid, offer, or proposal had business operations that involved contracts with or provision of supplies or services to the Government of Iran, companies in which the Government of Iran has any direct or indirect equity share, consortiums or projects commissioned by the Government of Iran, or companies involved in consortiums or projects commissioned by the Government of Iran and either of the following conditions apply:

(1) More than 10% of the Company's revenues produced in or assets located in Iran involve oil-related activities or mineral-extraction activities; less than 75% of the Company's revenues produced in or assets located in Iran involve contracts with or provision of oil-related or mineral-extraction products or services to the Government of Iran or a project or consortium created exclusively by that government; and the Company has failed to take substantial action.

(2) The Company has, on or after August 5, 1996, made an investment of $20 million or more, or any combination of investments of at least $10 million each that in the aggregate equals or exceeds $20 million in any 12-month period, which directly or significantly contributes to the enhancement of Iran's ability to develop petroleum resources of Iran.

The terms "Business operations", "Company", "Mineral-extraction activities", "Oil-related activities", "Petroleum resources", and "Substantial action" are all defined in the Code.

Failure to make the disclosure required by the Code shall cause the bid, offer or proposal to be considered not responsive. The disclosure will be considered when evaluating the bid, offer, or proposal or awarding the contract. The name of each Company disclosed as doing business or having done business in Iran will be provided to the State Comptroller.

Check the appropriate statement:

/___/ Company has no business operations in Iran to disclose.

/___/ Company has business operations in Iran as disclosed in the attached document.

N. PA 95-0635 SUBSTANCE ABUSE PREVENTION PROGRAM (SAPP)

Effective January 1, 2008

This Public Act requires that all contractors and subcontractors have an SAPP, meeting certain requirements, in place **before** starting work.

The contractor must submit their correctly completed SAPP Certification (Form BC 261) prior to issuance of the Notice-to-Proceed.

The requirements of this Public Act are a material part of the contract, and the contractor shall require this provision to be included in all approved subcontracts. The contractor shall submit the correctly completed SAPP Certification Form BC 261 for each subcontractor with the Request for Approval of Subcontractor (Form AER 260-A) prior to issuance of the Notice-to-Proceed.

All SAPPs and Requests for Approval of Subcontractor are to be submitted to:

Department of Transportation
Division of Aeronautics
Attn: Chief Engineer
1 Langhorne Bond Drive
Capital Airport
Springfield, IL 62707-8415.

Telephone number (217) 785-8514
Telefax number (217) 785-4533

O. Registration with the State Board of Elections.

Public Act 95-0971, amending the Illinois Procurement Code, 30 ILCS 500, adding new sections 20-160 and 50-37, and Executive Order 3 (2008) establish new requirements affecting contributions that contractors, consultants, vendors and bidders, including affiliated persons and entities, may make to state officeholders, declared candidates for state offices and political organizations established to benefit such officeholders and candidates. These provisions do not apply to federal-aid contracts.

By submission of a bid, the bidder acknowledges and agrees that it has read and understands the requirements of PA 95-0971 and Executive Order 3 (2008), including but not limited to, all reporting requirements and all restrictions on soliciting and making contributions to state officeholders, declared candidates for state offices and covered political organizations that promote the candidacy of an officeholder or declared candidate for office. In addition, the bidder makes the following certifications:

(1) As to Executive Order 3 (2008), the bidder certifies that no contribution will be made that would violate the order, and that the bidder will report all contributions as required by the order.

(2) As to PA 95-0971, the bidder shall check either of the following certifications that apply:

/___/ The bidder is not required to register as a business entity with the State Board of Elections.

/___/ The bidder has registered as a business entity with the State Board of Elections, and acknowledges a continuing duty to update the registration as required the Act. **A copy of the time-stamped certificate of registration is enclosed with the bid. The Department will not award this contract without the submission of a certificate of registration.**

In accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, this certification shall be part of the contract. Compliance with PA 95-0971 and Executive Order 3 (2008) is a material part of the contract and any breach shall be cause to void the contract under Section 50-60 of the Illinois Procurement Code.

IV. DISCLOSURES

A. The disclosures hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous disclosure, and the surety providing the performance bond shall be responsible for completion of the contract.

B. Financial Interests and Conflicts of Interest

1. Section 50-35 of the Illinois Procurement Code provides that all bids of more than $10,000 shall be accompanied by disclosure of the financial interests of the bidder. This disclosed information for the successful bidder, will be maintained as public information subject to release by request pursuant to the Freedom of Information Act.

The financial interests to be disclosed shall include ownership or distributive income share that is in excess of 5%, or an amount greater than 60% of the annual salary of the Governor, of the bidding entity or its parent entity, whichever is less, unless the contractor or bidder is a publicly traded entity subject to Federal 10K reporting, in which case it may submit its 10K disclosure in place of the prescribed disclosure. The disclosure shall include the names, addresses, and dollar or proportionate share of ownership of each person making the disclosure, their instrument of ownership or beneficial relationship, and notice of any potential conflict of interest resulting from the current ownership or beneficial interest of each person making the disclosure having any of the relationships identified in Section 50-35 and on the disclosure form.

In addition, all disclosures shall indicate any other current or pending contracts, proposals, leases, or other ongoing procurement relationships the bidding entity has with any other unit of state government and shall clearly identify the unit and the contract, proposal, lease, or other relationship.

2. Disclosure Forms. Disclosure Form A is attached for use concerning the individuals meeting the above ownership or distributive share requirements. Subject individuals should be covered each by one form. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies. **The forms must be included with each bid or incorporated by reference.**

C. Disclosure Form Instructions

Form A: For bidders that have previously submitted the information requested in Form A

The Department has retained the Form A disclosures submitted by all bidders responding to these requirements for the April 24, 1998 or any subsequent letting conducted by the Department. The bidder has the option of submitting the information again or the bidder may sign the following certification statement indicating that the information previously submitted by the bidder is, as of the date of signature, current and accurate. The Certification must be signed and dated by a person who is authorized to execute contracts for the bidding company. Before signing this certification, the bidder should carefully review its prior submissions to ensure the Certification is correct. If the Bidder signs the Certification, the Bidder should proceed to Form B instructions.

CERTIFICATION STATEMENT

I have determined that the Form A disclosure information previously submitted is current and accurate, and all forms are hereby incorporated by reference in this bid. Any necessary additional forms or amendments to previously submitted forms are attached to this bid.

_____
(Bidding Company)

_____ _____
Name of Authorized Representative (type or print) Title of Authorized Representative (type or print)

_____ _____
Signature of Authorized Representative Date

Form A: For bidders who have NOT previously submitted the information requested in Form A

If the bidder is a publicly traded entity subject to Federal 10K reporting, the 10K Report may be submitted to meet the requirements of Form A. If a bidder is not subject to Federal 10K reporting, the bidder must determine if any individuals are required by law to complete a financial disclosure form. To do this, the bidder should answer each of the following questions. A "YES" answer indicates Form A must be completed. If the answer to each of the following questions is "NO", then the NOT APPLICABLE STATEMENT on the second page of Form A must be signed and dated by a person that is authorized to execute contracts for the bidding company. Note: These questions are for assistance only and are not required to be completed.

1. Does anyone in your organization have a direct or beneficial ownership share of greater than 5% of the bidding entity or parent entity? YES____ NO____

2. Does anyone in your organization have a direct or beneficial ownership share of less than 5%, but which has a value greater than $106,447.20? YES____ NO____

3. Does anyone in your organization receive more than $106,447.20 of the bidding entity's or parent entity's distributive income? (Note: Distributive income is, for these purposes, any type of distribution of profits. An annual salary is not distributive income.) YES____ NO____

4. Does anyone in your organization receive greater than 5% of the bidding entity's or parent entity's total distributive income, but which is less than $106,447.20? YES____ NO____

   (Note: Only one set of forms needs to be completed per person per bid even if a specific individual would require a yes answer to more than one question.)

A "YES" answer to any of these questions requires the completion of Form A. The bidder must determine each individual in the bidding entity or the bidding entity's parent company that would cause the questions to be answered "Yes". Each form must be signed and dated by a person that is authorized to execute contracts for your organization. **Photocopied or stamped signatures are not acceptable**. The person signing can be, but does not have to be, the person for which the form is being completed. The bidder is responsible for the accuracy of any information provided.

If the answer to each of the above questions is "NO", then the NOT APPLICABLE STATEMENT on page 2 of Form A must be signed and dated by a person that is authorized to execute contracts for your company.

Form B: **Identifying Other Contracts & Procurement Related Information** Disclosure Form B must be completed for each bid submitted by the bidding entity. It must be signed by an individual who is authorized to execute contracts for the bidding entity. *Note: Signing the NOT APPLICABLE STATEMENT on Form A does not allow the bidder to ignore Form B. Form B must be completed, signed and dated or the bidder may be considered nonresponsive and the bid will not be accepted.*

The Bidder shall identify, by checking Yes or No on Form B, whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other (non-IDOT) State of Illinois agency. If "No" is checked, the bidder only needs to complete the signature box on the bottom of Form B. If "Yes" is checked, the bidder must do one of the following:

Option I: If the bidder did not submit an Affidavit of Availability to obtain authorization to bid, the bidder must list all non-IDOT State of Illinois agency pending contracts, leases, bids, proposals, and other ongoing procurement relationships. These items may be listed on Form B or on an attached sheet(s). Do not include IDOT contracts. Contracts with cities, counties, villages, etc. are not considered State of Illinois agency contracts and are not to be included. Contracts with other State of Illinois agencies such as the Department of Natural Resources or the Capital Development Board must be included. Bidders who submit Affidavits of Availability are suggested to use Option II.

Option II: If the bidder is required and has submitted an Affidavit of Availability in order to obtain authorization to bid, the bidder may write or type "See Affidavit of Availability" which indicates that the Affidavit of Availability is incorporated by reference and includes all non-IDOT State of Illinois agency pending contracts, leases, bids, proposals, and other ongoing procurement relationships. For any contracts that are not covered by the Affidavit of Availability, the bidder must identify them on Form B or on an attached sheet(s). These might be such things as leases.

D. Bidders Submitting More Than One Bid

Bidders submitting multiple bids may submit one set of forms consisting of all required Form A disclosures and one Form B for use with all bids. Please indicate in the space provided below the bid item that contains the original disclosure forms and the bid items which incorporate the forms by reference.

- The bid submitted for letting item _____ contains the Form A disclosures or Certification Statement and the Form B disclosures. The following letting items incorporate the said forms by reference:

_____

_____

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form A
Financial Information & Potential Conflicts of Interest Disclosure

Contractor Name		
Legal Address		
City, State, Zip		
Telephone Number	Email Address	Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Illinois Procurement Code (30 ILCS 500). Vendors desiring to enter into a contract with the State of Illinois must disclose the financial information and potential conflict of interest information as specified in this Disclosure Form. This information shall become part of the publicly available contract file. This Form A must be completed for bids in excess of $10,000, and for all open-ended contracts. **A publicly traded company may submit a 10K disclosure in satisfaction of the requirements set forth in Form A. See Disclosure Form Instructions.**

DISCLOSURE OF FINANCIAL INFORMATION

1. Disclosure of Financial Information. The individual named below has an interest in the BIDDER (or its parent) in terms of ownership or distributive income share in excess of 5%, or an interest which has a value of more than $106,447.20 (60% of the Governor's salary as of 7/1/2007). **(Make copies of this form as necessary and attach a separate Disclosure Form A for each individual meeting these requirements)**

FOR INDIVIDUAL (type or print information)

NAME: _____

ADDRESS _____

_____

Type of ownership/distributable income share:

stock _____ sole proprietorship _____ partnership _____ other: (explain on separate sheet)

% or $ value of ownership/distributable income share: _____

2. Disclosure of Potential Conflicts of Interest. Check "Yes" or "No" to indicate which, if any, of the following potential conflict of interest relationships apply. If the answer to any question is "Yes", please attach additional pages and describe.

(a) State employment, currently or in the previous 3 years, including contractual employment of services. Yes____ No____

If your answer is yes, please answer each of the following questions.

1. Are you currently an officer or employee of either the Capitol Development Board or the Illinois Toll Highway Authority? Yes____ No____

2. Are you currently appointed to or employed by any agency of the State of Illinois? If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds $106,447.20, (60% of the Governor's salary as of 7/1/07) provide the name of the State agency for which you are employed and your annual salary.

_____

_____

3. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds $106,447.20, (60% of the Governor's salary as of 7/1/07) are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of the salary of the Governor? Yes ____ No____

4. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds $106,447.20, (60% of the Governor's salary as of 7/1/07) are you and your spouse or minor children entitled to receive (i) more than 15 % in the aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 2 times the salary of the Governor? Yes____ No____

(b) State employment of spouse, father, mother, son, or daughter, including contractual employment for services in the previous 2 years. Yes____ No____

If your answer is yes, please answer each of the following questions.

1. Is your spouse or any minor children currently an officer or employee of the Capital Development Board or the Illinois Toll Highway Authority? Yes____ No____

2. Is your spouse or any minor children is/are currently appointed to or employed by any agency of the State of Illinois? If your spouse or minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds $106,447.20, (60% of the Governor's salary as of 7/1/07) provide the name of your spouse and/or minor children, the name of the State agency for which he/she is employed and his/her annual salary.

   _____

   _____

3. If your spouse or any minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds $106,447.20, (60% of the Governor's salary as of 7/1/07) are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) and amount in excess of the salary of the Governor? Yes____ No____

4. If your spouse or any minor children are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds $106,447.20, (60% of the Governor's salary as of 7/1/07) are you and your spouse or minor children entitled to receive (i) more than 15% in the aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 2 times the salary of the Governor? Yes____ No____

(c) Elective status; the holding of elective office of the State of Illinois, the government of the United States, any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois currently or in the previous 3 years. Yes____ No____

(d) Relationship to anyone holding elective office currently or in the previous 2 years; spouse, father, mother, son, or daughter Yes____ No____

(e) Appointive office; the holding of any appointive government office of the State of Illinois, the United States of America, or any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois, which office entitles the holder to compensation in excess of the expenses incurred in the discharge of that office currently or in the previous 3 years. Yes____ No____

(f) Relationship to anyone holding appointive office currently or in the previous 2 years; spouse, father, mother, son, or daughter. Yes____ No____

(g) Employment, currently or in the previous 3 years, as or by any registered lobbyist of the State government. Yes____ No____

(h) Relationship to anyone who is or was a registered lobbyist in the previous 2 years; spouse, father, mother, son, or daughter. Yes____ No____

(i) Compensated employment, currently or in the previous 3 years, by any registered election or reelection committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections Yes____ No____

RETURN WITH BID

(j) Relationship to anyone; spouse, father, mother, son, or daughter; who was a compensated employee in the last 2 years by any registered election or re-election committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections. Yes____ No____

APPLICABLE STATEMENT

This Disclosure Form A is submitted on behalf of the INDIVIDUAL named on previous page.

Completed by: _____
Name of Authorized Representative (type or print)

Completed by: _____
Title of Authorized Representative (type or print)

Completed by: _____ _____
Signature of Individual or Authorized Representative Date

NOT APPLICABLE STATEMENT

I have determined that no individuals associated with this organization meet the criteria that would require the completion of this Form A.

This Disclosure Form A is submitted on behalf of the CONTRACTOR listed on the previous page.

_____
Name of Authorized Representative (type or print)

_____
Title of Authorized Representative (type or print)

_____ _____
Signature of Authorized Representative Date

RETURN WITH BID/OFFER

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form B
Other Contracts & Procurement Related Information Disclosure

Contractor Name		
Legal Address		
City, State, Zip		
Telephone Number	Email Address	Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Illinois Procurement Act (30 ILCS 500). This information shall become part of the publicly available contract file. This Form B must be completed for bids in excess of $10,000, and for all open-ended contracts.

DISCLOSURE OF OTHER CONTRACTS AND PROCUREMENT RELATED INFORMATION

1. Identifying Other Contracts & Procurement Related Information. The BIDDER shall identify whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other State of Illinois agency: Yes _____ No _____
If "No" is checked, the bidder only needs to complete the signature box on the bottom of this page.

2. If "Yes" is checked. Identify each such relationship by showing State of Illinois agency name and other descriptive information such as bid or project number (attach additional pages as necessary). SEE DISCLOSURE FORM INSTRUCTIONS:

THE FOLLOWING STATEMENT MUST BE SIGNED

_____
Name of Authorized Representative (type or print)

_____
Title of Authorized Representative (type or print)

_____ _____
Signature of Authorized Representative Date

SPECIAL NOTICE TO CONTRACTORS

The following requirements of the Illinois Department of Human Rights' Rules and Regulations are applicable to bidders on all construction contracts advertised by the Illinois Department of Transportation:

CONSTRUCTION EMPLOYEE UTILIZATION PROJECTION

(a) All bidders on construction contracts shall complete and submit, along with and as part of their bids, a Bidder's Employee Utilization Form (Form BC-1256) setting forth a projection and breakdown of the total workforce intended to be hired and/or allocated to such contract work by the bidder including a projection of minority and female employee utilization in all job classifications on the contract project.

(b) The Department of Transportation shall review the Employee Utilization Form, and workforce projections contained therein, of the contract awardee to determine if such projections reflect an underutilization of minority persons and/or women in any job classification in accordance with the Equal Employment Opportunity Clause and Section 7.2 of the Illinois Department of Human Rights' Rules and Regulations for Public Contracts adopted as amended on September 17, 1980. If it is determined that the contract awardee's projections reflect an underutilization of minority persons and/or women in any job classification, it shall be advised in writing of the manner in which it is underutilizing and such awardee shall be considered to be in breach of the contract unless, prior to commencement of work on the contract project, it submits revised satisfactory projections or an acceptable written affirmative action plan to correct such underutilization including a specific timetable geared to the completion stages of the contract.

(c) The Department of Transportation shall provide to the Department of Human Rights a copy of the contract awardee's Employee Utilization Form, a copy of any required written affirmative action plan, and any written correspondence related thereto. The Department of Human Rights may review and revise any action taken by the Department of Transportation with respect to these requirements.

RETURN WITH BID

Illinois Department of Transportation

PART I. IDENTIFICATION

Human Rights

Bid Number: _____ Duration of Project: _____

Name of Bidder: _____

PART II. WORKFORCE PROJECTION

A. The undersigned bidder has analyzed minority group and female populations, unemployment rates and availability of workers for the location in which this contract work is to be performed, and for the locations from which the bidder recruits employees, and hereby submits the following workforce projection including a projection for minority and female employee utilization in all job categories in the workforce to be allocated to this contract:

TABLE A

TOTAL Workforce Projection for Contract													TABLE B: CURRENT EMPLOYEES TO BE ASSIGNED TO CONTRACT			
			MINORITY EMPLOYEES						TRAINEES							
JOB CATEGORIES	TOTAL EMPLOYEES		BLACK		HISPANIC		*OTHER MINOR.		APPREN-TICES		ON THE JOB TRAINEES		TOTAL EMPLOYEES		MINORITY EMPLOYEES	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
OFFICIALS (MANAGERS)																
SUPERVISORS																
FOREMEN																
CLERICAL																
EQUIPMENT OPERATORS																
MECHANICS																
TRUCK DRIVERS																
IRONWORKERS																
CARPENTERS																
CEMENT MASONS																
ELECTRICIANS																
PIPEFITTERS, PLUMBERS																
PAINTERS																
LABORERS, SEMI-SKILLED																
LABORERS, UNSKILLED																
TOTAL																

TABLE C

TOTAL Training Projection for Contract								
EMPLOYEES IN TRAINING	TOTAL EMPLOYEES		BLACK		HISPANIC		*OTHER MINOR.	
	M	F	M	F	M	F	M	F
APPRENTICES								
ON THE JOB TRAINEES								

*Other minorities are defined as Asians (A) or Native Americans (N).
Please specify race of each employee shown in Other Minorities column.

FOR DEPARTMENT USE ONLY

BC 1256 - Pg 1 (Rev. 3/98)
IL 494-0454

Note: See instructions on page 2

RETURN WITH BID

PART II. WORKFORCE PROJECTION - continued

B. Included in "Total Employees" under Table A is the total number of **new hires** that would be employed in the event the undersigned bidder is awarded this contract.

The undersigned bidder projects that: (number) _____ new hires would be recruited from the area in which the contract project is located; and/or (number) _____ new hires would be recruited from the area in which the bidder's principal office or base of operation is located.

C. Included in "Total Employees" under Table A is a projection of numbers of persons to be employed directly by the undersigned bidder as well as a projection of numbers of persons to be employed by subcontractors.

The undersigned bidder estimates that (number) _____ persons will be directly employed by the prime contractor and that (number) _____ persons will be employed by subcontractors.

PART III. AFFIRMATIVE ACTION PLAN

A. The undersigned bidder understands and agrees that in the event the foregoing minority and female employee utilization projection included under **PART II** is determined to be an underutilization of minority persons or women in any job category, and in the event that the undersigned bidder is awarded this contract, he/she will, prior to commencement of work, develop and submit a written Affirmative Action Plan including a specific timetable (geared to the completion stages of the contract) whereby deficiencies in minority and/or female employee utilization are corrected. Such Affirmative Action Plan will be subject to approval by the contracting agency and the **Department of Human Rights**.

B. The undersigned bidder understands and agrees that the minority and female employee utilization projection submitted herein, and the goals and timetable included under an Affirmative Action Plan if required, are deemed to be part of the contract specifications.

Company _____ Telephone Number _____

_____

Address _____

NOTICE REGARDING SIGNATURE

The Bidder's signature on the Proposal Signature Sheet will constitute the signing of this form. The following signature block needs to be completed only if revisions are required.

Signature: _____ Title: _____ Date: _____

Instructions: All tables must include subcontractor personnel in addition to prime contractor personnel.

Table A - Include both the number of employees that would be hired to perform the contract work and the total number currently employed (Table B) that will be allocated to contract work, and include all apprentices and on-the-job trainees. The "Total Employees" column should include all employees including all minorities, apprentices and on-the-job trainees to be employed on the contract work.

Table B - Include all employees currently employed that will be allocated to the contract work including any apprentices and on-the-job trainees currently employed.

Table C - Indicate the racial breakdown of the total apprentices and on-the-job trainees shown in Table A.

RETURN WITH BID

CERTIFICATIONS REQUIRED BY STATE AND/OR FEDERAL LAW. The bidder is required by State and/or Federal law to make the below certifications and assurances as a part of the proposal and contract upon award. It is understood by the bidder that the certifications and assurances made herein are a part of the contract.

By signing the Proposal Signature Sheet, the bidder certifies that he/she has read and completed each of the following certifications and assurances, that required responses are true and correct and that the certified signature of the Proposal Signature Sheet constitutes an endorsement and execution of each certification and assurance as though each was individually signed:

A. By the execution of this proposal, the signing bidder certifies that the bidding entity has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action, in restraint of free competitive bidding in connection with the submitted bid. This statement made by the undersigned bidder is true and correct under penalty of perjury under the laws of the United States.

B. CERTIFICATION, EQUAL EMPLOYMENT OPPORTUNITY:

1. Have you participated in any previous contracts or subcontracts subject to the equal opportunity clause. YES____ NO____

2. If answer to #1 is yes, have you filed with the Joint Reporting Committee, the Director of OFCC, any Federal agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements of those organizations? YES____ NO____

C. BUY AMERICAN - STEEL AND MANUFACTURED PRODUCTS FOR CONSTRUCTION CONTRACTS (JAN 1991)

(a) The Aviation Safety and Capacity Expansion Act of 1990 provides that preference be given to steel and manufactured products produced in the United States when funds are expended pursuant to a grant issued under the Airport Improvement Program. The following terms apply:

1. Steel and manufactured products. As used in this clause, steel and manufactured products include (1) steel produced in the United States or (2) a manufactured product produced in the United States, if the cost of its components mined, produced or manufactured in the United States exceeds 60 percent of the cost of all its components and final assembly has taken place in the United States. Components of foreign origin of the same class or kind as the products referred to in subparagraphs (b)(1) or (2) shall be treated as domestic.

2. Components. As used in this clause, components means those articles, materials, and supplies incorporated directly into steel and manufactured products.

3. Cost of Components. This means the costs for production of the components, exclusive of final assembly labor costs.

(b) The successful bidder will be required to assure that only domestic steel and manufactured products will be used by the Contractor, subcontractors, materialmen, and suppliers in the performance of this contract, except those-

(1) that the U.S. Department of Transportation has determined, under the Aviation Safety and Capacity Expansion Act of 1990, are not produced in the United States in sufficient and reasonably available quantities of a satisfactory quality;

(2) that the U.S. Department of Transportation has determined, under the Aviation Safety and Capacity Expansion Act of 1990, that domestic preference would be inconsistent with the public interest; or

(3) that inclusion of domestic material will increase the cost of the overall project contract by more than 25 percent.

(End of Clause)

D. BUY AMERICAN CERTIFICATE (JAN 1991)

By submitting a bid/proposal under this solicitation, except for those items listed by the offeror below or on a separate and clearly identified attachment to this bid/proposal, the offeror certifies that steel and each manufactured product, is produced in the United States (as defined in the clause Buy American - Steel and Manufactured Products or Buy American - Steel and Manufactured Products For Construction Contracts) and that components of unknown origin are considered to have been produced or manufactured outside the United States.

Offerors may obtain from (IDOT, Division of Aeronautics) lists of articles, materials, and supplies excepted from this provision.

PRODUCT	COUNTRY OF ORIGIN

E. NPDES CERTIFICATION

In accordance with the provisions of the Illinois Environmental Protection Act, the Illinois Pollution Control Board Rules and Regulations (35 Ill. Adm. Code, Subtitle C, Chapter I), and the Clean Water Act, and the regulations thereunder, this certification is required for all construction contracts that will result in the disturbance of one or more acres total land area.

The undersigned bidder certifies under penalty of law that he/she understands the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit (ILR100000) that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

The Airport Owner or its Agent will:

1) prepare, sign and submit the Notice of Intent (NOI)

2) conduct site inspections and complete and file the inspection reports

3) submit Incidence of Non-Compliance (ION) forms

4) submit Notice of Termination (NOT) form

Prior to the issuance of the Notice-to-Proceed, for <u>each</u> erosion control measure identified in the Storm Water Pollution Prevention Plan, the contractor or subcontractor responsible for the control measure(s) must sign the above certification (forms to be provided by the Department).

F. NON-APPROPRIATION CLAUSE

By submitting a bid/proposal under this solicitation the offeror certifies that he/she understands that obligations of the State will cease immediately without penalty or further payment being required in any fiscal year the Illinois General Assembly fails to appropriate or otherwise make available sufficient funds for this contract.

G. Contractor is not delinquent in the payment of any debt to the State (or if delinquent has entered into a deferred payment plan to pay the debt), and Contractor acknowledges the contracting state agency may declare the contract void if this certification is false (30 ILCS 500/50-11, effective July 1, 2002).

RETURN WITH BID

NOTICE TO BIDDERS

1. **TIME AND PLACE OF OPENING BIDS.** Sealed proposals for the improvement described herein will be received by the Department of Transportation at the Harry R. Hanley Building, 2300 South Dirksen Parkway in Springfield, Illinois until 10:00 o'clock a.m., July 31, 2009. All bids will be gathered, sorted, publicly opened and read in the auditorium at the Department of Transportation's Harry R. Hanley Building shortly after the 10:00 a.m. cut off time.

2. **DESCRIPTION OF WORK**. The proposed improvement, shown in detail on the plans issued by the Department includes, in general, the following described work:

   Construct Runway 12L/30R extension and Taxiway B7.

3. **INSTRUCTIONS TO BIDDERS**.

   (a) This Notice, the invitation for bids, proposal and award shall, together with all other documents in accordance with Article 10-15 of the Illinois Standard Specifications for Construction of Airports, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.

   (b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.

4. **AWARD CRITERIA AND REJECTION OF BIDS**. This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the proposal and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to readvertise the proposed improvement, and to waive technicalities.

5. **PRE-BID CONFERENCE.** There will be a pre-bid conference held at N/A at the St. Louis Downtown Airport administration building. For engineering information, contact Charles Hagloch of Hanson Professional Services, Inc. at (217) 747-9376.

6. **DISADVANTAGED BUSINESS POLICY.** The DBE goal for this contract is 16.0%.

7. **SPECIFICATIONS AND DRAWINGS.** The work shall be done in accordance with the Illinois Standard Specifications for Construction of Airports, the Illinois Division of Aeronautics Supplemental Specifications and Recurring Special Provisions, the Special Provisions dated March 30, 2007 Revised 12/01/2008 and the Construction Plans dated March 30, 2007 as approved by the Department of Transportation, Division of Aeronautics.

8. **INSPECTION OF RECORDS.** The Contractor shall maintain an acceptable cost accounting system. The Sponsor, the FAA, and the Comptroller General of the United States shall have access to any books, documents, paper, and records of the Contractor which are directly pertinent to the specific contract for the purposes of making an audit, examination, excerpts, and transcriptions. The Contractor shall maintain all required records for three years after the Sponsor makes final payment and all other pending matters are closed.

9. RIGHTS TO INVENTIONS. All rights to inventions and materials generated under this contract are subject to Illinois law and to regulations issued by the FAA and the Sponsor of the Federal grant under which this contract is executed. Information regarding these rights is available from the FAA and the Sponsor.

10. TERMINATION OF CONTRACT.

1. The Sponsor may, be written notice, terminate this contract in whole or in part at any time, either for the Sponsor's convenience or because of failure to fulfill the contract obligations. Upon receipt of such notice services shall be immediately discontinued (unless the notice directs otherwise) and all materials as may have been accumulated in performing this contract, whether completed or in progress, delivered to the Sponsor.

2. If the termination is for the convenience of the Sponsor, an equitable adjustment in the contract price shall be made, but no amount shall be allowed for anticipated profit on unperformed services.

3. If the termination is due to failure to fulfill the Contractor's obligations, the Sponsor may take over the work and prosecute the same to completion by contract or otherwise. In such case, the Contractor shall be liable to the Sponsor for any additional cost occasioned to the Sponsor thereby.

4. If, after notice of termination for failure to fulfill contract obligations, it is determined that the Contractor had not so failed, the termination shall be deemed to have been effected for the convenience of the Sponsor. In such event, adjustment in the contract price shall be made as provided in paragraph 2 of this clause.

5. The rights and remedies of the sponsor provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

11. BIDDING REQUIREMENTS AND BASIS OF AWARD. When alternates are included in the proposal, the following shall apply:

a. Additive Alternates

(1) Bidders must submit a bid for the Base Bid and for all Additive Alternates.

(2) Award of this contract will be made to the lowest responsible qualified bidder computed as follows:

The lowest aggregate amount of (i) the Base Bid plus (ii) any Additive Alternate(s) which the Department elects to award.

The Department may elect not to award any Additive Alternates. In that case, award will be to the lowest responsible qualified bidder of the Base Bid.

b. Optional Alternates

(1) Bidders must submit a bid for the Base Bid and for either Alternate A or Alternate B or for both Alternate A and Alternate B.

(2) Award of this contract will be made to the lowest responsible qualified bidder computed as follows:

The lower of the aggregate of either (i) the Base Bid plus Alternate A or (ii) the Base Bid plus Alternate B.

12. **CONTRACT TIME.** The Contractor shall complete all work within the specified contract time. Any calendar day extension beyond the specified contract time must be fully justified, requested by the Contractor in writing, and approved by the Engineer, or be subject to liquidated damages.

    The contract time for this contract is 87 (does not include winter shutdown) calendar days.

13. **INDEPENDENT WEIGHT CHECKS.** The Department reserves the right to conduct random unannounced independent weight checks on any delivery for bituminous, aggregate or other pay item for which the method of measurement for payment is based on weight. The weight checks will be accomplished by selecting, at random, a loaded truck and obtaining a loaded and empty weight on an independent scale. In addition, the department may perform random weight checks by obtaining loaded and empty truck weights on portable scales operated by department personnel.

14. **GOOD FAITH COMPLIANCE.** The Illinois Department of Transportation has made a good faith effort to include all statements, requirements, and other language required by federal and state law and by various offices within federal and state governments whether that language is required by law or not. If anything of this nature has been left out or if additional language etc. is later required, the bidder/contractor shall cooperate fully with the Department to modify the contract or bid documents to correct the deficiency. If the change results in increased operational costs, the Department shall reimburse the contractor for such costs as it may find to be reasonable.

15. **ADDENDA AND REVISIONS:** It is the contractor's responsibility to determine which, if any, addenda or revisions pertain to any project they may be bidding. Failure to incorporate all relevant addenda or revisions may cause the bid to be declared unacceptable.

    Each addendum will be placed with the contract number. Addenda and revisions will also be placed on the Addendum/Revision Checklist and each subscription service subscriber will be notified by e-mail of each addendum and revision issued.

    The Internet is the Department's primary way of doing business. The subscription server e-mails are an added courtesy the Department provides. It is suggested that the bidder check IDOT's website at http://www.dot.il.gov/desenv/delett.html before submitting final bid information.

    IDOT IS NOT RESPONSIBLE FOR ANY E-MAIL RELATED FAILURES.

    Technical Questions about downloading these files may be directed to Tim Garman (217)524-1624 or Timothy.Garman@illinois.gov.

RETURN WITH BID

PROPOSAL SIGNATURE SHEET

The undersigned bidder hereby makes and submits this bid on the subject Proposal, thereby assuring the Department that all requirements of the Invitation for Bids and rules of the Department have been met, that there is no misunderstanding of the requirements of paragraph 4 of this Proposal, and that the contract will be executed in accordance with the rules of the Department if an award is made on this bid.

(IF AN INDIVIDUAL)

Firm Name _____

Signature of Owner _____

Business Address _____

(IF A CO-PARTNERSHIP)

Firm Name _____

By _____

Business Address _____

Name and Address of All Members of the Firm:

_____ _____

_____ _____

(IF A CORPORATION)

Corporate Name _____
Corporate Seal

By _____
President

Attest _____
Corporate Secretary

Business Address _____

Name of Corporate Officers:

_____ _____ _____
President Corporate Secretary Treasurer

NOTARY CERTIFICATION

STATE OF ILLINOIS,

ALL SIGNATURES MUST BE NOTARIZED

COUNTY OF _____

I, _____, a Notary Public in and for said county, do hereby certify that _____

_____ AND _____
(Insert names of individual(s) signing on behalf of bidder)

who are each personally known to me to be the same persons whose names are subscribed to the foregoing instrument on behalf of the bidder, appeared before me this day in person and acknowledged that they signed, sealed, and delivered said instrument as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this _____ day of _____ , A.D. _____

My commission expires _____ _____(Seal)
Notary Public

Illinois Department of Transportation

Return with Bid

Division of Aeronautics
Proposal Bid Bond

Sponsor _____ Item No. _____

IL Proj. No. _____ AIP Proj. No. _____ Letting Date _____

KNOW ALL MEN BY THESE PRESENTS, That We _____

_____

as PRINCIPAL, and _____

_____ as SURETY, are held jointly, severally and firmly bound unto the SPONSOR identified above, in the penal sum of 5 percent of the total bid price, or for the amount specified in Section 6, Proposal Guarantee of the Proposal Document, whichever is the lesser sum, well and truly to be paid unto said SPONSOR, for the payment of which we bind ourselves, our heirs, executors, administrators, successors and assigns.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH, that whereas, the PRINCIPAL has submitted a bid proposal to the SPONSOR through its AGENT, the State of Illinois, Department of Transportation, Division of Aeronautics, for the improvement designated by the Transportation Bulletin Item Number and Letting Date indicated above.

NOW, THEREFORE, if the SPONSOR through its AGENT shall accept the bid proposal of the PRINCIPAL; and if the PRINCIPAL shall, and as specified in the bidding and contract documents, submit a DBE Utilization Plan that is accepted and approved by the AGENT; and if, after the award by AGENT on behalf of SPONSOR, the PRINCIPAL shall enter into a contract in accordance with the terms of the bidding and contract documents, including evidence of the required insurance coverages, and providing such bond as specified with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof; or if, in the event of the failure of the PRINCIPAL to make the required DBE submission or to enter into such contract and to give the specified bond, the PRINCIPAL pays to the SPONSOR the difference not to exceed the penalty hereof between the amount specified in the bid proposal and such larger amount for which the SPONSOR may contract with another party to perform the work covered by said bid proposal, then this obligation shall be null and void, otherwise, it shall remain in full force and effect.

IN THE EVENT the SPONSOR acting through its AGENT determines the PRINCIPAL has failed to comply with any requirement as set forth in the preceding paragraph, then SURETY shall pay the penal sum to the SPONSOR within fifteen (15) days of written demand therefor. If SURETY does not make full payment within such period of time, the AGENT may bring an action to collect the amount owed. SURETY is liable to the SPONSOR and to the AGENT for all its expenses, including attorney's fees, incurred in any litigation in which SPONSOR or AGENT prevail either in whole or in part.

In TESTIMONY WHEREOF, the said PRINCIPAL and the said SURETY have caused this instrument to be signed by their respective officers _____ day of _____ A.D., _____ .

PRINCIPAL

_____
(Company Name)

By _____
(Signature & Title)

SURETY

_____
(Company Name)

By: _____
(Signature of Attorney-in-Fact)

Notary Certification for Principal and Surety

STATE OF ILLINOIS,
County of _____

I, _____, a Notary Public in and for said County, do hereby certify that

_____ and _____
(Insert names of individuals signing on behalf of PRINCIPAL & SURETY)

who are each personally known to me to be the same persons whose names are subscribed to the foregoing instrument on behalf of PRINCIPAL and SURETY, appeared before me this day in person and acknowledged respectively, that they signed and delivered said instrument as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this _____ day of _____ A.D. _____

My commission expires _____ _____
Notary Public

In lieu of completing the above section of the Proposal Bid Form, the Principal may file an Electronic Bid Bond. By signing the proposal and marking the check box next to the Signature and Title line below, the Principal is ensuring the identified electronic bid bond has been executed and the Principal and Surety are firmly bound unto the SPONSOR through its AGENT under the conditions of the bid bond as shown above.

_____ _____ _____
Electronic Bid Bond ID# Company / Bidder Name Signature and Title

AER 356B (Rev. 05/07/09)

Illinois Department of Transportation

PROPOSALS

for construction work advertised for bids by the
Illinois Department of Transportation

Item No.	Item No.	Item No.

Submitted By:

Name:
Address:
Phone No.

Bidders should affix this form to the front of a 10” x 13” envelope and use that envelope for the submittal of bids. If proposals are mailed, they should be enclosed in a second or outer envelope addressed to:

Engineer of Design and Environment - Room 326
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

NOTICE

Individual bids, including Bid Bond and/or supplemental information if required, should be securely stapled.

CONTRACTOR OFFICE COPY OF CONTRACT SPECIFICATIONS

NOTICE

None of the following material needs to be returned with the bid package unless the special provisions require documentation and/or other information to be submitted.

Illinois Department of Transportation

CONTRACT REQUIREMENTS

(1) Airport Improvement Program projects. The work in this contract is included in the federal Airport Improvement Program and is being undertaken and accomplished by the Illinois Department of Transportation, Division of Aeronautics and the Municipality, hereinafter called the Co-Sponsors, in accordance with the terms and conditions of a Grant Agreement between the Co-Sponsors and the United States, under the Airport and Airway Improvement Act of 1982 (Public Law 97-248; Title V, Section 501 et seq., September 3, 1982; 96 Stat. 671; codified at 49 U.S.C Section 2201 et seq.) and Part 152 of the Federal Aviation Regulations (14 CFR Part 152), pursuant to which the United States has agreed to pay a certain percentage of the costs of the Project that are determined to be allowable Project costs under the Act. The United States is not a party to this contract and no reference in this contract to FAA or representative thereof, or to any rights granted to the FAA or any representative thereof, or the United States, by the contract, makes the United States a party to this contract.

(2) Consent of Assignment. The Contractor shall obtain the prior written consent of the Co-Sponsors to any proposed assignment of any interest in or part of this contract.

(3) Convict Labor. No convict labor may be employed under this contract.

(4) Veterans Preference. In the employment of labor, except in executive, administrative, and supervisory positions, preference shall be given to veterans of the Vietnam era and disabled veterans as defined in Section 515(c) of the Airport and Airway Improvement Act of 1982. However, this preference shall apply only where the individuals are available and qualified to perform the work to which the employment relates.

(5) Withholding: Sponsor from Contractor. Whether or not payments or advances to the Co-Sponsors are withheld or suspended by the FAA, the Co-Sponsors may withhold or cause to be withheld from the Contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics employed by the Contractor or any subcontractor on the work the full amount of wages required by this contract.

(6) Nonpayment of Wages. If the Contractor or subcontractor fails to pay any laborer or mechanic employed or working on the site of the work any of the wages required by this contract the Co-Sponsors may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment or advance of funds until the violations cease.

(7) FAA Inspection and Review. The Contractor shall allow any authorized representative of the FAA to inspect and review any work or materials used in the performance of this contract.

(8) Subcontracts. The Contractor shall insert in each of his subcontracts the provisions contained in Paragraphs (1), (3), (4), (5), (6), and (7) above and also a clause requiring the subcontractors to include these provisions in any lower tier subcontracts which they may enter into, together with a clause requiring this insertion in any further subcontracts that may in turn be made.

(9) Contract Termination. A breach of Paragraph (6), (7), and (8) above may be grounds for termination of the contract.

PROVISIONS REQUIRED BY THE REGULATIONS
OF THE SECRETARY OF LABOR
29 CFR 5.5

(a) Contract Provisions and Related Matters.

(1) Minimum Wages.

Revised 1/92

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provision of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraph 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(ii)(B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140).

(ii)(C) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140).

(ii)(D) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(B) or (C) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB control number 1215-0140).

(2) Withholding. The Federal Aviation Administration shall upon its own action or written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such work, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office Management and Budget under OMB control numbers 1215-0140 and 1215-0017).

(ii)(A) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the Federal Aviation Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under paragraph 5.5(a)(3)(i) of Regulations, 29 CFR Part 5. This information may be submitted in any form desired.

Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime Contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB control number 1215-0149).

(ii)(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor, or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be maintained under paragraph 5.5(a)(3)(i) of Regulations, 29 CFR Part 5 and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed as specified in the applicable wage determination incorporated into the contract.

(ii)(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(ii)(D) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The Contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the (write the name of the agency) or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and Trainees

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as a apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ration permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event

the Employment and Training Administration withdraws approval of a training program, the contract will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

(5) Compliance with Copeland Act requirements. The Contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The Contractor or subcontractor shall insert in any subcontracts the clauses contained in paragraph (a)(1) through (10) of this contract and such other clauses as the Federal Aviation Administration may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by an subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract determination: debarment. A breach of these contract clauses paragraphs (a)(1) through (10) and the 2nd clause (b)(1) through (5) below may be grounds for termination of the contract and for debarment as a Contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by referenced in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of Eligibility.

(i) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(b) Contract Work Hours and Safety Standards Act. The Agency Head shall cause or require the contracting officer to insert the following clauses set forth in paragraphs (b)(1), (2), (3), (4) and (5) of this section in full in AIP construction contracts in excess of $2,000. These clauses shall be inserted in addition to the clauses required by paragraph 5.5(a) or paragraph 4.6 of Part 4 of this title. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements: No Contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen or guards (including apprentices and trainees described in paragraphs 5 and 6 above) shall require or permit any laborer, mechanic, watchman or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman or guard receives compensation at a rate not less than one and one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violations: Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the Contractor and any subcontractor responsible therefore shall be liable to any affected employee for his/her unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman or guard employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of $10.00 for each calendar day on which such employee was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any other Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

(5) Working Conditions. No Contractor or subcontractor may require any laborer or mechanic employed in the performance of any contract to work in surroundings or under working conditions that are unsanitary, hazardous, or dangerous to his health or safety as determined under construction safety and health standards (29 CFR 1926) issued by Department of Labor.

(c) In addition to the clauses contained in paragraph (b), in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in paragraph 5.1, the Agency Head shall cause or require the contracting officer to insert a clause requiring that the Contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Agency Head shall cause or require the contracting officer to insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the Contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the Contractor or subcontractor will permit such representatives to interview employees during working hours on the job. (Approved by the Office of Management and Budget under OMB control numbers 1215-0140 and 1215-0017).

FEDERAL REGULATIONS VOL. 40, #74,
WEDNESDAY, APRIL 16, 1975, PAGE 17124,
ADMINISTRATION OF THE CLEAR AIR ACT
& WATER POLLUTION CONTROL ACT
(with respect to Federal Grants)

In connection with the administration of the Clean Air Act and the Water Pollution Control Act with respect to Federal Grants, specific requirements have been imposed of any contract which is not exempt under the provisions of 40 CFR 15.5.

(1) Any facility listed on the EPA List of Violating Facilities pursuant to Paragraph 15.20 of 40 CFR as of the date of the contract award will not be utilized in the performance of any non-exempt contract or subcontract.

(2) The Contractor shall comply with all the requirements of Section 114 of the Clean Air Act, as amended, 42 USC 1857 et seq. and Section 308 of the Federal Water Pollution Control Act, as amended, 33 USC 1251 et seq. relating to inspection, monitoring, entry, reports and information, as well as all other requirements specified in Section 114 and Section 308 of the Air Act and Water Act, respectively, and all regulations and guidelines issued thereunder after the award of the contract.

(3) Prompt notification shall be required prior to contract award to the awarding official by the Contractor who will receive the award of the receipt of any communication from the Director, Office of Federal Activities, U.S. Environmental Protection Agency, indicating that a facility to be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

(4) The Contractor shall include or cause to be included the criteria and requirements in paragraphs 1 through 4 in any non-exempt subcontract and will take such action as the Government may direct as a means of enforcing such provisions.

Attachment No. 1

During the performance of the contract, the Contractor agrees as follows:

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The Contractor will, in all solicitations or advertisements for employees placed by or on the behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

(3) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or worker's representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of 24 September 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of 24 September 1965, or by rule, regulation or order of the Secretary of Labor, or as otherwise provided by law.

(7) The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of 24 September 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as means of enforcing such provisions, including sanctions for noncompliance; provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

ATTACHMENT NO. 2

EACH PRIME CONTRACTOR SHALL INSERT IN EACH SUBCONTRACT THE CERTIFICATION IN APPENDIX B, AND FURTHER, SHALL REQUIRE ITS INCLUSION IN ANY LOWER TIER SUBCONTRACT, PURCHASE ORDER, OR TRANSACTION THAT MAY IN TURN BE MADE.

- Appendix B of 49 CFR Part 29 -

This certification applies to subcontractors, material suppliers, vendors and other lower tier participants.

Appendix B--Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transactions

Instructions for Certification

1. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction, "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

5. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

6. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transactions

(1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

STATE REQUIRED CONTRACT PROVISIONS

ALL FEDERAL-AID CONSTRUCTION CONTRACTS

Effective February 1, 1969
Revised January 2, 1973

The following provisions are State of Illinois requirements and are in addition to the Federal requirements.

"EQUAL EMPLOYMENT OPPORTUNITY"

In the event of the Contractor's noncompliance with any provisions of this Equal Employment Opportunity Clause, the Illinois Fair Employment Practices Act or the Fair Employment Practices Commission's Rules and Regulations for Public Contracts, the Contractor may be declared nonresponsible and therefore ineligible for future contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations, and the contract may be canceled or avoided in whole or in part, and such other sanctions or penalties may be imposed or remedies invoked as provided by statute or regulation.

During the performance of this contract, the Contractor agrees as follows:

(1) That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin or ancestry; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.
(2) That, if it hires additional employees in order to perform this contract or any portion hereof, it will determine the availability (in accordance with the Commission's Rules and Regulations for Public Contracts) of minorities and women in the area(s) from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.
(3) That, in all solicitations or advertisements for employees placed by it or on its behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, national origin or ancestry.
(4) That it will send to each labor organization or representative of workers with which it has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the Contractors obligations under the Illinois Fair Employment Practices Act and the Commission's Rules and Regulations for Public Contracts. If any such labor organization or representative fails or refuses to cooperate with the Contractor in its efforts to comply with such Act and Rules and Regulations, the Contractor will promptly so notify the Illinois Fair Employment Practices Commission and the contracting agency and will recruit employees from other sources when necessary to fulfill its obligations thereunder.
(5) That it will submit reports as required by the Illinois Fair Employment Practices Commission's Rules and Regulations for Public Contracts, furnish all relevant information as may from time to time be requested by the Commission or the contracting agency, and in all respects comply with the Illinois Fair Employment Practices Act and the Commission's Rules and Regulations for Public Contracts.
(6) That it will permit access to all relevant books, records, accounts and work sites by personnel of the contracting agency and the Illinois Fair Employment Practices Commission for purposes of investigation to ascertain compliance with the Illinois Fair Employment Practices Act and the Commission's Rules and Regulations for Public Contracts.
(7) That it will include verbatim or by reference the provisions of paragraphs 1 through 7 of this clause in every performance subcontract as defined in Section 2.10(b) of the Commission's Rules and Regulations for Public Contracts so that such provisions will be binding upon every subcontractor; and that it will also so include the provisions or paragraphs 1, 5, 6 and 7 in every supply subcontract as defined in Section 2.10(a) of the Commission's Rules and Regulations for Public Contracts so that such provisions will be binding upon every such subcontractor. In the same manner as with other provisions of this contract, the Contractor will be liable for compliance with applicable provisions of this clause by all its subcontractors; and further it will promptly notify the contracting agency and the Illinois Fair Employment Practices Commission in the event any subcontractor fails or refuses to comply therewith. In addition, no Contractor will utilize any subcontractor declared by the Commission to be nonresponsible and therefore ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.

CONSTRUCTION CONTRACT PROCUREMENT POLICIES

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SECTION 1

PROPOSAL REQUIREMENTS AND CONDITIONS

1-01 ADVERTISEMENT (Notice to Bidders). The State of Illinois shall publish the advertisement at such places and at such times as are required by local law or ordinances. The published advertisement shall state the time and place for submitting sealed proposals; a description of the proposed work; instructions to bidders as to obtaining proposal forms, plans, and specifications; proposal guaranty required; and the Owner's right to reject any and all bids.

For Federally assisted contracts the advertisement shall conform to the requirements of local laws and ordinances pertaining to letting of contracts and, in addition, shall conform to the requirements of the appropriate parts of the Federal Aviation Regulations applicable to the particular contract being advertised.

1-02 PREQUALIFICATION OF BIDDERS.

(a) When the awarding authority is the State of Illinois, each prospective bidder, prior to being considered for issuance of any proposal forms will be required to file, on forms furnished by the Department, an experience questionnaire and a confidential financial statement in accordance with the Department's Instructions for Prequalification of Contractors. The Statement shall include a complete report of the prospective bidder's financial resources and liabilities, equipment, past record and personnel, and must be submitted at least thirty (30) days prior to the scheduled opening of bids in which the Contractor is interested.

After the Department has analyzed the submitted "Contractor's Statement of Experience and Financial Condition" and related information and has determined appropriate ratings, the Department will issue to the Contractor a "Certificate of Eligibility". The Certificate will permit the Contractor to obtain proposal forms and plans for any Department of Transportation letting on work which is within the limits of the Contractor's potential as indicated on his "Certificate of Eligibility", subject to any limitations due to present work under contract or pending award as determined from the Contractor's submitted "Affidavit of Availability". Bidders intending to consistently submit proposals shall submit a "Contractor's Statement of Experience and Financial Condition" at least once a year. However, prequalification may be changed during that period upon the submission of additional favorable reports or upon reports of unsatisfactory performance.

Before a proposal is issued, the prospective bidder will be required to furnish an "Affidavit of Availability" indicating the location and amount of all uncompleted work under contract, or pending award, either as principal or subcontractor, as well as a listing of all subcontractors and value of work sublet to others. The prospective bidder may be requested to file a statement showing the amount and condition of equipment which will be available.

Before an award is made, the bidder may be required to furnish an outline of his plans for conducting the work.

(b) When the awarding authority for contract construction work is the County Board of a county; the Council, the City Council, or the President and Board of Trustees of a city, village or town, each prospective bidder, in evidence of his competence, shall furnish the awarding authority as a prerequisite to the release of proposal forms by the awarding authority, a certified or photostatic copy of a "Certificate of Eligibility" issued by the Department of Transportation, in accordance with Section 1-02(a).

The two low bidders must file within 24 hours after the letting a sworn affidavit, in triplicate, showing all uncompleted contracts awarded to them and all low bids pending award for Federal, State, County, Municipal and private work, using the blank form made available for this affidavit. One copy shall be filed with the awarding authority and two copies with the District Highway Office.

1-03 CONTENTS OF PROPOSAL FORMS. Upon request, the Department will furnish the prequalified bidders a proposal form. This form will state the location and description of the contemplated construction and will show the estimate of the various quantities and kinds of work to be performed or materials to be furnished, and will have a schedule of items for which unit bid prices are invited. The proposal form will state the time in which work must be completed, the amount of the proposal guaranty, labor requirements, and date, time and place of the opening of proposals. The form will also include any special provisions or requirements which vary from or are not contained in these specifications.

All papers bound with or attached to the proposal form are considered a part thereof and must not be detached or altered when the proposal is submitted. Any addenda officially issued by the Department, will be considered a part of the proposal whether attached or not.

For Federally assisted contracts, the proposal shall conform to the requirements of local laws and ordinances pertaining to letting of contracts and, in addition, shall conform to the requirements of the appropriate parts of the Federal Aviation Regulations pertaining to the particular contract being let.

1-04 ISSUANCE OF PROPOSAL FORMS. The Department shall refuse to issue a proposal form for any of the following reasons:

(a) Lack of competency and adequate machinery, plant and other equipment, as revealed by the financial statement and experience questionnaires required under Section 1-02(a).
(b) Uncompleted work which, in the judgment of the Department, might hinder or prevent the prompt completion of additional work if awarded.
(c) False information provided on a bidder's "Affidavit of Availability".
(d) Failure to pay, or satisfactorily settle, all bills due for labor and material on former contracts in force at the time of issuance of proposal forms.
(e) Failure to comply with any prequalification regulations of the Department.
(f) Default under previous contracts.
(g) Unsatisfactory performance record as shown by past work for the Department, judged from the standpoint of workmanship and progress.
(h) When the Contractor is suspended from eligibility to bid at a public letting where the contract is awarded by, or require approval of, the Department.
(i) When any agent, servant, or employee of the prospective bidder currently serves as a member, employee, or agent of a governmental body that is financially involved in the proposed work.
(j) When any agent, servant, or employee of the prospective bidder has participated in the preparation of plans or specifications for the proposed work.

1-05 INTERPRETATION OF QUANTITIES IN BID SCHEDULE. 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 subsection titled ALTERATION OF WORK AND QUANTITIES of Section 20 of the Illinois Standard Specifications for Construction of Airports without in any way invalidating the unit bid prices.

1-06 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. He shall satisfy himself as to the character, quality, and quantities of work to be performed, materials to be furnished, and as to the requirements of the proposed contract. The submission of a proposal shall be prima facie evidence that the bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work and as to the requirements of the proposed contract, plans, and specifications.

Boring logs, underground utilities and other records of subsurface investigations and tests are available for inspection of bidders. It is understood and agreed that such subsurface information, whether included in the plans, specifications, or otherwise made available to the bidder, was obtained and is intended for the Owner's design and estimating purposes only. Such information has been made available for the convenience of all bidders. It is further understood and agreed that each bidder is solely responsible for all assumptions, deductions, or conclusions which he may make or obtain from his examination of the boring logs and other records of subsurface investigations and tests that are furnished by the Owner.

1-07 PREPARATION OF THE PROPOSAL. The bidder shall submit his proposal on the form furnished by the Department. The proposal shall be executed property, and bids shall be made for all items indicated in the proposal form, except that when alternate bids are asked, a bid on more than one alternate for each item is not required, unless otherwise provided. The bidder shall indicate, in figures, a unit price for each of the separate items called for in the proposal; he shall show the products of the respective quantities and unit prices in the column provided for that purpose, and the gross sum shown in the place indicated in the proposal shall be the summation of said products. All writing shall be with ink or typewriter, except the signature of the bidder which shall be written with ink.

If the proposal is made by an individual, his name and business address shall be shown. If made by a firm or partnership, the name and business address of each member of the firm or partnership shall be shown. If made by a corporation, the proposal shall show the names, titles, and business address of the president, secretary, and treasurer, and the seal of the corporation shall be affixed and attested by the secretary.

The proposal shall be issued to a prequalified bidder in the same name and style as the financial statement used for prequalification and shall be submitted in like manner.

1-08 REJECTION OF PROPOSALS. The Department reserves the right to reject proposals for any of the conditions in Article 1-04 or for any of the following reasons:

(a) More than one proposal for the same work from an individual, firm, partnership, or corporation under the same or different names.
(b) Evidence of collusion among bidders.
(c) Unbalanced proposals in which the prices for some items are obviously out of proportion to the prices for other items.
(d) If the proposal does not contain a unit price for each pay item listed except in the case of authorized alternate pay items or lump sum pay items.
(e) If the proposal is other than that furnished by the Department; or if the form is altered or any part thereof is detached.
(f) If there are omissions, erasures, alterations, unauthorized additions, conditional or alternate bids, or irregularities of any kind which may tend to make the proposal incomplete, indefinite, or ambiguous as to its meaning.
(g) If the bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.
(h) If the proposal is not accompanied by the proper proposal guaranty.
(i) If the proposal is prepared with other than ink or typewriter.
(j) If the proposal is submitted in any other name other than that to whom it was issued by the Department.

1-09 PROPOSAL GUARANTY. Each Proposal shall be accompanied by either a bid bond on the Department of Transportation, Division of Aeronautics form contained in the proposal, executed by a corporate surety company satisfactory to the Department or by a bank cashier's check or a properly certified check for not less than 5 percent of the amount bid.

Bank cashier's checks, or properly certified checks accompanying proposals shall be made payable to the Treasurer, State of Illinois.

1-10 DELIVERY OF PROPOSALS. Each proposal should be submitted in a special envelope furnished by the Department. The blank spaces on the envelope shall be filled in correctly to clearly indicate its contents. When an envelope other than the special one furnished by the Department is used, it shall be of the same general size and shape and be similarly marked to clearly indicate its contents. When sent by mail, the sealed proposal shall be addressed to the Department at the address and in care of the official in whose office the bids are to be received. All proposals shall be filed prior to the time and place specified in the Notice to Bidders. Proposals received after the time for opening of bids will be returned to the bidder unopened.

1-11 WITHDRAWAL OF PROPOSALS. Permission will be given a bidder to withdraw a proposal if he makes his request in writing or by telegram before the time for opening proposals. If a proposal is withdrawn, the bidder will not be permitted to resubmit this proposal at the same letting. With the approval of the Engineer, a bidder may withdraw a proposal and substitute a new proposal prior to the time of opening bids.

1-12 PUBLIC OPENING OF PROPOSALS. Proposals will be opened and read publicly at the time and place specified in the Notice to Bidders. Bidders, their authorized agents, and other interested parties are invited to be present.

1-13 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.

(c) If the bidder is considered to be in "default" for any reason specified in the Subsection 1-04 titled ISSUANCE OF PROPOSAL FORMS of this section.

1-14 WORKER'S COMPENSATION INSURANCE. Prior to the approval of his contract by the Division, the Contractor shall furnish to the Division certificates of insurance covering Worker's Compensation, or satisfactory evidence that this liability is otherwise taken care of in accordance with Section 4.(a) of the "Worker's Compensation Act of the State of Illinois" as amended.

SECTION 2

AWARD AND EXECUTION OF CONTRACT

2-01 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. In the event of a discrepancy between unit bid prices and extensions, the unit bid price shall govern.

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

(a) If the proposal is irregular as specified in the subsection titled REJECTION OF PROPOSALS of Section 1.

(b) If the bidder is disqualified for any of the reasons specified in the subsection titled DISQUALIFICATION OF BIDDERS of Section 1.

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.

2-02 AWARD OF CONTRACT. The award of contract will be made within 60 calendar days after the opening of proposals to the lowest responsible and qualified bidder whose proposal complies with all the requirements prescribed. The successful bidder will be notified by letter, that his bid has been accepted, and that he has been awarded the contract.

If a contract is not awarded within 60 days after the opening of proposals, a bidder may file a written request with the Division for the withdrawal of his bid and the Division will permit such withdrawal.

For Federally assisted contracts, unless otherwise specified in this subsection, no award shall be made until the FAA has concurred in the Owner's recommendation to make such award and has approved the Owner's proposal contract to the extent that such concurrence and approval are required by Federal Regulations.

2-03 CANCELLATION OF AWARD. The Division reserves the right to cancel the award without liability to the bidder at any time before a contract has been fully executed by all parties and is approved by the Owner in accordance with the subsection titled APPROVAL OF CONTRACT of this section. The Division at the time of cancellation will return the proposal guaranty.

2-04 RETURN OF PROPOSAL GUARANTY. The proposal guaranties of all except the two lowest bidders will be returned promptly after the proposals have been checked, tabulated, and the relation of the proposals established. Proposal guaranties of the two lowest bidders will be returned as soon as the Construction Contract, Performance Bonds, and Payment Bonds of the successful bidder have been properly executed and approved.

If any other form of proposal guaranty is used, other than a bid bond, a bid bond may be substituted at the Contractor's option.

2-05 REQUIREMENT OF PERFORMANCE AND PAYMENT BONDS. The successful bidder for a contract, at the time of the execution of the contract, shall deposit with the Division separate performance and payment bonds each for the full amount of the contract. The form of the bonds shall be that furnished by the Division, and the sureties shall be acceptable to the Division.

2-06 EXECUTION OF CONTRACT. The successful bidder shall sign (execute) the Contract and shall return the signed Contract to the Owner (Sponsor) for signature (execution) and subsequently return all copies to the Division. The fully executed surety bonds specified in the subsection title REQUIREMENTS OF PERFORMANCE AND PAYMENT BONDS of this section will be forwarded to the Division within 15 days of the date mailed or otherwise delivered to the successful bidder. If the Contract and Bonds are mailed, special handling is recommended.

If the bidder to whom award is to be made is a corporation organized under the laws of a State other than Illinois, the bidder shall furnish the Division a copy of the corporation's certificate of authority to do business in the State of Illinois with the return of the executed contract and bond. Failure to furnish such evidence of a certificate of authority within the time required will be considered as just cause for the annulment of the award and the forfeiture of the proposal guaranty to the State, not as a penalty, but in payment of liquidated damages sustained as a result of such failure.

2-07 APPROVAL OF CONTRACT. Upon receipt of the contract and 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 contract to the Division for approval and execution by the Division. Delivery of the fully executed contract to the Contractor shall constitute the Department's approval to be bound by the successful bidder's proposal and the terms of the contract.

2-08 FAILURE TO EXECUTE CONTRACT. If the contract is not executed by the Division within 15 days following receipt from the bidder of the properly executed contracts and bonds, the bidder shall have the right to withdraw his bid without penalty.

Failure of the successful bidder to execute the contract and file acceptable bonds within 15 days after the contract has been mailed to him shall be just cause for the cancellation of the award and the forfeiture of the proposal guaranty which shall become the property of the State, not as a penalty, but as liquidation of damages sustained.

ILLINOIS DEPARTMENT OF TRANSPORTATION

DIVISION OF AERONAUTICS

The requirements of the following provisions written for Federally-assisted construction contracts, including all goals and timetables and affirmative action steps, shall also apply to all State-funded construction contracts awarded by the Illinois Department of Transportation.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

APPENDIX A

The following goal for female utilization in each construction craft and trade shall apply to all Contractors holding Federal and federally assisted construction contracts and subcontracts in excess of $10,000. The goal is applicable to the Contractor's total on-site construction workforce, regardless of whether or not part of that workforce is performing work on a Federal, federally assisted or nonfederally related construction contact or subcontract.

AREA COVERED (STATEWIDE)

Goals for Women apply nationwide.

GOAL

	Goal (percent)
Female Utilization.....	6.9

APPENDIX B

Until further notice, the following goals for minority utilization in each construction craft and trade shall apply to all Contractors holding Federal and federally-assisted construction contracts and subcontracts in excess of $10,000. to be performed in the respective geographical areas. The goals are applicable to the Contractor's total on-site construction workforce, regardless of whether or not part of that workforce is performing work on a Federal, federally-assisted or nonfederally related construction contract or subcontract.

Economic Area	Goal (percent)
056 Paducah, KY:	
Non-SMSA Counties -	5.2
IL - Hardin, Massac, Pope	
KY - Ballard, Caldwell, Calloway, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, McCracken, Marshall	
080 Evansville, IN:	
Non-SMSA Counties -	3.5
IL - Edwards, Gallatin, Hamilton, Lawrence, Saline, Wabash, White	
IN - Dubois, Knox, Perry, Pike, Spencer	
KY - Hancock, Hopkins, McLean, Mublenberg, Ohio, Union, Webster	

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Economic Area	Goal (percent)
081 Terre Haute, IN:	
Non-SMSA Counties -	2.5
IL - Clark, Crawford	
IN - Parke	
083 Chicago, IL:	
SMSA Counties:	19.6
1600 Chicago, IL -	
IL - Cook, DuPage, Kane, Lake, McHenry, Will	
3740 Kankakee, IL -	9.1
IL - Kankakee	
Non-SMSA Counties	18.4
IL - Bureau, DeKalb, Grundy, Iroquois, Kendall, LaSalle, Livingston, Putnam	
IN - Jasper, Laporte, Newton, Pulaski, Starke	
084 Champaign - Urbana, IL:	
SMSA Counties:	
1400 Champaign - Urbana - Rantoul, IL -	7.8
IL - Champaign	
Non-SMSA Counties -	4.8
IL - Coles, Cumberland, Douglas, Edgar, Ford, Piatt, Vermilion	
085 Springfield - Decatur, IL:	
SMSA Counties:	
2040 Decatur, IL -	7.6
IL - Macon	
7880 Springfield, IL -	4.5
IL - Mendard, Sangamon	
Non-SMSA Counties	4.0
IL - Cass, Christian, Dewitt, Logan, Morgan, Moultrie, Scott, Shelby	
086 Quincy, IL:	
Non-SMSA Counties	3.1
IL - Adams, Brown, Pike	
MO - Lewis, Marion, Pike, Ralls	
087 Peoria, IL:	
SMSA Counties:	
1040 Bloomington - Normal, IL -	2.5
IL - McLean	
6120 Peoria, IL -	4.4
IL - Peoria, Tazewell, Woodford	
Non-SMSA Counties -	3.3
IL - Fulton, Knox, McDonough, Marshall, Mason, Schuyler, Stark, Warren	

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Economic Area	Goal (percent)
088 Rockford, IL:	
SMSA Counties:	
6880 Rockford, IL - IL - Boone, Winnebago	6.3
Non-SMSA Counties - IL - Lee, Ogle, Stephenson	4.6
098 Dubuque, IA:	
Non-SMSA Counties - IL - JoDaviess IA - Atlamakee, Clayton, Delaware, Jackson, Winnesheik WI - Crawford, Grant, Lafayette	0.5
099 Davenport, Rock Island, Moline, IA - IL:	
SMSA Counties:	
1960 Davenport, Rock Island, Moline, IA - IL - IL - Henry, Rock Island IA - Scott	4.6
Non-SMSA Counties - IL - Carroll, Hancock, Henderson, Mercer, Whiteside IA - Clinton, DesMoines, Henry, Lee, Louisa, Muscatine MO - Clark	3.4
107 St. Louis, MO:	
SMSA Counties:	
7040 St. Louis, MO - IL - IL - Clinton, Madison, Monroe, St. Clair MO - Franklin, Jefferson, St. Charles, St. Louis, St. Louis City	14.7
Non-SMSA Counties - IL - Alexander, Bond, Calhoun, Clay, Effingham, Fayette, Franklin, Greene, Jackson, Jasper, Jefferson, Jersey, Johnson, Macoupin, Marion, Montgomery, Perry, Pulaski, Randolph, Richland, Union, Washington, Wayne, Williamson MO - Bollinger, Butler, Cape Girardeau, Carter, Crawford, Dent, Gasconade, Iron, Lincoln, Madison, Maries, Mississippi, Montgomery, Perry, Phelps, Reynolds, Ripley, St. Francois, St. Genevieve, Scott, Stoddard, Warren, Washington, Wayne	11.4

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the provisions and specifications set forth in its federally assisted contracts, and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Illinois Division of Aeronautics will provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction contract and/or subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. This notification will list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is the entire State of Illinois for the goal set forth in APPENDIX A and the county or counties in which the work is located for the goals set forth in APPENDIX B.

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STANDARD FEDERAL EQUAL EMPLOYMENT
OPPORTUNITY CONSTRUCTION CONTRACT
SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:
   a) "Covered area" means the geographical area described in the solicitation from which this contract resulted;
   b) "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
   c) "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;
   d) "Minority" includes:
      (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
      (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
      (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
      (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000. the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction Contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

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7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a) Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working as such sites or in such facilities.

b) Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c) Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractors may have taken.

d) Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e) Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f) Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreements; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g) Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foreman, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h) Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i) Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship of other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j) Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.

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k) Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m) Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n) Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o) Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction Contractors and suppliers, including circulation of solicitations to minority and female Contractor associations and other business associations.

p) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a Contractor association, joint Contractor-union, Contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specified minority group of women is underutilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

Revised 08-31-83

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy his requirement, Contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

Revised 08-31-83

ANNUAL EEO-1 REPORT TO JOINT REPORTING COMMITTEE AS REQUIRED AT

41 CFR 60-1.7(a)

Any Contractor having a Federal contract of $50,000 or more and 50 or more employees is required to file annual compliance reports on Standard Form 100 (EEO-1) with the Joint Reporting Committee in accordance with the instructions provided with the form. The Contractor will provide a copy of such a report to the contracting agency within 30 days after the award of a contract.

The Contractor shall require its subcontractors to file an SF 100 within 30 days after award of the subcontract if (1) it is not exempt from the provisions of these regulations in accordance with 60-1.5, (2) has 50 or more employees, (3) first tier subcontractor, and (4) has a subcontract amounting to $50,000 or more.

Subcontractors below the first tier which perform construction work at the site of construction shall be required to file such a report if (1) it is not exempt from the provisions of these regulations in accordance with 60-1.5, (2) has 50 or more employees and has a subcontract amounting to $50,000 or more.

The SF 100 is available at the following address:

Joint Reports Committee
EEOC - Survey Division
1801 "L" Street N.W.
Washington, D.C. 20750

Phone (202) 663-4968

DISADVANTAGED BUSINESS POLICY

I. NOTICE

This proposal contains the special provision entitled “Required Disadvantaged Business Participation.” Inclusion of this Special Provision in this contract satisfies the obligations of the Department of Transportation under federal law as implemented by 49 CFR 23 and under the Illinois “Minority and Female Business Enterprise Act.”

II. POLICY

It is public policy that the businesses defined in 49 CFR Part 23 shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with State or Federal funds. Consequently, the requirements of 49 CFR Part 23 apply to this contract.

III. OBLIGATION

The Contractor agrees to ensure that the businesses defined in 49 CFR Part 23 have the maximum opportunity to participate in the performance of this contract. In this regard, the Contractor shall take all necessary and reasonable steps, in accordance with 49 CFR Part 23, to ensure that the said businesses have the maximum opportunity to compete for and perform portions of this contract. The Contractor shall not discriminate on the basis of race, color, national origin, or sex in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

The Contractor shall include the above Policy and Obligation statements of this Special Provision in every subcontract, including procurement of materials and leases of equipment.

IV. DBE/WBE CONTRACTOR FINANCE PROGRAM

On contracts where a loan has been obtained through the DBE/WBE Contractor Finance Program, the Contractor shall cooperate with the Department by making all payments due to the DBE/WBE Contractor by means of a two-payee check payable to the Lender (Bank) and the Borrower (DBE/WBE Contractor).

V. BREACH OF CONTRACT

Failure to carry out the requirements set forth above and in the Special Provision shall constitute a breach of contract and may result in termination of the contract or liquidated damages as provided in the special provision.

(Rev. 9/21/92)

State of Illinois
Department of Transportation

SPECIAL PROVISION
FOR
DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION

I. FEDERAL OBLIGATION: The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR part 26 and listed in the DBE Directory or most recent addendum.

II. CONTRACTOR ASSURANCE: The Contractor makes the following assurance and agrees to include the assurance in each subcontract that the Contractor signs with a subcontractor:

> The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of federally-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

III. OVERALL GOAL SET FOR THE DEPARTMENT: As a requirement of compliance with 49 CFR part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal is 22.7% of all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a good faith effort to achieve this goal. The dollar amount paid to all approved DBE firms performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

IV. CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR: This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined that the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. This determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates that, in the absence of unlawful discrimination, and in an arena of fair and open competition, DBE companies can be expected to perform **16.0%** of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set forth in this Special Provision:

A. The bidder documents that firmly committed DBE participation has been obtained to meet the goal; or

B. The bidder documents that a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

V. DBE LOCATOR REFERENCES: Bidders may consult the DBE Directory as a reference source for DBE companies certified by the Department. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217)785-4611, or by visiting the Department's web site at www.dot.state.il.us.

VI. BIDDING PROCEDURES: Compliance with the bidding procedures of this Special Provision is required prior to the award of the contract and the failure of the as-read low bidder to comply will render the bid nonresponsive.

A. In order to assure the timely award of the contract, the as-read low bidder must submit a Disadvantaged Business Utilization Plan on Department form SBE 2026 within seven (7) working days after the date of letting. To meet the seven (7) day requirement , the bidder may send the Plan by certified mail or delivery service within the seven (7) working day period. If a question arises concerning the mailing date of a Plan, the mailing date will be established by the U.S. Postal Service postmark on the original certified mail receipt from the U.S. Postal Service or the receipt issued by a delivery service. It is the responsibility of the as-read low bidder to ensure that the postmark or receipt date is affixed within the seven (7) working days if the bidder intends to rely upon mailing or delivery to satisfy the submission day requirement. The Plan is to be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217) 785-1524). It is the responsibility of the bidder to obtain confirmation of telefax delivery. The Department will not accept a Utilization Plan if it does not meet the seven (7) day submittal requirement, and the bid will be declared nonresponsive. In the event the bid is declared nonresponsive due to a failure to submit a Plan or failure to comply with the bidding procedures set forth herein, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty, and may deny authorization to bid the project if re-advertised for bids. The Department reserves the right to invite any other bidder to submit a Utilization Plan at any time for award consideration or to extend the time for award.

B. The Utilization Plan shall indicate that the bidder either has obtained sufficient DBE participation commitments to meet the contract goal or has not obtained enough DBE participation commitments in spite of a good faith effort to meet the goal. The Utilization Plan shall further provide the name, telephone number and telefax number of a responsible official of the bidder designated for purposes of notification of plan approval or disapproval under the procedures of this Special Provision.

C. The Utilization Plan shall include a DBE Participation Commitment Statement, Department form SBE 2025, for each DBE proposed for the performance of work to achieve the contract goal. The signatures on these forms must be original signatures. All elements of information indicated on the said form shall be provided, including but not limited to the following:

1. The name and address of each DBE to be used;

2. A description, including pay item numbers, of the commercially useful work to be done by each DBE;

3. The price to be paid to each DBE for the identified work specifically stating the quantity, unit price and total subcontract price for the work to be completed by the DBE. If partial pay items are to be performed by the DBE, indicate the portion of each item, a unit price where appropriate and the subcontract price amount;

4. A commitment statement signed by the bidder and each DBE evidencing availability and intent to perform commercially useful work on the project; and

5. If the bidder is a joint venture comprised of DBE firms and non-DBE firms, the plan must also include a clear identification of the portion of the work to be performed by the DBE partner(s).

D. The contract will not be awarded until the Utilization Plan submitted by the bidder is approved. The Utilization Plan will be approved by the Department if the Plan commits sufficient commercially useful DBE work performance to meet the contract goal. The Utilization Plan will not be approved by the Department if the Plan does not commit sufficient DBE performance to meet the contract goal unless the bidder documents that it made a good faith effort to meet the goal. The good faith procedures of Section VIII of this special provision apply. If the Utilization Plan is not approved because it is deficient in a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no less than a five (5) working day period in order to cure the deficiency.

VII. CALCULATING DBE PARTICIPATION: The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR part 26.55, the provisions of which govern over the summary contained herein.

A. DBE as the Contractor: 100% goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE firm does not count toward the DBE goals.

B. DBE as a joint venture Contractor: 100% goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.

C. DBE as a subcontractor: 100% goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontractor in turn subcontracts to a non-DBE firm does not count toward the DBE goal.

D. DBE as a trucker: 100% goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed and insured by the DBE must be used on the contact. Credit will be given for the full value of all such DBE trucks operated using DBE employed drivers. Goal credit will be limited to the value of the reasonable fee or commission received by the DBE if trucks are leased from a non-DBE company.

E. DBE as a material supplier:

1. 60% goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.

2. 100% goal credit for the cost of materials or supplies obtained from a DBE manufacturer.

3. 100% credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a regular dealer or manufacturer.

VIII. GOOD FAITH EFFORT PROCEDURES: If the bidder cannot obtain sufficient DBE commitments to meet the contract goal, the bidder must document in the Utilization Plan the good faith efforts made in the attempt to meet the goal. This means that the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which could reasonably be expected to obtain sufficient DBE participation. The Department will consider the quality, quantity and intensity of the kinds of efforts that the bidder has made. Mere *pro forma* efforts are not good faith efforts; rather, the bidder is expected to have taken those efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal

A. The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases, and will be considered by the Department.

1. Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.

2. Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.

3. Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

4. (a) Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.

(b) A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Prime contractors are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable.

5. Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the contractor's efforts to meet the project goal.

6. Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.

7. Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.

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

B. If the Department determines that the Contractor has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided that it is otherwise eligible for award. If the Department determines that a good faith effort has not been made, the Department will notify the bidder of that preliminary determination by contacting the responsible company official designated in the Utilization Plan. The preliminary determination shall include a statement of reasons why good faith efforts have not been found, and may include additional good faith efforts that the bidder could take. The notification will designate a five (5) working day period during which the bidder shall take additional efforts. The bidder is not limited by a statement of additional efforts, but may take other action beyond any stated additional efforts in order to obtain additional DBE commitments. The bidder shall submit an amended Utilization Plan if additional DBE commitments to meet the contract goal are secured. If additional DBE commitments sufficient to meet the contract goal are not secured, the bidder shall report the final good faith efforts made in the time allotted. All additional efforts taken by the bidder will be considered as part of the bidder's good faith efforts. If the bidder is not able to meet the goal after taking additional efforts, the Department will make a pre-final determination of the good faith efforts of the bidder and will notify the designated responsible company official of the reasons for an adverse determination.

C. The bidder may request administrative reconsideration of a pre-final determination adverse to the bidder within the five (5) working days after the notification date of the determination by delivering the request to the Department of Transportation, Division of Aeronautics, 1 Langhorne Bond Drive, Capital Airport, Springfield, IL 62707-8415 (Telefax: 217-785-4533). Deposit of the request in the United States mail on or before the fifth business day shall not be deemed delivery. The pre-final determination shall become final if a request is not made and delivered. A request may provide additional written documentation and/or argument concerning the issue of whether an adequate good faith effort was made to meet the contract goal. In addition, the request shall be considered a consent by the bidder to extend the time for award. The request will be forwarded to the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person in order to consider all issues of whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten (10) working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid nonresponsive.

IX. CONTRACT COMPLIANCE: Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal.

A. No amendment to the Utilization Plan may be made without prior written approval from the Division of Aeronautics. All requests for amendment to the Utilization Plan shall be submitted to the Department of Transportation, Division of Aeronautics, 1 Langhorne Bond Drive, Capital Airport, Springfield, IL 62707-8415. Telephone number (217) 785-8514. Telefax number (217) 785-4533.

B. All work indicated for performance by an approved DBE shall be performed, managed and supervised by the DBE executing the Participation Statement. The Contractor shall not terminate for convenience a DBE listed in the Utilization Plan and then perform the work of the terminated DBE with its own forces, those of an affiliate or those of another subcontractor, whether DBE or not, without first obtaining the written consent of the Bureau of Small Business Enterprises to amend the Utilization Plan. If a DBE listed in the Utilization Plan is terminated for reasons other than convenience, or fails to complete its work on the contract for any reason, the Contractor shall make good faith efforts to find another DBE to substitute for the terminated DBE. The good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the DBE that was terminated, but only to the extent needed to meet the contract goal or the amended contract goal. The Contractor shall notify the Division of Aeronautics of any termination for reasons other than convenience, and shall obtain approval for inclusion of the substitute DBE in the Utilization Plan. If good faith efforts following a termination of a DBE for cause are not successful, the Contractor shall contact the Division and provide a full accounting of the efforts undertaken to obtain substitute DBE participation. The Division will evaluate the good faith efforts in light of all circumstances surrounding the performance status of the contract, and determine whether the contract goal should be amended.

C. The Contractor shall maintain a record of payments for work performed to the DBE participants. The records shall be made available to the Department for inspection upon request. After the performance of the final item of work or delivery of material by a DBE and final payment therefor to the DBE by the Contractor, but not later than thirty (30) calendar days after payment has been made by the Department to the Contractor for such work or material without regard to any retainage withheld by the Department, the Contractor shall submit a DBE Payment Report on Department form SBE 2115 to the Division's Chief Engineer. If full and final payment has not been made to the DBE, the Report shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes that the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Plan, the Department will deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages.

D. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

Certification of Nonsegregated Facilities - as Required by 41 CFR 60-1.8

(Applicable to (1) contracts, (2) subcontracts, and (3) agreements with applicants who are themselves performing federally assisted construction contracts, exceeding $10,000.00 which are not exempt from the provisions of the Equal Opportunity clause).

By the submission of this bid, the bidder, offeror, applicant, or subcontractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments and that that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. He certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The bidder, offeror, applicant, or subcontractor agrees that a breach of his certification is a violation of the Equal opportunity clause in this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. He further agrees that (except where he has obtained identical certifications from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000.00 which are not exempt from the provisions of the Equal Opportunity clause; that he will retain such certifications in his files and that he will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods):

NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR CERTIFICATIONS OF NONSEGREGATED FACILITIES

A certification of Nonsegregated Facilities must be submitted prior to the award of a subcontract exceeding $10,000.00 which is not exempt from the provisions of the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C 1001.

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS
Instructions for Certification

1. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.
4. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction" "debarred" "suspended" "ineligible" "lower tier covered transaction" "participant" "person" "primary covered transaction" "principal" "proposal" and "voluntarily excluded" as used in this clause have the meaning set out in the Definitions and Coverage sections of the rules implementing Executive Order 12540. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
6. The prospective primary participant agrees by submitting this proposal that should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction unless authorized by the department or agency entering into this transaction.
7. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Transaction", provided by the department or agency entering into this covered transaction without modification in all lower covered transactions and in all solicitations for lower covered transactions.
8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to check the Nonprocurement List (Tel. #).
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
10. Except for transactions authorized under paragraph 8 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

Certification Regarding Debarment, Suspension, and
Other Responsibility Matters - Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief that it and its principals:

   a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by an Federal department or agency;

   b. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public (Federal, State or Local) transaction or contract under a public transaction: violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction or destruction of records, making false statements, or receiving stolen property;

   c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

   d. Have not within a three-period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

CERTIFICATION REGARDING LOBBYING (Applicable to contracts in excess of $100,000):

Certification for Contracts, Grants, Loans and Cooperative Agreements.

The undersigned bidder certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have paid or will be paid, by or behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an Officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, “Disclosure Form to Report Lobbying”, in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

WORKERS' COMPENSATION INSURANCE

Prior to the execution of his construction contract by the Illinois Department of Transportation, Division of Aeronautics, hereinafter referred to as "Division", the Contractor shall furnish to the Division certificates of insurance covering Workers' Compensation, or satisfactory evidence that this liability is otherwise taken care of in accordance with Section 4.(a) of the "Workers' Compensation Act of the State of Illinois" as amended.

Such insurance, or other means of protection as herein provided, shall be kept in force until all work to be performed under the terms of the contract has been completed and accepted in accordance with the specifications, and it is hereby understood and agreed that the maintenance of such insurance or other protection, until acceptance of the work by the Division is a part of the contract. Failure to maintain such insurance, cancellation by the Industrial Commission of its approval of such other means of protection as might have been elected, or any other act which results in lack of protection under the said "Workers' Compensation Act" may be considered as a breach of the contract.

SPECIAL PROVISION FOR DOMESTIC SOURCE FOR STEEL

Control of Materials: All steel products, as defined by the Illinois Steel Products Procurement Act, incorporated into this project shall be manufactured or produced in the United States and, in addition, shall be domestically fabricated. The Contractor shall obtain from the steel producer and/or fabricator, in addition to the mill analysis, a certification that all steel products meet these domestic source requirements.

CLAUSE TO BE INCLUDED IN ALL SOLICITATIONS,
CONTRACTS, AND SUBCONTRACTS RESULTING FROM PROJECTS FUNDED UNDER THE AIP

The Contractor or subcontractor, by submission of an offer and/or execution of a contract, certifies that it:

a. is not owned or controlled by one or more citizens or nationals of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR);

b. has not knowingly entered into any contract or subcontract for this project with a Contractor that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list.

c. has not procured any product nor subcontracted for the supply of any product for use on the project that is produced in a foreign country on said list.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to a Contractor or subcontractor who is unable to certify to the above. If the Contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on the said list for use on the project, the Federal Aviation Administration may direct, through the sponsor, cancellation of the contract at no cost to the Government.

Further, the Contractor agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in each contract and in all lower tier subcontracts. The Contractor may rely upon the certification of a prospective subcontractor unless it has knowledge that the certification is erroneous.

The Contractor shall provide immediate written notice to the sponsor if the Contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The subcontractor agrees to provide immediate written notice to the Contractor, if at any time it learns that its certification was erroneous by reason of changed circumstances.

This certification is a material representation of fact upon which reliance was placed when making the award. If it is later determined that the Contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration may direct, through this sponsor, cancellation of the contract or subcontract for default at no cost to the Government.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a Contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

MINIMUM WAGES FOR FEDERAL AND FEDERALLY ASSISTED CONSTRUCTION CONTRACTS

This project is funded, in part, with Federal-aid funds and, as such, is subject to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Sta. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in a 29 CFR Part 1, Appendix A, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act and pursuant to the provisions of 29 CFR Part 1. The prevailing rates and fringe benefits shown in the General Wage Determination Decisions issued by the U.S. Department of Labor shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

General Wage Determination Decisions, modifications and supersedes decisions thereto are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable DBRA Federal prevailing wage law and 29 CFR Part 5. The wage rates and fringe benefits contained in the General Wage Determination Decision shall be the minimum paid by contractors and subcontractors to laborers and mechanics.

NOTICE

The most current **General Wage Determination Decisions** (wage rates) are available on the IDOT web site. They are located on the Letting and Bidding page at http://www.dot.state.il.us/desenv/delett.html.

In addition, ten (10) days prior to the letting, the applicable Federal wage rates will be e-mailed to subscribers. It is recommended that all contractors subscribe to the Federal Wage Rates List or the Contractor's Packet through IDOT's subscription service.

PLEASE NOTE: if you have already subscribed to the Contractor's Packet you will automatically receive the Federal Wage Rates.

The instructions for subscribing are at http://www.dot.state.il.us/desenv/subsc.html.

If you have any questions concerning the wage rates, please contact IDOT's Chief Contract Official at 217-782-7806.

SECTION III

ST. LOUIS DOWNTOWN AIRPORT
CAHOKIA, ILLINOIS

CONSTRUCT RUNWAY 12L/30R
EXTENSION AND TAXIWAY B7

ILLINOIS PROJECT NO.: CPS-3665
A.I.P. PROJECT NO.: 3-17-0039-B18

Prepared By:

Hanson Professional Services Inc.

MARCH 30, 2007

Revised 12/01/2008

RECURRING SPECIAL PROVISIONS

The following RECURRING SPECIAL PROVISIONS indicated by an "X" are Applicable to this contract and are included by reference:

SUPPLEMENTAL SPECIFICATIONS

The following SUPPLEMENTAL SPECIFICATIONS are Applicable to this contract and are included by reference:

INDEX

FOREWORD

These Special Provisions, together with applicable Standard Specifications, Rules and Regulations, Contract Requirements for Airport Improvement Projects, Payroll Requirements, and Minimum Wage Rates, which are hereto attached or which by reference are herein incorporated, cover the requirements of the State of Illinois, Department of Transportation (IDOT), Division of Aeronautics (Division) for the following improvement project at the St. Louis Downtown Airport (Airport), Cahokia, Illinois including the following.

SCOPE OF WORK

This project shall consist of the construction of a 1,500-ft extension to Runway 12L/30R and proposed cross-over Taxiway B7. These improvements will be constructed of 6 in. of Portland Cement Concrete (PCC), 4-in. crushed aggregate base. Also included is a crossing of Goose Lake Ditch. A construction platform consisting of separation fabric and 6 in. of oversize aggregate will be constructed to expedite the project. Included in this project is the installation of underground electric duct and cable, installation of medium-intensity taxiway and runway base-mounted lights, taxiway guidance sign installation and associated drainage, earthwork, and landscaping. Additive Alternate Number 1 includes the installation of two L-806 supplemental lighted wind cones on Runway 12L-30R with associated cabling and vault work.

GOVERNING SPECIFICATIONS AND RULES AND REGULATIONS

The Standard Specifications for Construction of Airport, Illinois Department of Transportation, Division of Aeronautics, adopted January, 1985 and the Supplemental Specifications and Recurring Special Provisions, adopted July 1, 2004, and the Interim Revisions to the Supplemental Specifications and Recurring Special Provisions, adopted May 11, 2007 shall govern the project, except as otherwise revised or noted in these Special Provisions. All references to IDOT Specifications refer to Standard Specifications for Road and Bridge Construction, Illinois Department of Transportation, adopted January 1, 2007, as revised. In the event of inconsistencies between the Standard Specifications and the Special Provisions, the Special Provisions shall govern.

DIVISION I
SECTION 30
CONTROL OF WORK

30-06 CONSTRUCTION LAYOUT. Delete this entire section and add the following:

"Construction Layout

The Contractor will be required to furnish and place all construction layout for this project. The Resident Engineer will establish the exact location of any and all taxi guidance signs. The locations of the proposed taxi guidance signs are shown on the

Construction Plans, but the resolution of any discrepancy or clarification will be the responsibility of the Resident Engineer."

30-08 AUTHORITY AND DUTIES OF THE RESIDENT ENGINEER. Revise this section as follows:

"As the direct representative of the Owner, the Resident Engineer has immediate charge of inspecting and monitoring the construction project. The Resident Engineer is authorized to inspect and/or perform tests to all or any part of the work and to the materials or manufacturer of materials to be used. The Resident Engineer is not authorized to revoke, alter, or waive any provision to the contract. The Resident Engineer is not authorized to issue instructions contrary to the Plans and Specifications. The Resident Engineer is not authorized to direct or supervise the Contractor or his Subcontractors.

The Resident Engineer is authorized to notify the Contractor, or his representative, of any failure of the work or materials to conform to the requirements of the contract documents, to recommend to the Engineer or Owner that nonconforming materials or work be rejected, and to recommend to the Engineer or Owner suspension of any work in question until the Engineer can make a decision on its acceptability."

30-09 DUTIES OF THE INSPECTOR. Revise this section to read as follows:

"The Resident Engineer and his staff will be authorized to inspect all work being performed and materials being incorporated into the project. Such observation may extend to all or any part of the work and to the preparation, fabrication, or manufacture of materials to be used. The Resident Engineer and his staff will not be authorized to alter or waiver the provisions of the contract, nor will they be authorized to issue instructions contrary to the Plans and Specifications or to direct the Contractor's work."

30-10 INSPECTION OF THE WORK. Revise the third paragraph to read as follows:

"Any work performed or materials incorporated without inspection by an authorized representative of the Engineer may be ordered removed and replaced by the Engineer at the Contractor's own expense.

If upon delivery and incorporation of any materials the Contractor has failed to provide the necessary submittals, as required by Sections 30-18, 40-01, 40-03, and 40-11 of the Standard Specifications, Supplemental Specifications, and Special Provisions, the Pay Item will not be included on the Contractor Progress Payment Report until such submittals have been furnished."

SECTION 50
LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

50-10 BARRICADES, WARNING SIGNS, AND HAZARD MARKINGS. Add the following paragraphs to this section:

"The Contractor will be responsible for placing barricades, as directed by the Resident Engineer. It will be the Contractor's responsibility to furnish and maintain the barricades, equipped with red, steady-burning, or flashing lights throughout the duration of this project. All barricades will be weighted to prevent them from blowing over. If necessary to avoid low-wing aircraft, the barricades will be placed on the ground. At the close of the construction day, the Contractor will remove all barricades from the taxiways. All open trenches must be backfilled, and all equipment must be moved to the equipment parking area before the Contractor can open the taxiway."

50-12 PROTECTION AND RESTORATION OF PROPERTY. Add the following paragraphs to this section:

"The Contractor shall take special precautions during construction so as not to damage the existing roads, parking lots, runways, aprons, taxiways, buildings, and other existing improvements. Any such existing improvements damaged by the Contractor during construction shall be repaired or replaced by him at his own expense.

The Contractor shall take special care when working in the vicinity of existing airport lighting systems so as not to damage them. Should the Contractor damage any of the lighting systems, he shall immediately repair or replace them and make any necessary repairs to place them in working order. The cost of equipment and making the repairs will be the responsibility of the Contractor. If during the course of construction it is necessary to interrupt any light circuits, temporary cables shall be installed, as needed, to make the circuit operational.

Active areas shall be kept broom clean at all times. The Contractor shall maintain the premises in reasonably clean condition, and shall not allow any sizable accumulation of rubbish on the premises. He shall leave the premises in broom clean condition upon completion of the project. The Contractor shall take every precaution against fire."

SCHEDULING OF OPERATIONS

The Contractor will be required to submit a Project Work Schedule to the State of Illinois, Division and to the Resident Engineer showing proposed sequences of work.

In the event that other construction projects are in progress at the Airport at the same time as this project, the Contractor will be required to cooperate with all other Contractors and the Airport Director in the coordination of the work.

PROPOSED HAUL ROUTE

The Contractor will be allowed to use existing City roads as a portion of his proposed haul route. It will be the Contractor's responsibility to walk the proposed haul route with the Resident Engineer and identify all existing areas of questionable pavement. These areas will be avoided, if possible, by the Contractor during his hauling operations. The Contractor will not be required to repair these areas, but all other areas of existing pavement that are damaged will be the responsibility of the Contractor to repair.

EMPLOYEE PARKING

The Contractor's employees will not be allowed to use the existing Airport auto parking lot in which to park their personal vehicles. The proposed employee parking area is shown on the Construction Plans. No personal vehicles will be allowed onto the proposed construction site.

EQUIPMENT PARKING AND MATERIAL STORAGE

The Contractor will be allowed to park his equipment and store his material in the designated equipment parking and material storage area as shown on the Construction Plans.

AIRPORT SECURITY NOTES

Airport security will be maintained at all times. The Contractor will access the proposed job site through an existing gate on the east end of the proposed job site as shown on the Construction Plans. The Contractor will be required to provide a security guard if the gate is to remain open during the day for continuous hauling operations. At all other times, the gate is to remain closed and locked.

VEHICULAR MOVEMENT ON THE AIR SIDE NOTES

All ground movements on the Airport is tower-controlled. The ground control frequency is 121.80 MHz. The Contractor will be required to provide his crews with a radio capable of communication with ground control.

All Contractor personnel that will be using the airport radio will receive training from Airport personnel in the correct procedures and language when using an airport radio. Only these trained personnel will be allowed to talk to ground control.

All vehicular movements through a controlled area will be upon approval of ground control. Any vehicle that does not have an airport radio will be escorted through a controlled area by a vehicle that does have an airport radio. All vehicles will immediately obey all commands from ground control.

STAGING/COORDINATION NOTES

All runway closures will be coordinated with the Airport personnel. The Contractor will coordinate all closures at least 24 hours in advance of the closure. This will allow the Airport personnel to contact the control tower and issue required Notices to Airmen (NOTAMs). The day of the closure, the Contractor will not close the runway until the Airport personnel have been contacted and they verify everything has been completed and the runway can be closed.

All navaids associated with the runway being closed will be turned off and will remain off until the runway is re-opened.

The Contractor will close a taxiway by placing barricades across the taxiway at a spacing of 8 ft. The barricades will be weighted to insure they will not be blown over. If necessary, the barricades will be placed on the ground to insure a low-wing aircraft will not strike them. All barricades will be placed at least 85 ft from the crossing taxiway centerline.

All taxiway closures will be coordinated with the Airport personnel.

SITE INSPECTION

The Contractor shall be responsible for an on-site inspection prior to submitting a bid on this project. Upon receipt of a bid, it shall be assumed that the Contractor is fully familiar with the construction site.

ITEM AS107408
L-806 WIND CONE – 8' LIGHTED
(Additive Alternate No. 1)

DESCRIPTION

107-1.1. Revise this section to read as follows:

"Item AS107408 shall consist of furnishing and installing an L-806 Supplemental Wind Cone at each location shown on the Plans and in accordance with these Special Provisions. The work shall include the furnishing and installation of a support for mounting the wind cone and a concrete foundation. This item shall include wind cone manufacturer's cable, connections, splice cans, series circuit transformer, conduit and conduit fittings, lamps, ground rod and ground connection, and all associated equipment, materials, labor, tools, testing, and all incidentals necessary to place each wind cone in operation as a completed unit to the satisfaction of the Engineer."

EQUIPMENT AND MATERIALS

107-2.2 WIND CONES.

(a) Delete this section.

(b) Revise this section to read as follows:

"Wind cones shall be manufactured to Federal Aviation Administration (FAA) Specification AC 150/5345-27D (or current edition in force) and shall be FAA-approved (ETL-Certified). Wind cone shall be a Type L-806, Style I externally lighted, Size 1 (18 in. by 8 ft) orange nylon windsock, 6.6 Amp series circuit power, mounted on a frangible base pole. Pole and support structure shall be factory-painted "Aviation Orange". Wind cone shall be equipped with an L-810 obstruction light mounted on the top of the mast. Overall height of wind cone and support assembly shall not exceed 10 ft. Wind cone lighting shall provide constant-brightness series circuit power adapter suitable for operation on a three step (4.8 Amp, 5.5 Amp, and 6.6 Amp) series circuit. Wind cone shall be Hali-Brite Inc. (P. O. Box 10, 925 First Street SW, Crosby, Minnesota, 56441, Phone: 800-553-6269 or 218-546-7473), Part Number L806-S1-EX-66A-ON-3, or approved equal. Note: The specified wind cone uses LED (Light Emitting Diode) type lamps and requires a 300 Watt L-830-10 series isolation transformer. The constant current regulator powering the series circuit for the wind cones has been sized for the respective runway lighting loads and the specified wind cones. In the event that a different wind cone is proposed, the Contractor shall be responsible to ensure that the respective constant current regulator is properly sized for the total series circuit load. Where a different wind cone is proposed that requires loads that exceed the rating of the respective constant current regulator, the Contractor shall be responsible for all

adjustments including providing a larger constant current regulator and all associated circuit breakers, conduits, wiring and vault work as applicable to accommodate the respective series circuit load with the wind cones. Contractor shall confirm part number and special options with the respective manufacturer for compliance with these Special Provisions. Include sufficient slack cable with the wind cone to allow connection to the respective series transformer in an adjacent splice can. Include manufacturer's specified anchor bolts."

107-2.3 WIRE. Revise this section to read as follows:

"Cable and wiring associated with the wind cone installations shall be as detailed on the Plans, as specified herein, and shall also comply with Item 108.

Cable in unit duct from the point of connection to the respective power source to the point of connection to the respective wind cone installation is not included with this item, and shall be paid for separately under Item AS108158, 1/C #8 5KV UG Cable in UD."

107-2.4 CONDUIT. Revise this section at follows:

"Rigid Steel Conduit and fittings shall be hot-dipped, galvanized, UL-listed, and produced in accordance with UL Standard 6 – Rigid Metal Conduit and ANSI C80.1 – Rigid Steel Conduit, Zinc Coated. Couplings, connectors, and fittings for rigid steel conduit shall be threaded, galvanized steel or galvanized, malleable iron, specifically designed and manufactured for the purpose. Fittings shall conform to ANSI C80.4 – Fittings Rigid Metal Conduit and EMT and UL 514B – Conduit, Tubing, and Cable Fittings. Set screw type fittings are not acceptable.

Conduit for grounding electrode conductors shall be Schedule 40 PVC conduit, and shall comply with Item 110 and the following: Conduit shall be Schedule 40 PVC, 90°C, UL-rated, or approved equal. Material shall comply with NEMA Specification TC-2 (Conduit), (Fittings UL-514), and UL-651 (Standard for rigid, non-metallic conduit)."

107-2.5 CONCRETE. Add the following:

"Foundation for the L-806 wind cone shall be 24-in. diameter by 60-in. deep (minimum) as detailed on the Plans. Coordinate the installation of a 2-in. GRSC/elbow into the foundation for the power wiring. Coordinate the installation of a 1-in. Schedule 40 PVC conduit/elbow into the foundation for the grounding electrode conductor. Include reinforcing steel, as detailed on the Plans. Steel used to manufacture reinforcement materials shall be 100 percent domestic steel. Coordinate installation of the wind cone foundation with the concrete pad that surrounds the foundation and associated L-867 splice can."

107-2.7 SPLICE CANS. Splice cans shall conform to the requirements of FAA AC 150/5345-42D for Type L-867, Class IA, Size B (12-in. nominal diameter), and 24 in. deep. Splice cans shall have galvanized steel covers, 3/8-in. minimum thick, with stainless steel bolts. Splice cans

shall include internal and external ground lugs. A splice can shall be provided to house the series circuit isolation transformer and cable connections, and shall be located adjacent to the wind cone foundation. Larger size splice cans shall be provided, where necessary, to accommodate the respective series circuit isolation transformer(s) and cable connections. This splice can shall be bonded to the respective ground rod located at the wind cone foundation with a #6 AWG bare copper conductor. **Splice cans shall not be used as a base for the wind cone.**

107-2.8 SERIES CIRCUIT TRANSFORMER. Series circuit isolation transformers for the wind cones shall be manufactured to FAA Specification AC 150/5345-47B (or current edition in force), and shall be FAA-approved (ETL-Certified). Series circuit transformer shall be properly sized for the respective wind cone lighting loads, and shall be as recommended by the respective wind cone manufacturer. Series circuit isolation transformer for the specified Hali-Brite Inc. L-806 lighted wind cone (Part Number L806-S1-EX-66A-ON-3), shall be FAA Type L-830-10, 300-Watt, 6.6 Amp primary, 6.6 Amp secondary series isolation transformer. Confirm proper transformer selection and sizing with the respective wind cone manufacturer.

107-2.9 GROUND RODS. Ground rods shall be 3/4-in. diameter, 10 ft long, UL-listed, copper-clad with 10-mil. minimum copper coating. Steel used to manufacture ground rods shall be 100 percent domestic steel.

CONSTRUCTION METHODS

107-3.1 INSTALLATION. Add the following:

> "The support pole shall be installed on a concrete foundation, as detailed on the Plans. The Contractor shall furnish and install all electrical materials necessary for complete and operational installation of each wind cone, as detailed herein and in accordance with the manufacturer's instructions. The complete installation and wiring shall be done in a neat, workmanlike manner. All electrical work shall comply with the requirements of NFPA 70 - National Electrical Code (NEC), most current issue in force. Wind cones shall be installed in conformance with the respective manufacturer's directions and recommendations for the respective application. Any installations which void the UL listing, ETL listing (or other third party listing), and/or the manufacturer's warranty of a device will not be permitted.
>
> The Contractor shall keep a copy of the latest NEC in force on site at all times during construction for use as a reference.
>
> The Contractor should examine the proposed site to evaluate the complexity of the work.
>
> Contractor shall coordinate work and any power outages to airfield lighting systems, buildings or facilities located on the Airport with the Airport Director. Where FAA facilities are affected, the Contractor shall coordinate work and any power outages with the Airport Director and the respective FAA personnel. Any shutdown of existing systems shall be scheduled with and approved by the Airport Director prior to shutdown.

Once shut down, the circuits shall be labeled as such to prevent accidental energizing of the respective circuits. All personnel shall follow OSHA 29 CFR Part 1910 Occupational Safety and Health Standards for electrical safety and lockout/tagout procedures, including, but not limited to, 29 CFR Section 1910.147 The Control of Hazardous Energy (lockout/tagout).

The Contractor shall be responsible for furnishing and setting all anchor bolts required to install his equipment.

Where concrete mounting pads, foundations, or piers are required for equipment mounting, the Contractor shall furnish all concreting and form work necessary to complete the installation. Concrete shall conform to Item 610 Structural Portland Cement Concrete of the Standard Specifications."

107-3.2. COUNTERWEIGHT. Delete this section.

107-3.3 ELECTRICAL CONNECTION. Add the following:

"Splices in conductors will be allowed only within the specified junction boxes or splice cans. Spliced connections of the wind cone conductors to the series circuit isolation transformer shall be installed in an L-867 base/splice can, as detailed on the Plans and in conformance with Item 108."

107-3.4 BOOSTER TRANSFORMER. Delete this section.

107-3.5 GROUND CONNECTION AND GROUND ROD. Revise this section as follows:

"The Contractor shall furnish and install a ground rod, grounding electrode conductor cable, ground clamps/connectors, and exothermic weld connections for grounding the wind cone pipe support near the base. The ground rod shall be 3/4- in. diameter by 10 ft long, UL-listed, copper-clad with 10-mil. minimum copper coating. The ground rod shall be driven into the ground adjacent to the concrete foundation so that the top of the rod is at least 30-in. below grade. Buried or concealed ground systems shall be observed by the Resident Engineer before backfilling or covering. The grounding electrode conductor shall consist of No. 6 AWG bare-stranded copper wire or larger. All connections to ground rods and/or buried grounding electrode conductors shall be made with exothermic weld-type connectors, Cadweld by Erico Products, Inc., Solon, Ohio, (Phone: 800-248-9353), Thermoweld by Continental Industries, Inc., Tulsa, Oklahoma (Phone: 918-663-1440) or Ultraweld by Harger, Grayslake, Illinois (Phone: 800-842-7437). Exothermic weld connections shall be installed in conformance with the respective manufacturer's directions using molds as required for each respective application. Bolted connections will not be permitted at ground rods. The other end of the grounding electrode conductor shall be securely attached to the base of the wind cone pipe support with a UL-listed grounding connector or pipe clamp suitable for the respective application. Metallic surfaces to be joined shall be prepared by the removal of all non-conductive material (including paint) per 2008 NEC, Article 250-12. All bolted or mechanical connections

shall be coated with a corrosion preventative compound before joining, Sanchem Inc. "NO-OX-ID "A-Special" compound, Burndy Penetrox E, or equal. Coordinate the installation of a 1-in. Schedule 40 PVC conduit into the wind cone foundation to accommodate the grounding electrode conductor. The L-867 splice can located adjacent to the wind cone foundation shall also be bonded to the ground rod with a No. 6 AWG bare-stranded copper wire. The resistance to ground shall not exceed 25 Ohms. Contractor shall test the made electrode ground rod installation with an instrument specifically designed for testing ground field systems. If ground resistance exceeds 25 Ohms, contact the Resident Engineer for further direction. Copies of ground rod test results shall be furnished to the Resident Engineer."

107-3.7 LAMPS. Revise this section as follows:

"The Contractor shall furnish and install all lamps required as per manufacturer's recommendation."

107-3.8 CHAIN AND PADLOCK. Delete this section.

107-3.10 RESTORATION. All turf areas disturbed by the installation of the wind cone and associated work shall be restored, graded, and seeded to establish a stand of grass to the satisfaction of the Engineer and will be considered as incidental to the installation of the wind cone.

107-3.11 INSTRUCTION OF AIRPORT STAFF. Contractor shall provide instruction to airport staff in regard to the operation and maintenance of the wind cones and associated transformers and series plug cutouts. Contractor shall demonstrate operating procedures, lamp changing procedures, and items requiring maintenance. Contractor shall furnish operation and maintenance manuals for wind cones and associated equipment.

METHOD OF MEASUREMENT

107-4.1. Add the following:

"L-867 splice cans associated with the wind cone installations shall be incidental to Item AS107408 L-806 Wind Cone 8' Lighted, and no additional compensation will be made."

BASIS OF PAYMENT

107-5.1. Payment will be made at the contract unit price per each unit installed and accepted by the Engineer. This price shall be full compensation for furnishing all materials, preparation, assembly, and installation of these materials; and for all labor, equipment, tools, and incidentals necessary to complete each respective item.

Payment will be made under:

Item AS107408 L-806 Wind Cone-8' Lighted – per each

ITEM 108
INSTALLATION OF UNDERGROUND CABLE FOR AIRPORTS

DESCRIPTION

108-1.1. Add the following to this section:

"This Item of work shall consist of the installation (plowing, trenching, or directional boring) of cable for lighting circuits on the runways and taxiways and the associated homeruns at the locations shown on the Plans and in accordance with these Specifications. This Item shall include cable-in-unit duct where noted on the Plans and specified herein."

EQUIPMENT AND MATERIALS

108-2.1 GENERAL. Add the following to paragraph (b):

"All cable shall be UL-listed as suitable for installed application."

108-2.2 CABLE. Revise this section to read as follows:

"L-824 Cable – L-824 cable shall be FAA L-824, Type C and shall conform to the requirements of FAA Advisory Circular 150/5345-7E, (or latest edition) "SPECIFICATIONS FOR L-824 UNDERGROUND ELECTRICAL CABLE FOR AIRPORT LIGHTING CIRCUITS". L-824 cable shall be FAA approved and listed in the current AC150/5345-53C, AIRPORT LIGHTING EQUIPMENT CERTIFICATION PROGRAM Appendix 3 Addendum. Circuits for use with constant current regulator outputs (runway or taxiway lighting circuits) shall use 5000-Volt rated cable.

XLP-USE Wire – Cable shall comply with UL Standard 44, UL Standard 854, and Federal Specification A-A-59544. Conductor shall be concentric, strand-soft copper, conforming to ASTM B8 and Underwriters' Laboratories Standard UL44 for Rubber Insulated Wires. Insulation shall be rated for 600-Volts. Insulation shall be cross-linked polyethylene conforming to Underwriter's Laboratories Requirements for Type USE-2 insulation. Cable shall be UL-listed and marked USE-2. Cable shall be Service Wire Company Type USE-2, or approved equal.

Item AR108158, 1/C #8 5KV UG Cable in UD shall be one conductor No. 8, 5000-Volt, FAA L-824, Type C, stranded, in unit duct (3/4 in.).

Item AS108158, 1/C #8 5KV UG Cable in UD shall be one conductor No. 8, 5000-Volt, FAA L-824, Type C, stranded, in unit duct (3/4 in.).

Item AR108652, 3/C #2 600 V UG Cable In UD shall consist of 3-1/C #2 AWG, XLP-USE, 600-Volt cable in unit duct (1.25-in. or sized larger, as required per the National Electrical Code (NEC)). This cable shall be used with FAA Runway End Identification Light (REIL) relocation on Runway 30R. Conductor insulation shall be color-coded, Phase A-Black, Phase B-Red, and Neutral-White.

Item AR108806, 6 Pair Control Cable will need to be installed with the REIL relocation on Runway 30R. Cable shall be compatible with the existing control cable used with the FAA REILS located on Runway 30R. Cable shall comply with ANSI/ICEA S-84-608-2002 and RUS 7 CFR 1755.390 (PE-39). Cable shall be 6-pair, #19 AWG solid-annealed copper, shielded communications cable, gopher-resistant, jelly-filled to resist moisture entry and to inhibit corrosion, suitable for direct burial and for use in duct, Superior Essex CASPIC-F Series, Part Number 04-026-94, or approved equal.

Cable between the REIL units shall be 3-1/C #8 AWG XLP-USE, 600-Volt cable with 6-pair, #19 AWG control cable. #6 AWG bare solid copper counterpoise shall be installed above the power control cables as detailed on the Plans. This cable will be considered an Incidental Item to the relocation of the REIL units, and no additional compensation will be allowed."

108-2.3 BARE COPPER WIRE (COUNTERPOISE). Add the following to this section:

"Item AR108706, 1/C #6 Counterpoise will need to be installed with the power and control cables associated with the FAA REIL relocation on Runway 30R. Counterpoise conductor shall be #6 AWG bare solid copper conductor. Counterpoise shall be bonded to ground rods at approximately 90-ft intervals. The spacing of ground rods must vary by 10% to 20% to prevent resonance. Locate ground rods at approximately 6 ft on either side of the trench. Ground rods shall be 3/4-in. diameter, 10 ft long, UL-listed, copper-clad with 10-mil minimum copper coating. All connections to ground rods and/or counterpoise conductor shall be made with one shot, exothermic-weld type connectors, Cadweld by Erico Products, Inc., Solon, Ohio, (Phone: 1-800-248-9353), Thermoweld by Continental Industries, Inc., Tulsa, Oklahoma, (Phone: 918-663-1440), or Ultraweld by Harger, Grayslake, Illinois (Phone 1-800-842-7437). Ground rods and exothermic-weld connections shall be incidental to this Pay Item, and no additional compensation will be allowed."

108-2.4 CABLE CONNECTIONS. Add the following to this section:

"All below grade splices shall be installed in splice cans, handholes, or manholes. Splice cans shall be L-867, Class I, Size B (12 in. diameter), 24 in. deep, with 3/4 in. thick galvanized steel cover and stainless steel bolts. Larger size splice cans shall be provided, as applicable, for specific equipment applications or manufacturer's recommendations and/or where detailed on the Plans. Splice cans located in areas subject to heavy aircraft or vehicle loading shall be L-868 type. The Engineer shall approve all splice locations before work commences. The furnishing and installing of splice cans for new homerun

cables shall be incidental to the respective cable Pay Item, and no additional compensation will be allowed."

108-2.6 UNIT DUCT. Standard sizes of smooth wall, polyethylene duct shall conform to the dimensional requirements specified below:

Nominal Duct Size	Nominal Inside Diameter	Nominal Standard Wall	Nominal Outside Diameter*
¾ in.	0.910 in.	0.070 in.	1.050 in.
1 in.	1.145 in.	0.085 in.	1.315 in.
1-1/4 in.	1.440 in.	0.110 in.	1.660 in.
1-1/2 in.	1.650 in.	0.125 in.	1.900 in.
1-1/2 in.	2.065 in.	0.155 in.	2.375 in.
2-1/2 in.	2.449 in.	0.213 in.	2.875 in.
3 in.	3.048 in.	0.226 in.	3.500 in.
4 in.	4.000 in.	0.250 in.	4.500 in.

*Dimensions include allowance for duct eccentricity.

CONSTRUCTION METHODS

108-3.1 GENERAL. Add the following to this section:

"At base-mounted lights, the unit duct will be inserted at least 3 in. inside each of the lights' two 6-in. conduit extensions, and then the end of the conduit will be sealed using a heat-shrink connection.

Only cable-in-unit duct may be plowed or directional-bored.

The Contractor will identify all existing underground utilities located within the area where the proposed cables are being installed, and will take all precautions to protect these utilities from damage. Any underground utility damaged will be repaired or replaced at the Contractor's own expense.

Contractor shall coordinate work and any power outages with the Airport Director or respective Airport personnel. Any shutdown of existing systems shall be scheduled with and approved by the Airport Director prior to shutdown. Once shut down, the circuits shall be labeled as such to prevent accidental energizing of the respective circuits. All personnel shall follow U.S. Department of Labor Occupational Safety & Health Administration (OSHA) 29 CFR Part 1910 Occupational Safety and Health Standards for electrical safety and lockout/tagout procedures, including, but not limited to, 29 CFR Section 1910.147 The Control of Hazardous Energy (lockout/tagout).

All cables installed by the Contractor shall be properly labeled and tagged at all points of access (handholes, manholes, and the respective wireway in the vault).

All changes to the airfield lighting system shall be documented by the Contractor and provided to the Airport Representative."

108-3.2 INSTALLATION IN DUCT OR CONDUIT. Add the following to this section:

"The unit duct will be run continuous through all ducts and conduits."

108-3.3 TRENCHING. Add the following to this section:

"(c) Cable installed in cultivated fields shall be installed a minimum of 42 in. below grade."

108-3.4 INSTALLATION IN TRENCHES. Add the following:

"Any and all trenches will be backfilled to a smooth grade to the satisfaction of the Resident Engineer. Areas disturbed during the installation of the proposed cable, which are not completed before the contract seeding operations, will be fertilized and seeded. The fertilizing and seeding will be completed in accordance with Items 901 and 908, but will be incidental to this Pay Item."

108-3.8 SPLICING. Add the following:

"In-line connections for existing cables cut during construction shall be repaired with the cast splice kit. The Contractor shall have a minimum of two splice kits on the job site at all times for emergency repairs. Cast splice kits shall be specified in paragraph (a) of Item 108-2.4. **Splice cans shall be provided for existing cables cut and repaired for each splice in cables not to be abandoned. Where a splice can is not readily available at the time of the cable damage, splice markers shall be temporarily installed over each splice in cables not to be abandoned, then these splices shall later be replaced with new splices in an L-867 splice can**.

There shall be no splices between series lighting circuit isolation transformers. In the event that a series lighting circuit cable is cut between isolation transformers, the entire length of cable between these isolation transformers shall be replaced. Splices for homerun cables will only be permitted at splice cans, junction boxes, handholes, or manholes."

108-3.9 BARE COUNTERPOISE WIRE INSTALLATION AND GROUNDING FOR LIGHTNING PROTECTION. Revise this section to read as follows:

"Item AR108706, 1/C #6 Counterpoise will need to be installed with the power and control cables associated with the FAA REIL relocation on Runway 30R. The counterpoise shall be embedded in the soil, a minimum of 10 in. above the cable to be protected and located directly above and parallel to the lines or cables being protected. The counterpoise shall be spliced to the existing counterpoise conductor at the location of

the proposed splice can (where existing REIL power and control cables are to be spliced to the new REIL power and control cables) and bonded to the respective ground rod located at this splice can. Counterpoise shall be bonded to ground rods at approximately 90-ft intervals using exothermic welds. The spacing of ground rods must vary by 10% to 20% to prevent resonance. Install ground rods at approximately 6 ft on either side of the trench. The counterpoise shall terminate at the ground rod located at the respective REIL unit. Contractor shall supply the correct exothermic welding kit for the application. The mold and cartridge used shall be selected on the basis of size, number, and type of conductors to be connected, composition and surface shape of object, and position in which the weld will be made. Three sources of exothermic welding kits are Cadweld (Erico Products, Inc.), Thermoweld (Continental Industries), and Ultraweld (Harger Lightning Protection and Grounding Equipment). The Contractor shall confirm the appropriate kits for each respective application with the respective exothermic-weld manufacturer. Regardless of the source of the kits he selects, the Contractor shall submit catalog cuts or other manufacturer information, demonstrating that the kits fit their intended applications on the above-described basis. The Contractor shall provide and use the proper preparation tools in applying the exothermic-weld process to insure an adequate weld. Ground rods and exothermic-weld connections shall be incidental to this Pay Item, and no additional compensation will be allowed."

108-3.12 LOCATING OF EXISTING CABLES. Add the following:

"The location, size, and type of material of existing underground utilities indicated on the Plans are not represented as being accurate, sufficient, or complete. Neither the Owner nor the Engineer assumes any responsibility whatever in respect to the accuracy, completeness, or sufficiency of the information. There is no guarantee, either expressed or implied, that the locations, size, and type of material of existing underground utilities indicated are representative of those to be encountered in the construction. It shall be the Contractor's responsibility to determine the actual location of all such facilities, including service connections to underground utilities. Prior to construction, the Contractor shall notify the utility companies of his operational plans, and shall obtain from the respective utility companies detailed information and assistance relative to the location of their facilities, and the working schedule of the companies for removal or adjustment, where required. In the event an unexpected utility interference is encountered during construction, the Contractor shall immediately notify the utility company of jurisdiction. The Engineer shall also be immediately notified. Any such mains and services shall be restored to service at once and paid for by the Contractor at no additional cost to the Contract.

It should be noted that all FAA control and communication cables shall be located by FAA. All utility cables and lines shall be located by the respective utility. Contact the Joint Utility Location Information for Excavation (JULIE) for utility information, phone: 1-800-892-0123. Also contact the Airport Director and/or respective Airport personnel for assistance in locating underground airport cables and/or utilities.

Payment for locating and marking underground utilities and cables will not be paid for separately, but shall be considered incidental to the plowing/trenching/boring of cable or cable-in-unit duct."

108-3.14 SEPARATION OF HIGH-VOLTAGE AND LOW-VOLTAGE WIRING. Low-voltage wiring shall maintain separation from high-voltage wiring. Low-voltage wiring and high-voltage wiring shall not be installed in the same raceway, handhole, or junction box.

METHOD OF MEASUREMENT

108-4.2. Add the following:

"Cables and counterpoise conductor associated with the Runway 30R REIL relocation shall be measured for payment from the respective splice location of existing cables to new cables up to REIL Unit #1. Cables at the REIL units and between the REIL units will be considered an Incidental Item to the relocation of the REIL units, and no additional compensation will be allowed."

BASIS OF PAYMENT

108-5.1. Payment will be made at the contract unit price per lin. ft of cable completed 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; for all plowing, trenching, directional boring, coring of manholes, and for all excavation and backfilling; and for all labor, equipment, tools, and incidentals necessary to complete this Item.

Payment will be made under:

Item AR108158 1/C #8 5KV UG Cable in UD - per lin. ft
Item AR108652 3/C #2 600 V UG Cable In UD - per lin. ft
Item AR108706 1/C #6 Counterpoise - per lin. ft
Item AR108806 6 Pair Control Cable - per lin. ft
Item AS108158 1/C #8 5KV UG Cable in UD - per lin. ft

ITEM AS109200
INSTALL ELECTRICAL EQUIPMENT
(Additive Alternate No. 1)

DESCRIPTION

109-1.1. Revise this section to read as follows:

"Item AS109200 Install electrical Equipment shall consist of furnishing and installing all electrical equipment in the vault to perform the vault upgrades as detailed on the Plans and specified herein. This item shall include all labor, materials, transportation, equipment, wiring, raceways, grounding, tools, coordination, relocations, operational instructions, labeling, testing and all incidentals required to place the vault and associated equipment into proper working order as a completed unit to the satisfaction of the Owner and Engineer.

Included under this Item shall be the following:

(a) Coordinating all work with the Airport Director and/or designated Airport Maintenance Staff, and the Resident Engineer.

(b) Furnishing and installing all electrical equipment and support hardware in the vault as detailed on the Plans and specified herein.

(c) Furnishing and installing all pull boxes, junction boxes, wireways, raceways, conduits, conduit fittings, and ducts within or at the vault.

(d) Furnishing and installing all necessary cable and wiring within or at the vault, as detailed on the Plans and specified herein.

(e) Furnishing and installing all grounding as detailed on the Plans and specified herein.

(f) Removal and/or replacement of designated vault equipment as detailed on the Plans and specified herein.

(g) Testing, adjusting, and retesting (where applicable) all new equipment and modifications to existing systems for proper operation.

(h) Labeling all electrical equipment and incidentals necessary to place all of the equipment in operation as a complete unit acceptable to the Owner and Engineer.

(i) Furnishing operation, maintenance, and installation manuals for all new equipment.

109-1.2 REFERENCES

(a) ANSI C80.1 – Rigid Steel Conduit, Zinc Coated.

(b) ANSI C80.4 – Fittings Rigid Metal Conduit and EMT.

(c) ANSI Z535.4-2002 - American National Standard for Product Safety Signs and Labels.

(d) ASTM Specification B3 – Standard Specification for Soft or Annealed Copper Wire.

(e) ASTM Specification B8 – Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft.

(f) Federal Specification A-A-59544 Cable and Wire, Electrical (Power, Fixed Installation).

(g) FAA AC No. 150/5340-30C "DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS".

(h) FAA AC No. 150/5345-7E, (or latest edition) "SPECIFICATIONS FOR L-824 UNDERGROUND ELECTRICAL CABLE FOR AIRPORT LIGHTING CIRCUITS.

(i) FAA AC No. 150/5345-10F "SPECIFICATION FOR CONSTANT CURRENT REGULATORS AND REGULATOR MONITORS".

(j) FAA AC No. 150/5345-53 "AIRPORT LIGHTING EQUIPMENT CERTIFICATION PROGRAM" (most current issue) and AC150/5345-53C, AIRPORT LIGHTING EQUIPMENT CERTIFICATION PROGRAM Appendix 3 Addendum.

(k) NEMA TC-2 – Electrical Plastic Tubing and Conduit.

(l) NEMA TC-3 – Fittings Rigid PVC Conduit and Tubing.

(m) NFPA 70 – National Electrical Code (most current issue in force).

(n) UL Standard 6 – Rigid Metal Conduit.

(o) UL Standard 44 – Thermoset-Insulated Wires and Cables.

(p) UL Standard 83 – Thermoplastic-Insulated Wires and Cables.

(q) UL Standard 467 – Grounding and Bonding Equipment.

(r) UL Standard 486A-486B Wire Connectors.

(s) UL Standard 514B – Conduit, Tubing and Cable Fittings.

(t) UL Standard 651 – Schedule 40 and 80 Rigid PVC Conduit.

(u) UL Standard 854 – Service Entrance Cables.

EQUIPMENT AND MATERIALS

109-2.1 GENERAL. Add the following to this section:

"(c) FAA approval of airport lighting equipment and subsequent inclusion in Advisory Circular 150/5345-1 "Approved Airport Equipment", and/or Advisory Circular 150/5345-53 "Airport Lighting Equipment Certification Program" only means that the test data satisfied the applicable Specification requirements. This does not insure that the approved equipment will satisfactorily operate when connected power-wise and/or control-wise to other approved airport lighting equipment or "off the shelf" equipment not requiring FAA approval.

(d) The Contractor shall ascertain that all lighting system components furnished by him (including FAA-approved equipment) are compatible in all respects with each other and the remainder of the new system. Any non-compatible components furnished by the Contractor shall be replaced by him, at no additional cost to the Airport Sponsor, with a similar unit approved by the Engineer (different model or different manufacturer) that is compatible with the remainder of the airport lighting system.

(e) Except as specified otherwise, all new equipment shall be provided by the Contractor and shall be tested for Specification conformance as part of the Aviation Lighting Equipment Certification Program. Certification of conformance, as tested by the testing laboratory, shall be provided by the manufacturer for all items submitted for approval."

109-2.4 BRICK. Delete this section.

109-2.5 ASBESTOS CEMENT DUCT. Delete this section.

109-2.6 FIBER CONDUIT. Delete this section.

109-2.7 RIGID STEEL CONDUIt. Add the following:

"GRSC shall be heavy wall, hot-dipped, galvanized steel pipe bearing the UL label and conforming to UL-6 and ANSI Specification C80.1. Couplings, connectors, and fittings for rigid steel conduit shall be threaded, galvanized steel, or galvanized malleable iron specifically designed and manufactured for the purpose. Fittings shall conform to ANSI C80.4 and UL-514B. Set screw type fittings are not acceptable."

109-2.8 LIGHTING. Delete this section.

109-2.11 FLOOR DRAINS. Delete this section.

109-2.13 HIGH-VOLTAGE BUS. Delete this section.

109-2.14 BUS CONNECTORS. Delete this section.

109-2.15 BUS SUPPORTS. Delete this section.

109-2.16 GROUND BUS. Delete this section.

109-2.17 SQUARE DUCT. Revise the last sentence to read:

"Square duct shall be sized, as detailed on the Plans."

Add the following:

"Wireway shall be installed, as indicated on the Plans, including, but not limited to, straight lengths, elbows, tees, offsets, panel adaptors, closing plates, wire retainers, and supports, as required for a complete installation. Wireways shall be constructed of 16-gauge steel before finishes are applied. All straight lengths of wireway shall have hinged or bolt-on covers. Lengths shall be provided with cover latches, a minimum of every 3 ft, which shall hold the cover securely in-place when closed. Sealing ears shall be provided on both the wireway lengths and connector covers so that the entire run can be sealed.

Wireways shall be 6 in. by 6 in., as detailed on the Plans. Wireways shall be furnished without knockouts. Connectors shall be slip-in type with self-retained mounting screws. They shall also have the feature to allow "lay-in" of all conductors. Wireways shall be provided with a gray epoxy-painted finish or gray polyester powder paint finish applied over a corrosion-resistant phosphate primer. All wireway lengths and accessories shall be Underwriter's Laboratories listed and labeled in conformance with UL 870 Standards for Wireways, Auxiliary Gutters, and Associated Fittings and conform to NEMA 1 enclosure rating."

109-2.19 POTHEADS. Delete this section.

109-2.20 PREFABRICATED METAL HOUSING. Delete this section.

109-2.21 FAA-APPROVED EQUIPMENT. Add the following:

"Constant Current Regulator for Runway 12L-30R. Constant current regulator for the Runway 12L-30R shall be a 7.5 KW, L-828 constant current regulator, 240 VAC, single-phase, 60 Hertz input, 6.6-Amps output, with three output brightness steps (4.8, 5.5, and 6.6-Amps). Constant current regulator shall comply with FAA AC 150/5345-10 (latest issue in force) for Type L-828 regulator. Constant current regulator shall be dry-type, ferro-resonant or saturable-reactor type regulator. Constant current regulator shall not have solid state controls in the series circuit and shall be designed for no radio

communication interference. Solid state electronic designs are not acceptable. Constant current regulator shall be capable of properly operating a set of REILS with the runway lighting system. Constant current regulator shall include open circuit protection, over current protection, output current ammeter, elapsed time meter (for total time on), output voltmeter, and lightning and transient protection on input and output lines. Constant current regulators shall also include a remote/local control feature with selections for "Remote, Off, 10% Brightness, 30% Brightness, and 100% Brightness". Control voltage shall be 120 VAC (external). Constant current regulators shall be manufactured by ADB/Siemens Airfield Solutions, Manairco, Inc. or Flight Light Inc./Hevi-Duty. Include the following spare components:

(a) One spare control circuit board for each type in the constant current regulator
(b) Primary switch contactor
(c) Lightning arresters (input and output)
(d) Control circuit fuses or breaker."

109-2.22 OTHER ELECTRICAL EQUIPMENT. Add the following:

"Type S-1 Series Plug Cutouts. Provide series plug cutouts for constant current regulators as detailed on the Plans. Series plug cutouts shall be Type S-1, rated 5KV, 20-Amp, and shall comply with FAA AC 150/5340-30C. Series plug cutouts shall be Crouse-Hinds, Type S-1, Model 2, Catalog Number 30775, or an approved equal. Note Crouse-Hinds Type S-1, Model 3, Catalog Number 30771 series plug cutouts are not acceptable because the handle is not removable. Other cutouts, that do not function the same as the Crouse-Hinds, Type S-1, Model 2, Catalog Number 30775 units, are not acceptable. Install the series plug cutout in a NEMA 1 or NEMA 12 enclosure sized, as required to house the cutout, with a hinged cover and back panel to mount the cutout. Enclosure shall include padlock kit.

Circuit Breakers. **Branch circuit breakers to be installed in the existing General Electric AQF1366CTX AXQ4B4, 600 Amp, 120/240 VAC, 1 phase, 3 wire panelboard shall be compatible with the existing panelboard and manufactured by General Electric.** Circuit breakers shall be bolt-on type with an amp interrupting capacity of 22,000 Amps minimum at 240 VAC. Circuit breaker amperage trip settings and number of poles shall be as detailed on the Plans. Circuit breakers for existing and new constant current regulators shall be sized as detailed on the Plans, in accordance with the respective constant current regulator manufacturer's recommendations and per the requirements of NEC. Contractor shall adjust circuit breaker sizes for constant current regulators to conform to the manufacturer's requirements/recommendations and NEC where applicable. Replacement circuit breakers for existing circuits shall be sized as detailed on the Plans.

Junction and Pull Boxes. Junction and pull boxes shall be sized, as required for conductors and splices and per 2008 NEC Article 314. Boxes shall be UL-listed. Special boxes made to suit conditions shall be used to accommodate the respective application, or where required by the NEC, even though they might not be indicated on the Drawings. Boxes located at the vault interior shall be NEMA 12. Boxes located at the vault exterior

shall be NEMA 4 stainless steel. Provide duct seal at all conduit penetrations into the vault from the exterior.

Liquid-Tight Flexible Metal Conduit. Liquid-tight, flexible metal conduit shall consist of polyvinyl jacket over flexible hot dip galvanized steel tubing. The flexible conduit shall be completely sealed from liquids, dust, dirt, and fumes and be resistant to oil, gasoline, grease, and abrasion. Jacket shall also be sunlight-resistant. Liquid-tight flexible metal conduit shall be UL-listed, suitable for use as a grounding conductor, and comply with Article 350 of the NEC. **Liquid-tight flexible metal conduit and associated fittings shall be UL-listed to meet the requirements of NEC 350.6.** Liquid-tight flexible metal conduit shall be Anaconda Sealtite Type UA as manufactured by Anamet Electrical Inc., 1000 Broadway Avenue East, Mattoon, Illinois 61938-0039, (Phone: 217-234-8844), Liquatite Type LA as manufactured by Electri-Flex Company, 222 W. Central Ave., Roselle, Illinois 60172, (Phone: 630-529-2920 or 1-800-323-6174), or approved equal.

109-2.23 WIRE. Add the following to Section (a) Control Circuits:

"THWN Wire. Cable shall comply with Underwriters' Laboratories Standard UL-83 and Federal Specification A-A-59544. Conductor shall be soft-annealed, uncoated copper and shall comply with ASTM B3 and B8. Insulation shall be rated for 600-Volt. Insulation shall be polyvinyl-chloride conforming to Underwriters' Laboratories requirements for Type THW. The outer covering shall be nylon-conforming to Underwriters' Laboratories for type THHN or THWN. Cable shall be UL-listed and marked THWN. Power and control wiring shall be Encore, Superior Essex, Southwire Company Type THWN, or approved equal."

Delete paragraphs 1, 2, and 3 under Section (b) Power Circuits.

Add the following:

"Power Cable (600-Volt and Below). All power wiring, 600-Volt and below, shall be the type, size, and number of conductors as noted on the Plans.

THWN Wire. Cable shall comply with Underwriters' Laboratories Standard UL-83 and Federal Specification A-A-59544. Conductor shall be soft-annealed, uncoated copper and shall comply with ASTM B3 and B8. Insulation shall be rated for 600-Volt. Insulation shall be polyvinyl-chloride conforming to Underwriters' Laboratories requirements for Type THW. The outer covering shall be nylon-conforming to Underwriters' Laboratories for type THHN or THWN. Cable shall be UL-listed and marked THWN-2. Power and control wiring shall be Encore, Superior Essex, Southwire Company Type THWN-2, or approved equal. **Note where THWN wiring is referenced on the Plans, it shall be THWN-2.**

XHHW Wire. Cable shall be UL-listed as Type XHHW-2 per UL Standard 44. Cable shall also conform to ICEA S-95-658/NEMA WC70 and Federal Specification A-A-59544. Conductors shall be Class B stranded, annealed, uncoated copper per UL

Standard 44. Insulation shall be rated for 600-Volt. Insulation shall be cross-linked polyethylene complying with the physical and electrical requirements of UL Standard 44 for Type XHHW-2. XHHW wire may be used in place of THWN wire for all applications and shall be Southwire Type XHHW-2, or approved equal.

XLP-USE Wire. Cable shall comply with UL Standard 44, UL Standard 854, and Federal Specification A-A-59544. Conductor shall be concentric-strand, soft copper, conforming to ASTM B8 and Underwriters' Laboratories Standard UL44 for Rubber Insulated Wires. Insulation shall be rated for 600-Volt. Insulation shall be cross-linked polyethylene conforming to Underwriter's Laboratories Requirements for Type USE-2 insulation. Cable shall be UL-listed and marked USE-2. Cable shall be Service Wire Company Type USE-2, or approved equal.

Series Circuit 5000-Volt Cable. Cable for use with series circuit airfield lighting shall be FAA-L-824, Type C cable complying with Item 108. L-824 cable shall be FAA approved and listed in the current AC150/5345-53C, AIRPORT LIGHTING EQUIPMENT CERTIFICATION PROGRAM Appendix 3 Addendum. Circuits for use with constant current regulator outputs (runway or taxiway lighting circuits) shall use 5000-Volt rated cable.

Grounding electrode conductors and/or bonding jumpers shall be the size and type, as detailed on the Plans. Ground wire for bonding constant current regulator housings, cutout enclosures, and other vault equipment frames to the vault ground bus shall be #6 AWG stranded copper."

CONSTRUCTION METHODS

109-3.10 GENERAL. Add the following to this section:

"The Contractor shall furnish and install all materials necessary for complete and operational installation of the vault equipment, as specified herein and as shown on the Plans. The complete installation and wiring shall be done in a neat, workmanlike manner. All electrical work shall comply with the requirements of the NFPA 70 – National Electrical Code (NEC) most current issue in force, and all other applicable local codes, laws, ordinances, and requirements in force. Electrical equipment shall be installed in conformance with the respective manufacturer's directions and recommendations for the respective application. Any installations which void the UL listing, ETL listing (or other third party listing), and/or the manufacturer's warranty of a device will not be permitted.

Contractor shall keep a copy of the latest NEC in force on site at all times during construction for use as a reference.

Contractor shall keep a copy of the Plans, Special Provision Specifications including any addenda, and copies of any change orders on site at all times during construction.

Contractor shall coordinate work and any power outages with the Airport Director and the Resident Engineer. Any shutdown of existing systems shall be scheduled with and approved by the Airport Manager prior to shutdown. Once shut down, the circuits shall be labeled as such to prevent accidental energizing of the respective circuits. All personnel shall follow U.S. Department of Labor Occupational Safety & Health Administration (OSHA) 29 CFR Part 1910 Occupational Safety and Health Standards for electrical safety and lockout/tagout procedures including, but not limited to, 29 CFR section 1910.147 The Control of Hazardous Energy (lockout/tagout).

All electrical equipment installed by the Contractor shall be properly labeled, and all cables must be tagged.

All changes to the airfield lighting system control wiring will be documented by the Contractor and provided to the Resident Engineer.

Locate Existing Underground Utilities and Cables. The location, size, and type of material of existing underground utilities indicated on the Plans are not represented as being accurate, sufficient, or complete. It shall be the Contractor's responsibility to determine the actual location of all such facilities, including service connections to underground utilities. Prior to construction, the Contractor shall notify the utility companies of his operational plans, and shall obtain from the respective utility companies detailed information and assistance relative to the location of their facilities and the working schedule of the companies for removal or adjustment, where required. In the event an unexpected utility interference is encountered during construction, the Contractor shall immediately notify the utility company of jurisdiction. The Engineer shall also be immediately notified. Any such mains and services shall be restored to service at once and paid for by the Contractor at no additional cost to the Contract. Contact JULIE for utility information, Phone: 800-892-0123. Contact FAA for assistance in locating FAA cables. Also, contact the Airport Manager and/or respective Airport personnel for assistance in locating underground airport cables and/or utilities."

109-3.11 POWER SUPPLY EQUIPMENT. Add the following to this section:

"Constant Current Regulators. Install constant current regulators in conformance with the manufacturer's recommendations, as detailed on the Plans and as specified herein. Confirm circuit breaker sizes for constant current regulators are sized in conformance with the respective manufacturer's recommendations and/or requirements and NEC. Where necessary to accommodate the respective constant current regulator input amperage requirements, circuit breakers, conductors, and conduits shall be adjusted (increased in size) to meet the manufacturer's recommendations and/or requirements and the NEC. Conduit connections to constant current regulators shall be with UL-listed, liquid-tight, flexible metal conduit. Maintain proper separation of high voltage cables from low voltage cables. Coordinate high voltage conduit entries into the high voltage section of the constant current regulator. Coordinate low voltage conduit entries into the low voltage section of the constant current regulator. Furnish and install control wiring,

as detailed on the Plans. Bond each constant current regulator enclosure frame to the vault ground bus with a #6 AWG (minimum), bare-stranded, copper-bonding jumper."

109-3.12 SWITCHGEAR AND PANELS. Add the following to this section:

"Installation of S-1-Type Cutouts. Install plug cutouts in conformance with the manufacturer's recommendations, as detailed on the Plans and as specified herein. Provide NEMA 1 or NEMA 12 painted steel enclosures adequately sized for the cutouts and cables with hinged cover and back panel to mount the plug cutouts.

Installation of Circuit Breakers in Panelboards. Install circuit breakers in panelboards in conformance with the respective manufacturer's directions. Connect only one wire/cable to each breaker terminal. Update circuit directory to identify the respective device fed by each new circuit breaker."

109-3.13 DUCT AND CONDUIT. Add the following to this section:

"(a) Conduit shall be installed in accordance with the following:

1. All service, feeder, branch circuit, and control circuit conduits shall be galvanized, rigid steel.

2. Schedule 40 PVC conduits shall be used for individual grounding electrode conductors and/or or bonding jumpers.

3. Liquid-tight, flexible metal conduit shall be used as specified herein.

(b) Conduit Runs

1. All conduits shall be sized as indicated on the Drawings, or if conduit sizes not shown, shall be in accordance with the NEC. All conduit systems shall be mechanically and electrically continuous from source of current to all outlets and grounded in accordance with the NEC.

2. Run all exposed conduit parallel to building walls using right-angle bends. Exposed diagonal runs of conduit will not be permitted. Do not install conduit on roof surfaces unless specifically indicated on the Drawings.

3. Ream conduit after threads are cut. Cut ends square, and butt solidly into couplings.

4. Prevent the accumulation of water, foreign matter, or concrete in the conduits during the execution of the work. Temporarily plug conduit, blowout, and swab before wires are pulled.

5. Fasten conduits to all sheet metal boxes and cabinets with two locknuts in accord with NEC, where insulated bushings are used and where bushings cannot be brought into firm contact with the metal enclosures; otherwise, use at least a single locknut and bushing.

6. Provide conduit expansion joints at building expansion joints for conduit runs 1½ in. and larger. Provide conduit expansion joints or flexible conduit connection at building expansion joints for conduits less than 1½-in.

7. Seal each underground joint and make water-tight.

8. Where building construction or other conditions make it impossible to use standard threaded couplings, install water-tight, threaded unions.

9. Make changes in direction of runs with symmetrical bends or cast-metal fittings. Make field-made bends and offsets with conduit bending machine to avoid changing the internal diameter of the conduit and not damage its protective coating either inside or outside. Individual bends shall not exceed 90 degrees and not more than 270 degrees total bends will be allowed in any one conduit run. Where more bends are necessary, and conduit runs exceed 150-lin. ft, install a suitable pull box or junction box.

10. Provide empty conduits installed with a pull wire. Pull wire shall be No. 14 AWG zinc-coated steel, or of plastic having not less than 200-lb. tensile strength. Leave not less than 12-in. of slack at each end of the pull wire.

11. Use liquid-tight, flexible metal conduit for final connection to motors, constant current regulators, transformers, portable equipment, and for equipment subject to vibration and noise transmission. For each conduit sizes up to 1-in. trade size, flexible conduit shall be minimum length of 12-in. and a maximum length of 36-in. For conduit sizes above 1-in. trade size, flexible conduit shall be minimum length of 20-in. and maximum length of 48-in. Liquid-tight, flexible metal conduit shall be UL-listed and suitable for grounding. Liquid-tight, flexible metal conduit that is used for flexibility (including connections to motors, constant current regulators, and transformers) shall require and external bonding jumper or internal equipment grounding conductor per NEC 350.60. Do not install liquid-tight, flexible metal conduit that is not UL-listed.

(c) Raceway Support and Hangers

1. Securely fasten raceways in-place and support from ceiling or walls at spacing not exceeding:

	Material	Maximum Spacing of Supports
a.	½-in. thru 1-in. trade size conduit	6 ft
b.	1¼-in. thru 1½-in. trade size conduit	8 ft
c.	2-in. to 4-in. trade size conduit	10 ft
d.	Liquid-Tight, Flexible Metal Conduit	4½ ft
e.	Metal Wireway	10 ft

2. Support rigid conduits within 3 ft of every outlet box, junction box, pull box, cabinet, or termination. Support flexible conduit within 12-in. on each side of every outlet box or fitting.

3. Support conduits by pipe straps, wall brackets, hangers, or ceiling trapeze. The use of perforated iron or wire for supporting conduits is prohibited. Fasten with wood screws or screw nails to wood; by toggle bolts on hollow masonry units, by concrete inserts, or expansion bolts on concrete or spring-tension or threaded C-clamps for rigid steel conduits on steel. Do not weld conduits or pipe straps to steel structures unless specifically indicated.

4. The load applied to fasteners shall not exceed one-third the proof test load of the fasteners.

5. Fasteners attached to concrete shall be vibration-resistant and shock-resistant.

6. Where two or more conduits 1-in. trade size or larger run parallel, trapeze hangers may be used consisting of threaded solid rods, washers, nuts, and galvanized "L" angle or channel iron. Individually fasten conduits to the cross member of every other trapeze hanger with one hole straps or clamp backs with proper size bolts, washers, and nuts. When adjustable trapeze hangers are used, use U-bolt type clamps at end of conduit runs, at each elbow, and at each third intermediate hanger to fasten each conduit.

7. Make hangers of durable materials suitable for the application involved. Applied loads shall not exceed one-third of their loading capacity.

8. All screws, bolts, washers, and miscellaneous hardware used for conduit supports shall be fabricated from rust-resisting metal. Trapeze hangers shall have hanger assemblies protected with galvanized finish."

109-3.15 WIRING AND CONNECTIONS. Add the following to this section.

"Low-voltage wiring shall maintain separation from high-voltage wiring. Low-voltage and high-voltage wiring shall not be installed in the same raceway. Low-voltage and high-voltage wiring shall not be installed in the same handhole or junction box."

109-3.16 MARKING AND LABELING. Add the following to this section:

"(c) Legend plates shall be provided for all equipment. Legend plates shall be provided to identify the equipment controlled, the power source, and the function of each device. Legend plates shall be weatherproof, abrasion-resistant, phenolic/plastic, engraved material and fastened with contact-type permanent adhesive, screws, or rivets. Installation shall not break, crack, or deform the legend plate. Lettering shall be ¼ in. high, black on a white background, unless noted otherwise.

(d) Identify control wiring at each termination point and in junction/terminal boxes with wire number corresponding to the respective control wiring diagram or respective terminal numbering arrangement. Each individual control wire shall have unique identification and shall maintain that same identification from its point of origin to its final termination point. Wire markers shall be permanent pressure sensitive label with suitable numbers or letters for easy recognition. Where new control wiring is interfaced to existing control wiring it shall also match the color coding of the existing control wiring.

(e) Color-code phase and neutral conductor insulation for No. 6 AWG or smaller. Provide colored marking tape for phase and neutral conductors for No. 4 AWG and larger. **Insulated ground conductors shall have green colored insulation for all conductor sizes (AWG and/or KCMIL) to comply with NEC 250.119. Neutral conductors shall have white colored insulation for No. 6 AWG and smaller to meet the requirements of NEC 200.6.** Standard colors for power wiring and branch circuits shall be as follows:

120/240 VAC, 1 Phase, 3-wire	
Phase A	Black
Phase B	Red
Neutral	White
Ground	Green

(f) Furnish and install weatherproof warning label for each cutout enclosure and control panel to warn persons of potential electric arc flash hazards, per the requirements of NEC 110.16 "Flash Protection". Labels shall also conform to ANSI Z535.4-2002 "American National Standard for Product Safety Signs and Labels". NEC 110.16 requires that switchboards, panelboards, industrial control panels, meter socket enclosures, and motor control centers that are likely to

require examination, adjustment, servicing, or maintenance while energized shall be field marked to warn qualified persons of potential arc flash hazards. The markings shall be located so as to be clearly visible to qualified persons before examination, adjustment, servicing, or maintenance of the equipment. This new requirement is intended to help reduce the occurrence of serious injury or death due to arcing faults to those working on or near energized electrical equipment. The warning labels are to indicate to a qualified worker who intends to open the equipment for analysis of work that a serious hazard exists and that the worker should follow appropriate work practices and wear appropriate PPE for the specific hazard. Labels shall be as detailed on the Plans or shall include at least the following information: "Warning - Potential Arc-Flash Hazards exist while working on this energized equipment. Appropriate PPE Required."

109-3.18 TESTING. The installation shall be tested in operation and as a completed unit prior to acceptance. Contractor shall furnish all equipment, meters, instruments, cable connections, tools, manpower, and labor to perform the respective tests. Test all new equipment and all existing equipment where modifications take place and confirm proper operation. Coordinate tests with the respective Airport personnel and the Resident Engineer. Tests shall include resistance, voltage, and current reading, as applicable, for the respective equipment. When tests disclose any unsatisfactory workmanship or equipment furnished under this Contract, correct defects and retest. Repeat tests until satisfactory results are obtained. When any wiring or equipment is damaged by tests, the wiring or equipment shall be repaired or replaced at no additional cost to the Contract. Test repaired or replaced items to ensure satisfactory operation. Submit three copies of all test reports to the Resident Engineer. All test reports shall be assembled and bound in a folder or binder. Each test report shall include the following information:

- Project number,
- Project title and location,
- Device or system tested,
- Test performed,
- Date performed,
- Test equipment used,
- Respective Contractor's name, address, and telephone number,
- Testing firm's name, address, and telephone number, if other than the Contractor,
- Names of individuals performing tests,
- Names of individuals observing tests,
- Statement verifying each test,
- Nameplate data from respective equipment tested,
- Test results, and
- Retest results after correction of defective components or systems, where applicable.

109-3.20 GROUNDING REQUIREMENTS. Grounding shall conform to the following: The Contractor shall furnish and install all grounding shown on the Plans, as specified herein, and in conformance with latest NFPA 70 – National Electrical Code in force in order to make a complete grounding system. The reliability of the grounding system is dependent on careful, proper installation, and choice of materials. Improper preparation of surfaces to be joined to make an electrical path, loose joints, or corrosion can introduce impedance that will seriously impair the ability of the ground path to protect personnel and equipment and to absorb transients that can cause noise in communications circuits. The following functions are particularly important to ensure a reliable ground system:

(a) All products associated with the grounding system shall be UL-listed and labeled.

(b) All bolted or mechanical connections shall be coated with a corrosion preventative compound before joining, Sanchem Inc. "NO-OX-ID "A-Special" compound, Burndy Penetrox E, or equal

(c) Metallic surfaces to be joined shall be prepared by the removal of all non-conductive material, per 2008 NEC, Article 250-12. All copper bus bars must be cleaned prior to making connections to remove surface oxidation.

(d) Metallic raceway fittings shall be made up tight to provide a permanent low impedance path for all circuits. Metal conduit terminations in enclosures shall be bonded to the enclosure with UL-listed fittings suitable for grounding. Provide grounding bushings with bonding jumpers (from bushing to the respective ground connection/enclosure frame) for all metal conduits entering service equipment (meter bases, CT cabinet, service disconnects, service panelboards, main service breaker enclosure, etc.). Provide grounding bushings with bonding jumpers for all metal conduits entering an enclosure through concentric or eccentric knockouts that are punched or otherwise formed so as to impair the electrical connection to ground. Standard locknuts or bushings shall not be the sole means for bonding where a conduit enters an enclosure through a concentric or eccentric knockout.

(e) All connections located above grade between the different types of grounding conductors shall be made using UL-listed, double-compression, crimp-type connectors or UL-listed, bolted ground connectors. For ground connections to enclosures, cases, and frames of electrical equipment not supplied with ground lugs, the Contractor shall drill required holes for mounting a bolted ground connector. All bolted ground connectors shall be Burndy, Thomas and Betts, or equal. Tighten connections to comply with tightening torques in UL Standard 486A to assure permanent and effective grounding.

(f) All metal equipment enclosures, conduits, cabinets, boxes, receptacles, etc. shall be bonded to the respective grounding system.

(g) Each feeder circuit and/or branch circuit shall include an equipment ground wire. Metal raceway or conduit shall not meet this requirement. The equipment ground

wire from equipment shall not be smaller than allowed by 2008 NEC Table 250-122 "Minimum Size Conductors or Grounding Raceway and Equipment." When conductors are adjusted in size to compensate for voltage drop, equipment-grounding conductors shall be adjusted proportionately according to circular mil area. All equipment ground wires shall be copper, either bare or insulated, and green in color. Where the equipment grounding conductors are insulated, they shall be identified by the color green, and shall be the same insulation type as the phase conductors.

(h) Bond the main electrical service neutral to ground at the main service disconnect. Bond the service neutral to ground at one location only per the NEC. A grounding connection shall not be made to any neutral circuit conductor on the load side of the service disconnecting means, except as permitted by the 2008 NEC, Article 250-24. Where the Contractor is unable to distinguish the difference between a neutral conductor and equipment grounding conductor, or other ground conductor, contact the Resident Engineer for assistance from the Project Engineer.

(i) The secondary neutral of all transformers (separately derived system transformers) shall be grounded in accordance with the NEC. The respective grounding electrode conductor shall be connected to the neutral point of the transformer between the transformer and the output disconnect means. Size of the grounding electrode conductor shall be in accordance with the 2008 NEC, Article 250-66 and Table 250-66, unless shown larger on the Drawings. A bond shall be provided between the neutral and transformer case, or other metal that is part of the AC equipment grounding system, so as to complete a circuit for fault current to the transformer winding from the AC equipment grounding system. Size of the neutral bonding conductor shall be in accordance with the 2008 NEC, Article 250-102.

(j) All exterior metal conduits, where not electrically continuous because of manholes, handholes, non-metallic junction boxes, etc., shall be bonded to all other metal conduit in the respective duct run and at each end with a copper-bonding jumper sized in conformance with the 2008 NEC, Article 250-102. Where metal conduits terminate in an enclosure (such as a motor control center, switchboard, etc) where there is not electrical continuity with the conduit and the respective enclosure, provide a bonding jumper from the respective enclosure ground bus to the conduit sized per the 2008 NEC, Article 250-102.

(k) Install grounding electrode conductors and/or individual ground conductors in Schedule 40 or Schedule 80 PVC conduit. Where grounding electrode conductors or individual ground conductors are run in PVC conduit, <u>do</u> <u>not</u> completely encircle conduit with ferrous and/or magnetic materials. Use non-metallic, reinforced fiberglass strut support. Where metal conduit clamps are installed, use nylon bolts, nuts, washers, and spacers to interrupt a complete metallic path from encircling the conduit.

(l) Individual ground conductors and/or grounding electrode conductors shall not be run in metallic conduit and shall not be encircled by metallic clamps. If local codes dictate that grounding conductors must be run in metal conduit or raceway, then the conduit or raceway must be bonded to the grounding conductor at both ends with a bonding jumper sized in accordance with the NEC 250.64(E). All such installations requiring individual grounding conduits to be run in metal conduit or raceway shall be verified and reviewed with the Resident Engineer. This does not apply to AC equipment ground wires run with AC circuits.

METHOD OF MEASUREMENT

109-4.3. Add the following to this section:

"The quantity of vault equipment to be paid for under Item AS109200 "Install Electrical Equipment" shall consist of furnishing and installing all electrical equipment at the vault, as detailed on the Plans and specified herein. This item shall include all labor, equipment, materials, control panels, conductors, connectors, conduits, wireways, junction boxes, core drilling, tools, operational instructions, coordination, labeling, and testing required to place the vault and associated electrical equipment into proper working order."

BASIS OF PAYMENT

Payment will be made under:

Item AS109200 Install Electrical Equipment - per lump sum

ITEM AR110
2-WAY CONCRETE-ENCASED DUCT
EXTEND 2-WAY DUCT

DESCRIPTION

This Item of work shall consist of the installation of all proposed ducting, as shown on the Construction Plans.

EQUIPMENT AND MATERIALS

110-2.1 GENERAL. Duct for constructing the 2-way duct extension (concrete-encased) and the 2-Way duct (concrete-encased) shall be Schedule 40 PVC. All materials for these Items shall be in accordance with FAA Standard Specification 110 "Equipment and Materials."

110-2.7 PLASTIC CONDUIT. Add to this section:

> "Conduits for concrete encasement shall be Schedule 40 PVC, UL-listed, rated for 90°C cable-conforming to NEMA Standard TC-2 and UL 651, listed suitable for concrete encasement."

CONSTRUCTION METHODS

110-3.1 GENERAL. Add to this section:

> "The proposed, 2-way, concrete-encased duct extension and 2-Way, concrete-encased duct shall be constructed at the locations and in accordance with the details shown on the Construction Plans.
>
> Ducts installed under paved areas and roadways shall extend a minimum of 3 ft beyond the respective pavement or roadway surface, unless indicated otherwise on the Construction Plans. A pull wire will be left in the conduit if it is to be left vacant. The ends of the conduit will be sealed with approved plugs.
>
> The Contractor will determine if there is a conflict between the installation of the proposed electrical duct and any existing underground utilities, cables, drains, pipes, etc. He will make all necessary adjustments in depth of installation to avoid any and all proposed underground improvements."

110-3.6 RESTORATION. Add to this section:

> "Any and all trenches and disturbed areas will be backfilled and restored to a smooth grade and seeded to the satisfaction of the Engineer. All trench settlement shall be corrected for a period of one year. Restoration, grading, and seeding of areas disturbed

during the installation of the proposed ducts will be incidental to the respective 110 Pay Item."

110-3.7 LOCATING OF EXISTING UNDERGROUND UTILITIES AND CABLES. The locations, size, and type of material of existing underground utilities indicated on the Plans are not represented as being accurate, sufficient, or complete. Neither the Owner nor the Engineer assumes any responsibility whatever in respect to the accuracy, completeness, or sufficiency of the information. There is no guarantee, either expressed or implied, that the locations, size, and type of material of existing underground utilities indicated are representative of those to be encountered in the construction. It shall be the Contractor's responsibility to determine the actual location of all such facilities, including service connections to underground utilities. Prior to construction, the Contractor shall notify the utility companies of his operational plans, and shall obtain from the respective utility companies detailed information and assistance relative to the location of their facilities and the working schedule of the companies for removal or adjustment, where required. In the event an unexpected utility interference is encountered during construction, the Contractor shall immediately notify the utility company of jurisdiction. The Engineer shall also be immediately notified. Any such mains and services shall be restored to service at once and paid for by the Contractor at no additional cost to the Contract.

The Contractor shall coordinate the location of the FAA control and communication cables with the FAA and the Airport. All utility cables and lines shall be located by the respective utility. Contact JULIE for utility information, Phone: 800-892-0123. Also, contact the Airport Director and/or respective Airport personnel for assistance in locating underground airport cables and/or utilities.

METHOD OF MEASUREMENT

110-4.1. The quantity of conduit to be paid for shall be the number of lin. ft of ducts of the particular type installed and measured in-place, complete, and accepted by the Resident Engineer.

BASIS OF PAYMENT

110-5.1. Payment will be made at the contract unit price per each type and size of conduit, completed and accepted. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials; for all sawing and pavement removal; and for all excavation and backfilling with aggregate backfill, earth backfill, and concrete; and for all labor, equipment, tools, and incidentals necessary to complete this Item.

Payment will be made under:

Item AR110502 2-Way Concrete-Encased Duct - per lin. ft
Item AR110552 Extend 2-Way Duct – per lin. ft

ITEM AR125
INSTALLATION OF AIRPORT LIGHTING SYSTEMS

DESCRIPTION

125-1.1. Revise this paragraph to read as follows:

"This Item of work shall consist of furnishing and installing taxi guidance signs, installing base-mounted runway lights, base-mounted taxiway lights, and base-mounted threshold lights at the locations shown on the Construction Plans and in accordance with the details shown on the Plans. This Item of work shall also include the removal of base- and stake-mounted taxiway lights. Also included in this Item will be the testing of the installation and all incidentals necessary to place the lighting systems into operation, completed, and to the satisfaction of the Resident Engineer."

EQUIPMENT AND MATERIALS

125-2.1 GENERAL. Add the following to this section:

"(d) Non-metallic light fixtures or plastic couplings will not be acceptable under this Contract. All proposed runway lights shall be Type L-861, with 30-Watt quartz lamps. Threshold lights shall be Type L-861SE, with 115-Watt or 120-Watt quartz lamps. Lens colors for runway and threshold lights shall be as detailed on the Plans. All proposed taxiway lights shall be Type L-861-T, with 30-Watt quartz lamps and blue lenses. All lights shall have an overall height of 24 in. All of the above lights shall be manufactured in accordance to FAA Specification AC No. 150/5345-46B, or latest edition in force.

The concrete used in the construction of these Items shall be in accordance with Item 610.

(e) The proposed taxi guidance signs will conform to Advisory Circular 150/5345-44G and be FAA-approved. The signs will be Size 1, 18-in. sign face with a 12-in. legend; Style 2, powered from a 4.8 to 6.6 amp series lighting circuit; Class 2, for operation down to -55ºC; medium-intensity, Mode 2, to withstand wind loads of 200 M.P.H., base-mounted, double-sided, as specified on the Plans.

All lighted taxi guidance signs on the Airport are Lumacurve signs. For this reason, all modifications to the existing signs will be Lumacurve products. The Airport personnel wants only one brand of guidance signs on the Airport; therefore, all proposed taxi guidance signs will be Lumacurve. Lumacurve is a brand of Standard Sign, Inc.

The signs shall read as described on the Construction Plans. The proposed taxi guidance signs will be Type L-858-Y direction, destination, and boundary signs (black legend on yellow background); Type L-858-R mandatory instruction sign (black outline on outside edge of white legend on red background); and Type L-858-L location sign (yellow legend and border on black background).

The concrete used in the construction of these Items shall be in accordance with Item 610."

125-2.8 LIGHT CANS. Add the following to this section:

"Each light base can and/or splice can shall include internal and external ground lugs. Cans shall be the size and depth as detailed on the Plans. L-867 splice cans shall have galvanized steel covers, 3/8 in. thick, with stainless steel bolts."

125-2.14 IDENTIFICATION TAGS. Identification tags shall be attached to each new fixture and sign. The tag shall be of the type and with the lettering shown on the Plans. The cost of furnishing and installing these tags shall be included in the unit price for the fixtures or signs and no additional compensation will be allowed.

125-2.15 ANTI-SEIZE COMPOUND. Prior to installing the proposed taxi guidance signs, the Contractor will apply an oxide-inhibiting, anti-seizing compound to all screws, nuts, breakable coupling, and all places where metal comes into contact with metal. The anti-seize compound will be as manufactured by I.T.T. brand name "Contax", or approved equal.

125-2.16 STAINLESS STEEL BOLTS. All base plate-mounting bolts and stake-mounting bolts shall be stainless steel.

125-2.17 GROUND RODS. Furnish and install 5/8-in. diameter by 8-ft long (minimum), UL-listed, copper-clad, ground rod at each L-867 transformer base/light can. Steel used to manufacture ground rods shall be 100 percent domestic steel.

CONSTRUCTION METHODS

125-3.1 GENERAL. Add the following to this section:

"The proposed taxi guidance signs, taxiway, runway, and threshold lights will be installed in accordance with the details shown on the Construction Plans.

The existing taxiway and threshold lights designated for removal will be removed in their entirety. The Contractor will turn the light, stake, and isolation transformer over the Airport maintenance personnel. If they do not want any part of the existing light, the Contractor will dispose of it off the Airport site at his own expense.

All disturbed areas around the taxi guidance signs will be smooth-graded to match the surrounding area, seeded, and mulched in accordance with Items 901 "Seeding" and 908 "Mulching". Liming and fertilizing of the disturbed areas will not be required.

Obtaining the required borrow material, placing the borrow material, grading, seeding, and mulching the disturbed areas will be considered as an Incidental Item to the proposed taxi guidance signs and lights, and no additional compensation will be allowed.

Contractor shall coordinate work and any power outages with the Airport Director and the Resident Engineer. Any shutdown of existing systems shall be scheduled with and approved by the Airport Director prior to shutdown. Once shut down, the circuits shall be labeled as such to prevent accidental energizing of the respective circuits. All personnel shall follow U.S. Department of Labor Occupational Safety & Health Administration (OSHA) 29 CFR Part 1910 Occupational Safety and Health Standards for electrical safety and lockout/tagout procedures including, but not limited to, 29 CFR section 1910.147 The Control of Hazardous Energy (lockout/tagout)."

125-3.4 IDENTIFICATION NUMBERS. The Contractor will place light identification number tags on ALL of the proposed runway lights, threshold lights, taxiway lights, and taxi guidance signs as detailed on the Plans. The correct light identification numbers are shown on the Construction Plans.

125-3.5 GROUNDING FOR AIRFIELD LIGHTS AND TAXI GUIDANCE SIGNS. Grounding for Runway Lights, Taxiway Lights, and Lighted Taxi Guidance Signs shall be as detailed on the Plans and as specified herein. Per FAA AC 150/5340-30B DESIGN AND INSTALLTION DETAILS FOR AIRPORT VISUAL AIDS, Chapter 12, Part 12.6; a safety ground must be installed at each light fixture. The purpose of the safety ground is to protect personnel from possible contact with an energized light base or mounting stake as the result of a shorted cable or isolation transformer. A safety ground shall be installed at each transformer base/light can associated with runway lights, taxiway lights, and lighted taxi guidance signs. A safety ground shall also be installed at each stake-mounted light fixture. The safety ground shall be a #6 AWG bare copper conductor connected to the ground lug on the respective L-867 transformer base/light can or mounting stake and a 5/8-in. diameter by 8-ft long (minimum), UL-listed, copper-clad ground rod. Connections to ground lugs on the L-867 transformer base/light can or mounting stake shall be with a UL-listed grounding connector. Connections to ground rods shall be made with exothermic-weld type connectors, Cadweld by Erico Products, Inc., Solon, Ohio (Phone: 800-248-9353), Thermoweld by Continental Industries, Inc., Tulsa, Oklahoma (Phone: 918-663-1440), or Ultraweld by Harger, Grayslake, Illinois (Phone: 800-842-7437). Exothermic-weld connections shall be installed in conformance with the respective manufacturer's directions using molds, as required for each respective application. Bolted connections will not be permitted at ground rods. Top of ground rods shall be buried 24 in. minimum below grade.

BASIS OF PAYMENT

Add the following:

"Payment will be made under:

Item AR125415 MITL – Base Mounted – per each
Item AR125443 Taxi Guidance Sign, 3 Character – per each
Item AR125444 Taxi Guidance Sign, 4 Character – per each
Item AR125445 Taxi Guidance Sign, 5 Character – per each
Item AR125510 MIRL, Base Mounted – per each
Item AR125545 MI Threshold Light Base Mtd – per each
Item AR125565 Splice Can – per each
Item AR125901 Remove Stake Mounted Light – per each
Item AR125902 Remove Base Mounted Light – per each"

ITEM AR125967
RELOCATE REILS

DESCRIPTION

AR125967-1.1 This Item of work shall consist of the relocation of the existing REIL units from the existing threshold of Runway End 30R to the proposed locations detailed on the Plans. The existing REIL units are owned and maintained by FAA. The existing REIL units are five-piece units manufactured by DME Corporation consisting of one DME Model FA-10264/1 REIL Power and Control Assembly Cabinet, two Model FA-10264/2 Flasher Control Units, and two Model FA-10262/3 Flasher Units. Existing wiring diagrams, provided by the FAA, are detailed on the Plans. Contractor shall field-verify and record the existing wiring connections for the REIL units to assist with the relocation and rewiring of these units. The REIL Power and Control Assembly Cabinet is located near the Glide Slope facility for Runway 30L and will not require relocation. The REIL flasher control units are powered and controlled by the REIL Power and Control Assembly Cabinet. The Existing power feed is a 120/240 VAC, 1-phase, 3-wire circuit consisting of 2 #2 AWG USE and 1 #2 AWG USE Neutral with a #6 AWG bare copper guard wire located approximately 10 in. above the power cables in the same trench. The existing control cable is a 6 pair, #19 AWG shielded underground cable installed in the same trench as the power feed cables. It will be assumed that the REILS are currently in working order. Prior to removing the REILS the Contractor will verify and confirm with the Resident Engineer the condition of the REILS and determine if they are in working order.

AR125967-1.2 REFERENCES

(a) FAA AC No. 150/5345-51 titled "SPECIFICATION FOR DISCHARGE-TYPE FLASHING LIGHT EQUIPMENT" (most current issue).

(b) FAA-GL-918C "Department of Transportation Federal Aviation Administration, Great Lakes Region, Chicago, Illinois, Specification for Construction of Terminal Navigational Aid Facilities.

(c) MIL-W-16878 Military Hook-Up Wire

(d) NFPA 70 – National Electrical Code (most current issue in force).

(e) UL 467 – Grounding and Bonding Equipment.

EQUIPMENT AND MATERIALS

AR125967-2.1 POWER AND CONTROL CABLE. Power cables and control cables from the respective power source splice location to the respective disconnecting means for the REILS shall be as detailed on the Plans and in conformance with Item 108. Power and control cables between the REIL units shall be as recommended by the respective REIL manufacturer, per FAA

AC 150/5345-51, and as detailed on the Plans. All cable that is direct buried in earth shall be listed suitable for direct burial in earth.

AR125967-2.2 REIL FLASHER POWER AND CONTROL CABLES. Power and control cables between the REIL flasher control units and the flasher units shall be 3000-Volt rated cable conforming to MIL Spec No. MIL-W-16878/3. Based on information from the existing wiring schematics for the REIL units, the 3000-Volt cables between the REIL flasher control units to the flasher units consists of two black insulated #20 AWG conductors (MIL-W-16878/3BGE0), one red insulated #20 AWG conductor (MIL-W-16878/3BGE2), one black insulated #16 AWG conductor (MIL-W-16878/3BJE0), and one white insulated #16 AWG conductor (MIL-W-16878/3BJE9). Contractor shall confirm color-coding of existing cables and, where applicable, provide replacement cables that match the existing cables. Replacement cables should be available from DME Corporation, 6830 MW Terrace, Ft. Lauderdale, Florida 33309, Phone: 954-975-2100 or 954-975-2222.

AR125967-2.3 JUNCTION BOX. The existing NEMA 3R junction box located at REIL Unit #1 shall be replaced with a 12 in. wide by 12 in. high by 6 in. deep NEMA 4 painted steel junction box with hinged cover and back panel. Include power distribution blocks properly sized for the respective power conductors; Squared Class 9080, Type LBA362104, or approved equal. Include terminal blocks properly sized for control wiring, Square D Class 9080, Type GM6, or approved equal. Include copper equipment ground bar, adequately sized for all ground wires to or from the junction box, ILSCO Corporation Cat. No. D167-12, or approved equal.

AR125967-2.4 CONDUIT. Conduit for the REIL system shall conform to Item 110, per the REIL manufacturer's recommendations, and as detailed on the Plans.

AR125967-2.5 STRUT SUPPORT. Strut-type steel supports shall be provided to support all freestanding equipment enclosures and other equipment enclosures, as indicated on Plans. Supports shall be hot-dipped, galvanized steel strut, Unistrut P-1000HG, or approved equal. Provide necessary hardware, such as floor flanges, etc., as required to install equipment. Provide materials, sizes, and types of anchors, fasteners, and supports necessary to carry the loads of equipment and conduits. Consider weights of conduit when selecting products. Fasteners and anchors shall be corrosion-resistant, stainless steel, or cadmium-plated.

AR125967-2.6 SAFETY SWITCHES. Furnish and install safety switches for the respective equipment, as detailed on the Plans and specified herein. Safety switches shall be heavy-duty, UL-listed, with amperage, voltage, number of poles, type (fusible or not fusible), and accessories, as detailed on the Plans. Safety switches shall be pad lockable in the off position. Include ground lugs or grounding kits with all safety switches. Safety switches located outdoors, or in damp areas, shall be in NEMA 3R (rain-tight) and NEMA 12 (dust-tight) or NEMA 4X enclosures without knockouts. Safety switches shall be as manufactured by Square D, or equivalent.

AR125967-2.7 GROUND RODS. Ground rods shall be 3/4-in. diameter by 10-ft long, UL-listed, copper-clad, with 10-mil minimum copper coating. Steel used to manufacture ground rods shall be 100 percent domestic steel.

AR125967-2.8 PIPE GROUNDING CLAMPS. Pipe grounding clamps for use with underground metallic conduits shall have bronze hardware, be corrosion-resistant, suitable for direct burial in earth or concrete, and UL 467 listed.

AR125967-2.9 CONCRETE. Concrete associated with the each REIL foundation and/or splice can shall conform to Item 610 Portland Cement Concrete of the Standard Specifications for Construction of Airports.

AR125967-2.10 LEGEND PLATES. Legend plates shall be required for all safety switches, circuit breakers, disconnects, etc. Legend plates shall be provided to identify the equipment controlled, the power source and voltage, and the function of each device. Legend plates shall be weather-proof and abrasion-resistant, phenolic material. Lettering shall be black letters on a white background, unless otherwise noted.

CONSTRUCTION

AR125967-3.1 INSTALLATION OF REILS. The Contractor shall coordinate relocation of the REIL units with the FAA, the Airport Director, and the Resident Engineer. The FAA contact is Mr. Mark Tien, Phone: 618-337-5660, Cell Phone: 618-593-6898. The Airport Director is Mr. Robert McDaniel, St. Louis Downtown Airport, 1680 Sauget Industrial Parkway, Sauget, Illinois 62206, Phone 618-337-6060. Prior to removing the REILS the Contractor will verify and confirm with the Resident Engineer the condition of the REILS and determine if they are in working order. The Contractor shall field-verify existing conditions and record wiring and connections prior to removal. The Contractor shall remove the existing REIL units after the existing Runway 12L-30R is closed. The Contractor will store the units in a secure location of his choosing, and will be responsible for replacing them in the same condition as noted prior to removal. Any damage to these units will be repaired by the Contractor at his own expense.

(a) Contractor shall coordinate work and any power outages with the FAA, the Airport Director and the Resident Engineer. Any shutdown of existing systems shall be scheduled with and approved by the Airport Director prior to shutdown. Once shut down, the circuits shall be labeled as such to prevent accidental energizing of the respective circuits. All personnel shall follow U.S. Department of Labor Occupational Safety & Health Administration (OSHA) 29 CFR Part 1910 Occupational Safety and Health Standards for electrical safety and lockout/tagout procedures including, but not limited to, 29 CFR section 1910.147 The Control of Hazardous Energy (lockout/tagout).

(b) The Contractor shall remove the existing REIL concrete bases and dispose of them off the Airport site in a legal manner. The existing bases shall not be reused. The holes left from the base removal will be filled with earth material. The earth material will be compacted to prevent any future settlement. The earth material will be taken from the proposed construction site. The disturbed area will be limed, fertilized, and seeded in accordance with Item 901. The liming, fertilizing, and seeding will be considered as an Incidental Item to the relocation of the REIL units.

(c) The REILS shall be relocated and installed at the locations shown on the Plans. Installation of REIL systems shall conform to FAA AC No. 150/5345-51 titled "SPECIFICATION FOR DISCHARGE-TYPE FLASHING LIGHT EQUIPMENT", the applicable portions of FAA-GL-918C "Department of Transportation Federal Aviation Administration, Great Lakes Region, Chicago, Illinois, Specification for Construction of Terminal Navigational Aid Facilities", the respective manufacturer's instructions, and as detailed on the Plans. A copy of FAA Specification FAA-GL-918C is included in the Appendix of these Special Provisions. The Contractor shall construct concrete bases for the REIL units, as detailed on the Construction Plans. All required trenching and cable between REIL Unit #1 and REIL Unit #2, associated hardware, mounting requirements, etc. shall be installed per the respective REIL manufacturer's installation instructions and recommendations, as detailed on the Plans, and shall be considered part of the installation with no additional compensation.

(d) The Contractor shall test the relocated units to assure that they are in proper working order. Contractor shall demonstrate proper operation and testing for the Resident Engineer.

AR125967-3.2 ELECTRICAL. The Contractor shall furnish and install all electrical materials necessary for complete and operational installation of the REIL systems, as shown on the Plans and detailed herein. The complete installation and wiring shall be done in a neat, workmanlike manner. All electrical work shall comply with the requirements of the NFPA 70 – National Electrical Code (NEC) most current issue in force. Electrical equipment shall be installed in conformance with the respective manufacturer's directions and recommendations for the respective application. Any installations which void the UL listing, ETL listing (or other third party listing), and/or the manufacturer's warranty of a device will not be permitted.

AR125967-3.3 CABLE INSTALLATION FOR REILS. Installation of cables shall conform to Item 108, the applicable sections of FAA AC 150/5345-51, the applicable portions of FAA-GL-918C "Department of Transportation Federal Aviation Administration, Great Lakes Region, Chicago, Illinois, Specification for Construction of Terminal Navigational Aid Facilities, per the respective equipment manufacturer's installation instructions and recommendations, and as detailed on the Plans. The Contractor will be responsible for installing all required power cables, control cables and guard wire between the REIL units and at the REIL units in accordance with the REIL unit manufacturer's installation instructions and recommendations and as detailed on the Plans. These cables will be considered incidental to the REIL relocation, and no additional compensation will be allowed.

AR125967-3.4 CONDUIT INSTALLATION FOR REILS. Installation of conduit shall conform to Item 110, the respective REIL manufacturer's installation instructions and/or recommendations, and as detailed on the Plans.

AR125967-3.5 INSTALLATION OF SAFETY SWITCHES. All safety switches shall be provided with appropriate mounting hardware and strut support, as applicable. Strut support shall be hot-dipped, galvanized steel strut support, Unistrut P-1000HG, or approved equal.

Provide zinc-rich paint applied to field cuts of strut support to minimum the potential for corrosion per the respective strut support manufacturer's recommendation. All hardware shall be corrosion-resistant. Mount safety switches securely in accordance with the manufacturer's recommendations/instructions and as required for the respective application. Inspect all safety switches for proper operation, tight and secure connections, and correctness. All safety switch enclosures shall be bonded to ground with a ground lug or bar and ground wire. Field cut holes in safety switch enclosures to accommodate conduit entrances. Where safety switches are provided with concentric knockouts, and the respective conduit does not use the largest knockout, install a grounding bushing with ground wire connections between the bushing and the ground bus. Do not use safety switch enclosures for a splice box or for a pull box. Do not route control wires or other circuit wiring through a safety switch. Where splices are required or other control circuit wires are installed in the respective conduit to a safety switch, provide a separate junction box to accommodate the splices and/or other circuit conductors. Provide NEMA 4 hubs for all conduit entries into safety switch enclosures that are rated NEMA 4, 4X to maintain NEMA 4, 4X rating. Provide weather-proof abrasion-resistant, engraved legend plates for each safety switch noting the device served, the power source, and the voltage system.

AR125967-3.6 GROUNDING FOR REILS. Grounding for REILS shall conform to the respective REIL manufacturer's installation instructions, as detailed on the Plans, and as specified herein. Furnish and install a 3/4-in. diameter by 10-ft long, copper-clad ground rod at each REIL unit as detailed on the Plans. Bond each REIL unit housing to the respective ground rod with a #6 AWG bare copper grounding electrode conductor. All connections to ground rods shall be exothermic-weld, as manufactured by Cadweld, Thermoweld, or Ultraweld. Connections to REIL unit frames shall be as recommended by the manufacturer or with a UL-listed grounding connectors.

AR125967-3.7 BURIED GUARD WIRE. Underground cables, which are not completely enclosed in ferrous metal conduit, shall be protected by a #6 AWG bare solid copper guard wire. The guard wire shall be embedded in the soil a minimum of 10 in. directly above, and parallel to, the lines or cables being protected. The guard wire shall be bonded to the grounding electrode system at each REIL unit and to ground rods at approximately 90 ft intervals using exothermic welds. Guard wire located between the REIL units will be considered an Incidental Item to the relocation of the REIL units, and no additional compensation will be allowed. Guard wire from the respective cable splice location to REIL Unit #1 will be paid for under Item AR108706, 1/C #6 Counterpoise.

AR125967-3.8 GROUNDING REQUIREMENTS. Grounding shall conform to the following, as applicable: The Contractor shall furnish and install all grounding shown on the Plans and/or as may be necessary or required to make a complete grounding system, as required by the latest NFPA 70 – National Electrical Code (NEC) in force. The reliability of the grounding system is dependent on careful, proper installation, and choice of materials. Improper preparation of surfaces to be joined to make an electrical path, loose joints, or corrosion can introduce impedance that will seriously impair the ability of the ground path to protect personnel and equipment and to absorb transients that can cause noise in communications circuits. The following functions are particularly important to ensure a reliable ground system:

(a) All products associated with the grounding system shall be UL-listed and labeled.

(b) All bolted or mechanical connections shall be coated with a corrosion-preventative compound before joining, Sanchem Inc. "NO-OX-ID "A-Special" compound, or equal.

(c) Metallic surfaces to be joined shall be prepared by the removal of all non-conductive material, per 2008 NEC Article 250-12. All copper bus bars must be cleaned prior to making connections to remove surface oxidation.

(d) Metallic raceway fittings shall be made up tight to provide a permanent low impedance path for all circuits. Metal conduit terminations in enclosures shall be bonded to the enclosure with UL-listed fittings suitable for grounding. Provide grounding bushings with bonding jumpers for all metal conduits entering service equipment (meter base, CT cabinet, main service breaker enclosure, etc.), generator breaker enclosures, and automatic transfer switch enclosures. Provide grounding bushings with bonding jumpers for all metal conduits entering an enclosure through concentric or eccentric knockouts that are punched or otherwise formed so as to impair the electrical connection to ground. Standard locknuts or bushings shall not be the sole means for bonding where a conduit enters an enclosure through a concentric or eccentric knockout.

(e) Furnish and install ground rings, ground fields, and/or ground rods at all locations where shown on the Plans or specified herein. Ground rods shall be 3/4-in. diameter, 10 ft long, UL-listed, copper-clad with 10 mil. minimum copper coating. Top of ground rods shall be a minimum of 30 in. below finish grade, unless otherwise noted on the Plans. Ground rods shall be spaced, as detailed on the Plans, and in no case spaced less than one-rod length apart. All connections to ground rods and/or ground rings shall be made with exothermic, weld-type connectors, Cadweld by Erico Products, Inc., Solon, Ohio (Phone: 1-800-248-9353), Thermoweld by Continental Industries, Inc., Tulsa, Oklahoma (Phone: 918-663-1440), or Ultraweld by Harger, Grayslake, Illinois (Phone 1-800-842-7437). Exothermic-weld connections shall be installed in conformance with the respective manufacturer's directions using molds, as required for each respective application. Bolted connections will not be permitted at ground rods or at buried grounding electrode conductors. Grounding electrode conductors shall be bare-stranded, copper-sized, as detailed on the Plans. In addition to the grounding work described herein and shown on the Plans, the Contractor shall test the made electrode ground field/ground ring with an instrument specifically designed for testing ground field systems. If ground resistance exceeds **10 Ohms**, contact the Resident Engineer for further direction. Copies of ground field test results shall be furnished to the Resident Engineer, upon request, for review and record purposes.

(f) All connections, located above grade, between the different types of grounding conductors shall be made using UL-listed, double-compression, crimp-type connectors or UL-listed, bolted, ground connectors. For ground connections to enclosures, cases, and frames of electrical equipment not supplied with ground lugs, the Contractor shall drill required holes for mounting a bolted, ground connector. All bolted, ground connectors

shall be Burndy, Thomas and Betts, or equal. Tighten connections to comply with tightening torques in UL Standard 486A to assure permanent and effective grounding.

(g) All metal equipment enclosures, conduits, cabinets, boxes, receptacles, etc. shall be bonded to the respective grounding system.

(h) Each new feeder circuit and/or branch circuit shall include an equipment ground wire. Metal raceway or conduit shall not meet this requirement. The equipment ground wire from equipment shall not be smaller than allowed by 2008 NEC Table 250-122 "Minimum Size Conductors or Grounding Raceway and Equipment." When conductors are adjusted in size to compensate for voltage drop, equipment-grounding conductors shall be adjusted proportionately according to circular mil area. All equipment ground wires shall be copper, either bare or insulated, green in color. Where the equipment grounding conductors are insulated, they shall be identified by the color green, and shall be the same insulation type as the phase conductors.

(i) Bond the main electrical service neutral to ground at the main service disconnect. Bond the service neutral to ground at one location only per the NEC. A grounding connection shall not be made to any neutral circuit conductor on the load side of the service disconnecting means, except as permitted by 2008 NEC 250-24.

(j) All exterior metal conduit, where not electrically continuous because of manholes, handholes, non-metallic junction boxes, etc., shall be bonded to all other metal conduit in the respective duct run, and at each end, with a copper-bonding jumper sized in conformance with 2008 NEC 250-102. Where metal conduits terminate in an enclosure where there is not electrical continuity with the conduit and the respective enclosure, provide a bonding jumper from the respective enclosure ground bus to the conduit sized per 2008 NEC 250-102.

(k) Install grounding electrode conductors and/or individual ground conductors in Schedule 40 or Schedule 80 PVC conduit. Where grounding electrode conductors or individual ground conductors are run in PVC conduit, do not completely encircle conduit with ferrous and/or magnetic materials. Use non-metallic, reinforced fiberglass strut support. Where metal conduit clamps are installed, use nylon bolts, nuts, washers, and spacers to interrupt a complete metallic path from encircling the conduit.

(l) **If local codes dictate that individual grounding conductors must be run in metal conduit or raceway, then the conduit or raceway must be bonded at each end of the run with a bonding jumper sized equal to the individual grounding conductor or as required by 2008 NEC 250-102.** ***(Note the use of metallic conduit for an individual grounding conductor must be approved by the Engineer).*** **This does not apply to AC equipment grounding conductors run with AC circuits.**

BASIS OF PAYMENT

AR125967-4.1 Payment shall be made at the contract unit price per pair for REIL Relocation. This price and payment shall be full compensation for removing the existing REIL units; storing the units; removal and disposal of the existing REIL bases and backfilling of the holes; furnishing, installing, and construction of the new REIL bases; for furnishing and installing safety switches, junction boxes, supports, conduits, ducts, and all other incidentals required to provide the electrical power to the relocated REIL units; for furnishing and installing all materials; for all excavating, labor, tools, testing, grounding, equipment, and incidentals necessary to complete this Item of work. All cable, wiring, and splices at the REIL units, and between the REIL units, shall be incidental to Item AR125967 Relocate REILS, and no additional compensation will be allowed.

REIL power cables from the respective splice location of existing cables to new cables up to REIL Unit #1 will be paid for under Item AR108652, 3/C #2 600 V UG Cable In UD. REIL control cables from the respective splice location of existing cables to new cables up to REIL Unit #1 will be paid for under Item AR108806, 6 Pair Control Cable. The counterpoise conductor, installed in the trench with the power and control cables from the respective splice location of existing cables to new cables up to REIL Unit #1 will be paid for under Item AR108706, 1/C #6 Counterpoise.

Payment will be made under:

Item AR125967 Relocate REILS - per pair

AR150530
TRAFFIC MAINTENANCE

DESCRIPTION

This Item of work shall consist of providing barricades at the construction site to protect aircraft from entering into the work area. The barricades will be lighted, marked, and flagged so that they are plainly visible night or day to the pilots operating the aircraft. The barricades will be standard highway barricades with a flashing red light. The barricades will require weighting down by sand bags. The placement locations for the barriers and barricades are detailed on the Plans. This item of work shall also consist of furnishing a security guard person at the existing gate which will control access to the proposed haul route.

CONSTRUCTION METHODS

At commencement of the work, the Contractor shall place barricades to block access to the construction site from the adjacent taxiways. The barricades will be placed on Taxiways B5 and B6 at a distance of 85 ft north of Taxiway Bravo centerline. Barricades are also required 85 ft east and west of the centerline of Taxiway B4 on Runway 12L/30R. Barricades will be required on Taxiway B when construction equipment is within 85 ft of its centerline as shown. All proposed barricades are shown on Sheet 3 of the Construction Plans. The barricades will be spaced at 8 ft, end to end. The barricades will be removed once the work is completed.

Whenever the Contractor is in a continuous hauling operation, the access gate to the proposed haul route may remain open. The Contractor will furnish a security guard person to insure only construction vehicles assess the airport through this gate. Whenever the Contractor is not in a continuous hauling operation, the access gate will be closed and no security guard will be required.

BASIS OF PAYMENT

Payment will be made at the contract unit price per lump sum for providing, maintaining, and removing barricades for the project site to delineate the work site and prevent aircraft from entering the work area. Payment will also include furnishing a security guard person at the access to the proposed haul route. The price shall be full compensation for furnishing and installation of all equipment and materials; maintenance; for all labor and incidentals necessary to complete this Item of work.

Payment will be made under:

Item AR150530 Traffic Maintenance - per lump sum

AR150540
HAUL ROUTE

DESCRIPTION

This Item of work shall consist of construction, maintenance, and removal of the haul route and equipment parking area at the locations shown on the Construction Plans. The haul route and equipment parking area will be constructed and maintained in accordance to these Specifications.

CONSTRUCTION METHODS

The proposed equipment parking area will be constructed as shown on sheet no. 4 of the construction plans. The Contractor's employees will also park their personal vehicles in this area. Only Contractor vehicles will be allowed beyond this point.

The Contractor shall construct the haul route to provide access to the construction site. The haul route will be maintained as not to cause delay to the proposed construction. The Contractor will be required to employ methods to control dust and tracking of mud on the grade of the construction site and paved areas.

The limits of the haul route will be delineated by the Contractor by placing ribbon lath at intervals of 100 ft on each side of the route.

The Contractor's access to the construction site will be from existing Goose Lake Road on the east side of the Airport. The existing perimeter fence at the proposed haul route location has an existing gate. The Contractor will use this gate as his proposed access. The Contractor will furnish a pad lock to interlock with an airport pad lock so he and airport personnel can access through the gate by using their own lock. During the hours of construction, the gate will remain closed and locked, unless the Contractor is continuously hauling material to and from the site. At that time, the Contractor will provide a security guard at the gate. The Contractor is required to have all vehicles stop for review by the person maintaining security. See Sheet 4 in the Construction Plans for a detail on the haul route.

The haul route will cross one drainage swale and Goose Lake Ditch. The Contractor will furnish and install a corrugated pipe in the drainage swale to allow passage of storm water under the haul route. Prior to actually accessing the west side of Goose Lake Ditch, the Contractor will be required to install the three 9'-9" x 6'-7" arched pipes. Once these three pipes have been installed, the Contractor will mound at least 4 feet of unclassified excavated material over the proposed earth grade to insure the movement of construction equipment over the pipes will not damage them. Once the project is completed the Contractor will remove the mounded unclassified excavated material and use it to construct the proposed grading on the east side of Goose Lake Ditch. Any excess material will be placed in the proposed floodplain mitigation waste area.

The Contractor is required to investigate for buried utilities that the haul road or equipment parking area may cross. The Contractor is to provide sufficient protection for any buried utilities that the haul road and equipment parking area crosses. Any utilities damaged by the Contractor will be repaired by him at no cost to the project. The Contractor will take special precautions during construction so as not to damage the existing roads, taxiways, buildings, and other existing improvements. Any damage to the existing improvements during construction shall be repaired or replaced by the Contractor at his own expense. All active pavement areas shall be kept broom clean at all times.

Restoration: The Contractor shall restore the haul route and equipment parking area when they are no longer required. All materials used for the haul route and equipment storage area will be removed from the Airport site. The haul route and equipment parking area will be graded to their original elevations and disked to remove the compaction of the earth that was caused by the vehicular traffic. The area disturbed by the haul route will be seeded and mulched in accordance with Item 901 - Seeding and Item 908 - Mulching. The turfing of the haul route is considered part of this Item.

Safety: All traffic control, safety, and permitting requirements associated with the construction and use of the haul route are the responsibility of the Contractor.

BASIS OF PAYMENT

Payment will be made at the contract unit price per lump sum for constructing the haul route and equipment parking area, as specified. This price shall be full compensation for furnishing and installation of all materials; restoration, and turfing; for all labor, equipment, and incidentals necessary to complete this Item of work.

Payment will be made under:

Item AR150540 Haul Route - per lump sum

ITEM AR152
EXCAVATION AND EMBANKMENT

DESCRIPTION

125-1.1. Add the following to this section:

"This Item includes bringing off-site borrow to the Airport and placing that material under the proposed pavement section. Also included is moving borrow excavation from the floodplain mitigation area east of Goose Lake Ditch and placing that material outside the limits of the off-site borrow, as shown in the Construction Plans. This Item also includes removing additional unclassified excavation from the floodplain mitigation area and placing it on the northeast edge of the Airport outside the 100-year floodplain. This area will be identified in the field by the Resident Engineer.

The Contractor is required to test the off-site borrow material and provide the Resident Engineer with the maximum dry density and optimum moisture.

The limits of the off-site borrow will extend 3 ft past the bottom of the oversize aggregate and then at a 2:1 slope down to the existing subgrade. All material outside of the 2:1 slope that is required to construct the embankment will be considered borrow excavation and unclassified excavation. The cross sections in the Construction Plans detail this description. The borrow excavation is depicted as fill on the cross-sections, and unclassified excavation is shown as cuts."

ITEM AR156511
DITCH CHECK

DESCRIPTION

This Item of work shall consist of placing and maintaining straw bales to form ditch checks in accordance with the details shown on the Construction Drawings as partial implementation of a Stormwater Pollution Prevention Plan (SWPPP). The measures of the Plan and locations of the ditch checks are shown on the Construction Drawings and shall be constructed in accordance with the Illinois Environmental Protection Agency (IEPA) Standards and Specifications for soil erosion and sediment control and these Special Provisions.

CONSTRUCTION METHODS

The Contractor shall furnish, install, and maintain the straw bales required for the ditch checks at the locations shown on the Construction Drawings. The ditch checks shall be inspected frequently and replaced or repaired, as needed, to the satisfaction of the Resident Engineer throughout the project duration. Replacement of a ditch check will not warrant compensation for an additional ditch check. Once a stand of grass is established and accepted by the Engineer, the Contractor shall remove the straw bale ditch checks, and dispose them off the Airport property.

METHOD OF MEASUREMENT

The quantity of ditch checks to be paid for shall be the number of ditch checks constructed as specified and accepted by the Resident Engineer.

BASIS OF PAYMENT

Payment will be made at the contract unit bid price for Ditch Checks. This price shall be full compensation for furnishing the required materials and constructing the Ditch Checks to the details shown and the Specifications herein, for maintaining and replacing the Ditch Checks, as needed, for the duration of the project, and their removal once an acceptable stand of grass has been established on the site.

Payment will be made under:

Item AR156511 Ditch Check – per each

ITEM AR156521
HEADWALL PROTECTION

DESCRIPTION

This Item of work shall consist of placing and maintaining straw bales and silt fence to protect the 48-in. RCP end sections from silt in accordance with the details shown on the Construction Drawings as a partial implementation of a SWPPP. The measures of the Plan and the locations of the headwall protection are shown in the Construction Plans, and shall be constructed in accordance with IEPA Standards and Specifications for soil erosion and sediment control and these Special Provisions.

MATERIALS

Erosion Control Fence. The proposed silt fence fabric shall conform to the Specifications listed in Item AR156000 – Erosion Control, adopted July 1, 2004.

CONSTRUCTION METHODS

The Contractor shall furnish, install, and maintain the straw bales and silt fence required for the headwall protection at the locations shown on the Construction Drawings. The headwall protection shall be inspected frequently and straw bales replaced or repaired, as needed, to the satisfaction of the Resident Engineer throughout the duration of the project. Replacement of straw bales or silt fence is considered incidental to the headwall protection, and no additional compensation will be allowed. Once a stand of grass is established and accepted by the Engineer, the Contractor shall remove the straw bales and silt fence and remove them from the Airport property.

METHOD OF MEASUREMENT

The quantity of headwall protection to be paid for shall be the number of headwall protection constructed as detailed and specified and accepted by the Resident Engineer.

BASIS OF PAYMENT

Payment will be made at the contract unit bid price for Headwall Protection. This price shall be full compensation for furnishing the required materials and constructing the Headwall Protection to the details shown and the Specifications herein for maintaining and replacing the straw bales and silt fence, as needed, for the duration of the project, and their removal, once an acceptable stand of grass has been established on the site.

Payment will be made under:

Item AR156521 Headwall Protection – per each

AR156540
RIPRAP

DESCRIPTION

This Item shall consist of furnishing, transporting, and placing a protective course of stone or broken concrete laid as riprap in the areas designated on the Plans.

MATERIALS

The riprap material shall be RR #4, with a 6-in. bedding in accordance with the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007.

The filter fabric shall be in accordance with Item AR156513 Separation Fabric, Supplemental Specifications and Recurring Special Provisions, adopted July 1, 2004.

CONSTRUCTION METHODS

Prior to placement of the riprap material, the Contractor will undercut the designated area 6" for bedding and 12" for riprap material below finish grades. The undercut material will be used as embankment fill material. The riprap course will be a minimum of 16 in. in total depth.

The riprap shall be placed in accordance with procedures set forth in the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007.

METHOD OF MEASUREMENT

The quantity of riprap to be paid for as required in the proposal shall be the number of sq. yds. of riprap material placed and accepted by the Resident Engineer. The bedding material will be incidental to the riprap. The separation fabric will be paid for under Item AR156513 Separation Fabric.

BASIS OF PAYMENT

Payment shall be made at the contract unit price bid per sq. yd. for riprap. This price shall be full compensation for undercutting, furnishing, and placing of all materials, and for furnishing all labor, equipment, tools, and incidentals necessary to complete this Item of work.

Payment will be made under:

Item AR156540 Riprap - per sq. yd.

ITEM AR208540
OVERSIZE AGGREGATE

DESCRIPTION

This Item of work shall consist of placing oversized crushed aggregate to establish a stable subbase under the proposed pavement and pipe arches. The subbase will have a depth of 6 in. under the proposed pavement and 1 ft under the pipe arches and will be placed to the grades and locations, as shown on the Construction Plans and cross-sections. The oversize aggregate shall be installed in accordance to the Standard Specifications for Construction of Airports, Item 208 procedures, with the following exceptions, as outlined below.

MATERIALS

The oversize aggregate material shall be a CA-2 course aggregate meeting the gradations specified under Article 1004.01 in the Standard Specifications for Road and Bridge Construction adopted January 1, 2007. A 3-in. top size will be allowed for the aggregate material.

CONSTRUCTION METHODS

The oversize crushed aggregate shall be constructed on top of the separation fabric, and shall be constructed to the line and elevations, as shown on the Construction Plans. The subbase course shall be compacted with a minimum of three passes with a vibratory roller.

BASIS OF PAYMENT

Payment will be made at the contract unit bid price per ton of oversize aggregate, which price and payment will constitute full compensation for preparing subgrade, furnishing, hauling, and placing the materials; for spreading, compacting, and rolling; and for furnishing all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Item AR208540 Oversize Aggregate - per ton

ITEM AR901
SEEDING

DESCRIPTION

901-1.1 Add the following to this section:

The proposed floodplain mitigation area will be seeded in accordance with the seeding formula stated in this specification. All other disturbed areas will be seeded in accordance with the seeding formulas stated in the Supplemental Specification and Recurring Special Provisions, date July 1, 2004.

MATERIALS

901-2.1 Seed. Add the following to this section:

The proposed seed formula no. 1 for the proposed floodplain mitigation area will consist of an IDOT Class 4B Wetland Grass & Sedge Mixture.

44.64%	Annual Ryegrass	25 lbs. / acre
44.64%	Spring Oats	25 lbs. / acre
10.72%	Wetland Grasses (below)	6 lbs. / acre
		56 lbs. / acre

Wetland Grasses:

Species	% by Weight
Blue Joint Grass	12
Lake-Bank Sedge	06
Awl-Fruited Sedge	06
Tussock Sedge	06
Fox Sedge	06
Needle Spike Rush	03
Blunt Spike Rush	03
Fowl Manna Grass	14
Common Rush	06
Slender Rush	06
Torrey's Rush	06
Rice Cut Grass	10
Hard-Stemmed Bulrush	03
Dark Green Rush	03
River Bulrush	03
Softstem Bulrush	03
Cord Grass	04

Lime. As per the Supplemental Specifications and Recurring Special Provisions, dated July 1 2004.

901-2.3 Fertilizer. As per the Supplemental Specifications and Recurring Special Provisions, dated July 1 2004.

BASIS OF PAYMENT

901-5.1 Payment will be made under:

Item AR901511 Seeding-Formula 1 ---- per acre.

ITEM AR800402
ADD 2 MODULE WITH SIGN BASE EXTENSION

GENERAL

This Item of work shall consist of adding two modules to an existing sign to make the new sign large enough to display the correct information. The proposed modules will have sign panels that will read according to the new sign description. The concrete foundation of the existing sign is not large enough to allow the proposed extension without first constructing a larger concrete base.

MATERIALS

The proposed module and sign panels will be as manufactured by Standard Sign, Inc., brand name Lumacurve.

The proposed concrete will be in accordance with Item 610 "Structural Portland Cement Concrete".

CONSTRUCTION METHODS

The existing concrete foundation will be extended to extend a minimum of 2 in. beyond the end of the sign once it has the additional modules attached. The concrete base will be constructed in accordance with the details and notes shown on the Construction Plans. No. 3 re-bar will be drilled and grouted into place to connect the existing concrete base to the proposed concrete extension.

Anchor bolts will be drilled and secured into the concrete foundation. The proposed modules will be attached to the concrete foundation. The Contractor will attach the proposed modules to the existing taxi guidance sign and interconnect the existing to the proposed so it operates and looks like a single taxi guidance sign.

The existing isolation transformer may be undersized for the new taxi guidance sign. It will be the Contractor's responsibility to determine if the isolation transformer is undersized and replace it with a new one. The Contractor will verify that the proposed isolation transformer is properly sized and compatible with the respective signs. The Contractor will submit his verification as part of his Shop Drawing submittals. According to Standard Sign, Inc., the required isolation transformers for the signs are as follows:

One Module sign – 45-watt transformer
Two Module sign – 100-watt transformer
Three Module sign – 100-watt transformer
Four Module sign – 200-watt transformer

If the sign modification takes the existing sign to more than four modules, then the Contractor will have to provide bases for two signs (one – 4-module and one 1-module), as detailed on the Construction Plans.

The Contractor will place earth backfill material around the concrete sign base so the drop-off around the sign base is no more that 1½ in. There is borrow material on the Airport site, and the Contractor will be allowed to use this material. The Airport personnel can direct the Contractor to the location of the borrow material and the route the Airport desires the Contractor to take to the borrow area.

All disturbed areas around the taxi guidance signs will be smooth-graded to match the surrounding area, seeded, and mulched in accordance with Items 901 "Seeding" and 908 "Mulching". Liming and fertilizing of the disturbed areas will not be required.

Obtaining the required borrow material, placing the borrow material, grading, seeding, and mulching the disturbed areas will be considered as an Incidental Item to this Item of work, and no additional compensation will be allowed.

BASIS OF PAYMENT

Payment will be made at the contract unit price per each type of module to be added, completed with concrete base extension, isolation transformer, required site work, and accepted. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials; for all backfilling with aggregate and earth backfill, grading, seeding, mulching; and for all labor, equipment, tools, and incidentals necessary to complete this Item.

Payment will be made under:

Item AR800402 Add 2 Module with Sign Base Extension - per each

ITEM AR800430
LIGHTED RUNWAY CLOSURE MARKER

DESCRIPTION

This item shall consist of furnishing, installing and maintaining two lighted runway closure markers for the duration of the runway 12L/30R closure. The specifications for the equipment can be found in Advisory Circular 150/5345-55, latest edition. At the end of the project, the portable lighted runway closure markers will be turned over to the airport in full operating condition.

EQUIPMENT

The specified equipment manufacturer and model will be Sherwin Industries Model RCM, Portable Lighted Runway Closure Marker or approved equal.

CONSTRUCTION METHODS

One lighted runway closure marker will be placed on the runway designation numbers on runway end 30R. On runway end 12L, the other lighted runway closure marker will be placed outside the taxiway B4 and A4 safety areas (86ft from Taxiway B4/A4 centerline), or as directed by the Resident Engineer.

METHOD OF MEASUREMENT

The installation, maintenance and removal of the portable lighted runway closure markers shall be measured as a lump sum item completed and accepted by the Resident Engineer. This payment will be distributed as follows: 25% after initial installation; 50% at approximately half way through the project, based on the approved progress schedule; 25% when the units are turned over to the airport.

BASIS OF PAYMENT

This item of work will be paid for at the contract unit bid price per lump sum to furnish, place, and maintain the lighted runway closure markers, which price shall be full compensation for furnishing all labor, equipment, and incidentals necessary to complete this item of work.

Payment will be made under:

Item AR800430 Lighted Runway Closure Marker - per lump sum.

AR800433
PIPE ARCH 9'-9" X 6'-7"

DESCRIPTION

This Item of work consists of placing pipe arches in Goose Lake Ditch. All work to route the water around the proposed work area is included in Item AR800434 - Stormwater Bypass Goose Lake Ditch.

MATERIALS

The pipe arch shall be galvanized steel HEL-COR pipe meeting the Specifications found in Section 542 – Pipe Culverts and Section 1006.01 Corrugated Steel Pipe and Corrugated Steel Pipe Arch of the Standard Specifications for Road and Bridge Construction, adopted January 1, 2007, or approved equal.

The pipe span will be 9 ft - 9 in., and rise will be 6 ft – 7 in. The pipe arches should have a bottom step bevel cut at a 2:1 slope, as shown on the Plans.

CONSTRUCTION METHOD

The method of construction should follow Section 542.04 Method 1 construction of the Standard Specifications for Road and Bridge Construction, adopted January 1, 2007.

The pipe arch will be backfilled according to the requirements for Flexible Pipe as stated in the Standard Specifications for Road and Bridge Construction, Adopted January 1, 2007, with the following difference. The aggregate backfill shall be placed to a height even with the top of the pipe arch. Earthen fill will then be place from the top of the pipe arch to the proposed elevations.

There will be a 1-ft undercut of the proposed pipe to provide bedding for the pipes. The excavation of this area will be considered incidental to the pipe arches. The bedding will consist of separation fabric and 1 ft of oversize aggregate. The proposed separation fabric and oversize aggregate that is to be placed under the pipe arches are not included in this Item, but are paid for under the separation fabric and oversize aggregate line items.

METHOD OF MEASUREMENT

Pipe culverts will be measured for payment in place in feet, except the length measured will not exceed the length shown on the Plans or authorized in writing by the Engineer.

BASIS OF PAYMENT

Payment shall be made at the contract unit price for constructing the pipe arches in Goose Lake Ditch. This price shall be full compensation for furnishing all materials, labor, equipment, and any incidentals necessary to complete the work shown on the Plans and specified herein.

Payment will be made under:

Item AR800433 Pipe Arch 9'9" X 6'-7" – per. lin. ft

AR800434 STORMWATER BYPASS GOOSE LAKE DITCH

DESCRIPTION

This Item shall consist of constructing temporary earthen dams and a temporary culvert in Goose Lake Ditch to provide a path for stormwater around the construction of permanent culverts in Goose Lake Ditch. The construction of this Item will include all stages, as described below. Only the Items that are temporary in nature will be paid under this Item. Permanent Items will be paid for separately. The construction of the Temporary Items shall conform to the lines and grades shown in the Plans and in conformance with the Specifications.

Goose Lake Ditch is regulated by the Corp of Engineers (COE). It is approximately 25 ft wide at the bottom and 35-40 ft wide at the top of slope. It usually has water flowing slowly through it. The depth of the water has been observed to be 8 in. to 14 in. in depth during dry weather. This ditch is crucial to the flood control management of this area. It is the intent of this project not to limit the capacity of this ditch during potential flooding events. Therefore, the temporary dams will be constructed such that high water will be able to overtop them and possibly damage the temporary dams. As a result, there is a possibility of water entering the permanent culvert construction area.

All associated labor, equipment, materials, and incidentals associated with constructing the temporary dams and temporary culvert is considered incidental to Item AR800432. In the event of a flooding occurrence, the Contractor will not be paid to reconstruct any temporary dams or culverts. All COE permits to work in Goose Lake Ditch will be acquired by the Airport, and will not be the responsibility of the Contractor.

MATERIALS

The earthen material used to construct the temporary dams shall be approved by the Project Engineer prior to construction.

Plastic sheeting shall be used on the face of the temporary dams and must be one continuous piece from the bottom of the dam to the top of the dam. Splices will be allowed across the face of the dam provided there is a minimum of 5 ft overlap. Concrete blocks or other approved weights shall be placed on top of the plastic sheeting at the top of the dam. The plastic sheeting shall also be placed on the bottom of the dam, and shall be held in place by the weight of the dam, or other approved method.

The temporary culvert will be a minimum of 24 in. in diameter and a maximum of 36 in. in diameter. The culvert shall be corrugated metal pipe. The culvert must be free of dents, holes, and any other defect that may hinder the function of the pipe.

CONSTRUCTION METHOD

This Item will be constructed in several stages, as outlined in the Plans and described below.

Stage 1: Construct Temporary Dams and Pipe

- Place the temporary culvert in the ditch at 10 ft right of baseline on the existing grade.
- Place plastic sheeting on the bottom of the ditch, leaving room for the culvert. The plastic sheeting should be placed such that a minimum of 3 ft is covered by the base of the dam.
- Construct the temporary earthen dams to the dimensions shown in the Plans. The maximum lift thickness shall be 8 in. However, if the water is deeper than 8 in., the first lift of material can be increased in order to get above the water elevation. The material should be compacted to the satisfaction of the Resident Engineer. The dam height should be approximately 5 ft.
- Place the plastic sheeting on the face of the dams and secure it at the top of the dam by concrete blocks, or other approved method.

Stage 2: Construct Pipe Arch #1

- Pump water out of construction area.
- Undercut the proposed pipe arch base 1 ft. Rough smooth the subgrade.
- Install separation fabric and oversize aggregate, compact as specified in the 208 Specification.
- Construct Pipe Arch #1 located at 13 ft left of ditch baseline.
- Place rip rap around pipe arch openings.

Stage 3: Construct Temporary Dams and Change Water Route

- Construct temporary earthen dams to allow for the installation of the other pipe arches, as shown in the Plans. The construction method will be the same as in Stage 1. Water may be backed up for a short period of time during the switchover. This switchover should be done as quickly as possible to reduce the pressure on the temporary dams.
- Remove temporary dams and culvert constructed in Stage 1.
- Establish flow through new pipe arch.

Stage 4: Construct Pipe Arches #2 and #3

- Undercut the proposed pipe arch bases 1 ft. Rough smooth the subgrade.
- Install separation fabric and oversize aggregate, compact as specified in the 208 Specification.
- Construct Pipe Arches #2 and #3 located on the baseline and 13 ft right of ditch baseline, respectively.

- Place rip rap around pipe arch openings.
- Place backfill material over all pipes and construct embankment to proposed grade.

Stage 5: Remove Remaining Temporary Dams

- Remove all material placed in the ditch.
- Establish flow through all pipes.

Stage 6: Install Dirt over the Pipes

- The Contractor will install an additional 3 feet of unclassified excavated material over the top of these pipes to protect them during the movement of equipment over them. The Contractor will delineate the area of additional protection with lathe and ribbon so all traffic will be directed to this crossing area. Once the project has been completed the Contractor will grade the crossing area to the proposed grades. The additional dirt will be used on either side of the pipes to complete the proposed grading or will be placed in the mitigation waste area.

METHOD OF MEASUREMENT

The installation and removal of the Temporary Items used to construct the pipe arches shall be measured as a lump sum item completed and accepted by the Engineer.

BASIS OF PAYMENT

Payment shall be made at the contract unit price for constructing the temporary stormwater bypass in Goose Lake Ditch. This price shall be full compensation for furnishing all materials, pumps, labor, equipment, and any incidentals necessary to complete the work shown on the Plans and specified herein.

Payment will be made under:

Item AR800434 Stormwater Bypass Goose Lake Ditch - per lump sum

APPENDIX A

- FAA-GL-918C DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION, GREAT LAKES REGION, CHICAGO, ILLINOIS, SPECIFICATION FOR CONSTRUCTION OF TERMINAL NAVIGATIONAL AID FACILITIES

- SPECIFICATIONS SUPPLEMENTAL TO SPECIFICATION FAA-GL-840B AND FAA-GL-918C

PLEASE RECYCLE.

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
GREAT LAKES REGION
CHICAGO, ILLINOIS

FAA-GL-918C
November 30, 1994

SPECIFICATION FOR CONSTRUCTION OF TERMINAL NAVIGATIONAL AID FACILITIES

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DIVISION 1 - GENERAL REQUIREMENTS
SECTION 1A
SPECIAL CONDITIONS

1A.1 SCOPE.

a. This specification covers general requirements for construction of an Instrument Landing System (ILS) and Visual Guidance Lighting Systems. The complete ILS consists of several component facilities. The term visual guidance lighting systems covers lighting facilities. Refer to the solicitation package for types of facilities to be constructed. This specification includes requirements common to all facilities and requirements specific to individual facility types. In general, all parts of this specification covering construction required on project drawings and in other contract documents, are applicable to this contract.

b. The contractor shall furnish all plant, labor, materials (except Government-furnished property), equipment, energy, transportation, and other services necessary to construct all elements of the systems required in the specifications, drawings, and other contract documents. Construction shall include all miscellaneous and incidental work necessary for a complete and operational system, whether or not such work is specifically shown or specified.

1A.2 GOVERNMENT-FURNISHED PROPERTY. Government-furnished property (GFP) is also known as Government-furnished material (GFM). Government-furnished property for this contract is shown on the Government-Furnished Property List. The Government-Furnished Property List is the sole contract document which validly identifies Government-furnished property under this contract. The contract drawings give little or no indication of which items are Government-furnished. To determine whether an item of equipment or other material is Government-furnished, see the Government-Furnished Property List. For Government-furnished property, the contractor shall provide for and pay for loading of this property at the storage location (location indicated on the Government-Furnished Property List) and transportation to, and unloading at, the job site.

1A.3 CONTRACTOR-FURNISHED MATERIAL. The contractor shall furnish all material under this contract per Paragraph 1A.1b, except the Government-furnished property identified on the Government-Furnished Property List. The instruction install on the drawings means furnish and install unless the item(s) to which the instruction applies is Government-furnished property included in the Government-Furnished Property List. The contractor shall be aware that certain materials to be furnished by the contractor, may be long-lead-time items. Therefore, the successful bidder should determine the availability of all material immediately after contract award, and initiate procurement action on long-lead-time items at the earliest possible date. To facilitate the use of this specification in procuring material and equipment, see the Material and Equipment Specification Index at the end of this section. Where the specifications mention material or equipment by brand, it is regarded as a known acceptable source, as it meets specifications.

1A.4 SUBMITTALS AND BRAND NAME USAGE.

a. Introduction. Each product required for use in the contract drawings and specifications must meet the actual minimum needs of the Government as demonstrated in the salient (prominent, important) characteristics for that product. If a brand name product is used in the drawings or specifications, it should be regarded as a "known acceptable source" (i.e., a product that meets the actual minimum needs, and demonstrates the appropriate salient characteristics). The product used can be identical or equal to the brand name product or known acceptable source in meeting the salient characteristics, but it need not exceed the actual minimum requirements. Any brand name product or known acceptable source mentioned will, however, not be required for use in order to comply with the specification or drawing unless those documents make it clear that the brand name product is required, and substitution is prohibited. The following submittal procedure shall be followed in order to:

(1) Insure adherence to functional and quality standards in substitute contractor-furnished material.

(2) Inform the FAA of the contractor's plans to use certain material and equipment, e.g., splicing materials and tools, even if they are a known acceptable source.

b. Definition. A submittal is a collection of information required by specifications, or by the Contracting Officer, presenting detailed information on:

(1) Material or equipment items the contractor proposes to use.

(2) Methods or plans of action which the contractor intends to employ in specific situations.

c. Requirements. Submittal requirements are formally defined in a paragraph of the contract Special Specifications. Submittal guidance of varying extent is presented in this specification (FAA-GL-918C), as indicated in the Material and Equipment Specification Index at the end of this section. Each product that a contractor wishes to use that is not a known acceptable source, must be approved before use, by the Contracting Officer or the Contracting Officer's designee. To gain approval, the contractor must submit documents and/or samples that will demonstrate that that product clearly will meet the Government's minimum needs, and demonstrates appropriate salient characteri-stics. All submittals must be in writing. The Contracting Officer shall have the right to require submittals from the contractor where the contractor makes an unsolicited change proposal. The information presented in a submittal shall be sufficient to demonstrate that all specification requirements for the subject material, equipment, methods,

1A.4c

or plans, are met by the contractor's proposal. The informational materials may include documents such as shop drawings, sketches, calculations, data sheets, written plans of action, manufacturers' catalog cuts, brochures, and/or specification sheets. If the specifications or Contracting Officer requires actual samples of material or equipment, the contractor shall provide them. For any documentary submittal, the contractor shall submit four identical sets of documents.

d. Submittal Review. When submitting before the Notice to Proceed date, the contractor shall send the submittal package(s) directly to the Contracting Officer. When submitting after contract work has begun, the contractor shall give submittal packages to the Resident Engineer, who will forward them promptly to the Contracting Officer. The Contracting Officer may personally evaluate the submittal, or request FAA engineers to evaluate it. In either case, the submittal will return directly from the Contracting Officer to the contractor, with the Contracting Officer's approval, approval with comments, or disapproval.

e. Submittal Time Frame. To provide adequate time for document transmission and submittal review, the FAA reserves the right to take two weeks to complete a review, transmission date to transmission date. Terminal navi-gational aid contracts are brief contracts. The review process can therefore span a substantial portion of the contract period. For this reason:

(1) The contractor is urged to initiate submittals as soon as feasible after contract award, and to expedite document transmission.

(2) The Contracting Officer and other reviewers (if any) will expedite reviews and document transmission insofar as feasible.

Maximum use of fast document transmission modes (e.g., fax, couriers, and overnight freight forwarders) is encouraged.

f. Procurement Before Approval. The contractor is advised not to procure any item for which submittal approval is required but not yet granted. If approval is denied, the contractor will be prevented from installing the disapproved item(s). The contractor must transmit a new submittal package for the new items replacing the disapproved items, and must procure only approved items. The contractor shall take responsibility for the delivery and installation of any items installed before submittal approval is granted. The FAA reserves the right to discontinue field work on any item furnished without submittal approval. Procuring and/or installing material which is later disapproved could result in substantial losses of money and time for the contractor.

1A.5 PRE-CONSTRUCTION CONFERENCE. The contractor shall attend a pre-construction conference when required by the contracting officer or airport management. The contractor shall abide by all agreements reached at the conference regarding safety practices,

ingress and egress routes to the site, maintenance of airport security (locking gates, etc.), deference to air traffic, and other operational procedures.

1A.6 COORDINATION. All coordination between the contractor and the airport management and local FAA personnel, shall be accomplished through the Resident Engineer.

1A.7 PROJECT DRAWINGS.

a. Conflict Between Site Drawings and Standard Drawings. If any conflict should exist between site drawings (location-specific drawings) and standard drawings (drawings not referring to a particular location), the site drawings shall govern.

b. Drawings Referenced But Not Provided. Unless otherwise specified, drawings which are referenced on contract drawings, but which are not listed in the list of specifications and drawings, do not apply to the contract.

1A.8 TEMPORARY ELECTRICAL POWER. Unless otherwise specified, the contractor shall make all arrangements and pay all costs for temporary electrical power needed for construction of the facility.

1A.9 COMPLIANCE WITH LOCAL AND OTHER CODES. The contractor shall comply with standards (e.g., National Electrical Code) adopted by the contract documents, and with local and other codes. Where the requirements of the specifications and drawings exceed those of the adopted and local codes, the contractor shall comply with the requirements of the specifications and drawings.

1A.10 SANITARY FACILITIES. Sanitary facilities are not available at the work sites. The contractor shall provide temporary toilet facilities as required for his employees. The locations of the toilet facilities shall be where directed by the Resident Engineer.

MATERIAL AND EQUIPMENT SPECIFICATION INDEX

Material or Equipment Specified	Relevant Paragraph(s)	Does the paragraph include: Product(s) listed?	Submittal guidance?
air conditioner	16A.17e	N	N
anti-seize compound	13A.2d(1)	Y	N
	13C.2b	Y	N
cable			
600V power cable, DEB	Section 16B	N	N
600V armored power cable, DEB	Section 16C	N	Y
5,000V power cable, DEB	Section 16D	N	Y
clamp	13A.2d(2)	Y	N
control cable	Section 16E	N	Y
connector protection	16A.24	Y	N
end caps	16A.8	Y	N
splicing connectors			
power	13A.6c	Y	Y
power and control	16F.6	Y	Y
splicing kits			
MALS power	13A.6b	Y	Y
power and control	16F.6	Y	Y
circuit breakers	16A.14b&e	Y	N
conduit	16A.1	N	N
	16A.3	N	N
door hardware for shelters	13E.4	Y	N
electrical coating	16A.25	Y	N
electrical enclosures and wireways	16A.15	N	N
electrical tape	16A.21	Y	N

MATERIAL AND EQUIPMENT SPECIFICATION INDEX (CONTINUED)

Material or Equipment Specified	Relevant Paragraph(s)	Does the paragraph include: Product(s) listed?	Does the paragraph include: Submittal guidance?
environmental equipment for shelters	16A.17	Y	N
exothermic welding kits	16A.4f	Y	Y
expansion couplings	16A.27	Y	N
fiber forms for concrete piers	3B.7b	Y	N
fire and arc proofing	16A.23	Y	N
framing, commercial metal	16A.26	Y	N
frangible couplings	16A.20	Y	N
fuses for switches	16A.13f	Y	N
geotextile	2B.3a	Y	Y
grounding electrode			
material	16A.4c	N	N
crimped connectors for	16A.4g	Y	Y
grounding conductor	16A.4d	N	N
heater	16A.17c	Y	N
heater timer unit (components)	16A.17d	Y	N
landscape fabric	2B.3b	Y	Y
lamp, MALS 120-watt	13A.5	Y	Y
lighting equipment for shelters	16A.17f	Y	N
	16A.17g	Y	N
lightning protection equipment	16A.18	Y	N
paint	9A	N	N
	13E.7	Y	N
panelboard	16A.14	Y	N
pre-stretched rubber tubing	16A.22	Y	N

MATERIAL AND EQUIPMENT SPECIFICATION INDEX (CONTINUED)

		Does the paragraph include:	
Material or Equipment Specified	Relevant Paragraph(s)	Product(s) listed?	Submittal guidance?
safety disconnect switches	16A.13	Y	N
screw anchor foundations	Section 13D	Y	Y
shelter steel siding	13E.8	Y	N
splicing connectors and kits	see under cable		
surge arrester	13F.7	Y	N
	16A.16	Y	Y
switches, safety	16A.13	Y	N
fuses for	16A.13	Y	N
tape	see electrical tape		
terminal strips for control cable	16A.19	Y	N
vent fan	16A.17a	Y	N
thermostat for	16A.17b	Y	N

DIVISION 2 - SITE WORK
SECTION 2A
EARTHWORK AND SITE IMPROVEMENTS

2A.1 DESCRIPTION OF WORK. The extent of earthwork is indicated on the drawings and by the provisions of this section. Require-ments for access road and site surfacing and paving are covered in Sections 2B and 2C.

2A.2 QUALITY ASSURANCE.

a. Codes and Standards. Perform all earthwork in compliance with applicable requirements of governing authorities having jurisdiction.

b. Testing and Inspection.

(1) Soil materials and degree of compaction shall conform to ASTM specifications referenced herein. Professional soil testing methods associated with this specification will generally not be required, but the FAA reserves the right to engage a state-licensed soil testing service to resolve disputes regarding adequacy of all earthwork performed.

(2) Visual inspection and qualitative testing shall be performed by the contractor in the presence of, and wherever directed by, the Resident Engineer.

2A.3 SAFETY REQUIREMENTS.

a. Refer to Division 1 for construction within classified and unclassified areas.

b. To protect life, property, and work, all earthwork operations shall be performed in compliance with local and OSHA (Occupational Safety and Health Administration) requirements. The contractor shall provide all sheeting, shoring, and other bracing as necessary.

c. All trenches in classified areas, excavated in one day, shall be backfilled during the same day. An effort shall be made to backfill other excavations in classified areas, during the same day.

2A.4 JOB CONDITIONS.

a. Existing Utilities.

(1) Locate all underground cables, utility lines, and other underground construction before beginning excavation work. Any damage to such lines or construction belonging to the FAA, utility companies, or others, shall be promptly repaired, at contractor's expense, to the complete satisfaction of the owner.

(2) Project drawings generally indicate locations of cables maintained by the Federal Aviation Administration only. The FAA will field establish approximate locations of its own cables.

b. Weather Conditions.

(1) Excavating and backfilling for foundations, trenches, and jacking or boring pits, shall not proceed when excessively wet or freezing weather conditions could adversely affect the load-bearing characteristics of the soil, or prevent proper compaction.

(2) When freezing weather is expected, excavations shall not be made to full depth unless concrete or conduits can be placed immediately. If an excavation is already at full depth, the excavation shall be protected from frost.

c. Drainage.

(1) All excavations shall be continually drained by natural means or pumping to prevent any decrease in soil bearing capacity or damage to poured foundations or to trenches.

(2) Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.

(3) Establish and maintain temporary drainage ditches and other diversions outside excavations limits to convey rain water and water removed from excavations to collecting or run-off areas. Do not use trench excavations as temporary drainage ditches.

2A.5 MATERIALS.

a. Structure and Foundation Materials. In-place undisturbed inorganic soils will be adequate to support all project structures, unless otherwise indicated. Highly organic soils (topsoil, peat, and swamp location soils) shall be removed entirely from areas to be occupied by structures.

2A.5b

b. Backfill and Fill. Material shall be inorganic soil excavated from site, or borrow comprised of inorganic soil approved by the Resident Engineer. All such soils shall be free of rock, gravel, and cohesive lumps greater than two inches in any direction, and debris, waste, vegetation, frozen material, and other deleterious materials.

c. Base Course for Concrete Slabs. Material shall be a graded mixture of washed crushed stone or crushed or uncrushed gravel with 100% passing a 1 1/2 inch sieve, and not more than 5% passing a number 4 sieve.

2A.6 SITE PREPARATION.

a. Clearing and Grubbing. The contractor shall scalp areas where excavation or embankment will be made. Scalping shall include the removal of materials such as trees, brush, roots, sod, grass, residue of agriculture crops, sawdust, and decayed vegetable matter, from the surface of the ground. These materials shall be removed from the site and disposed of off airport property.

b. Topsoil Removal.

(1) Topsoil shall be considered soil containing visible vegetable matter and black loam that will not compact with the usual compacting methods.

(2) Unless otherwise specified, topsoil shall be removed from all areas to receive fill, granular surfacing, pavement, and structures, and from all areas where subsoil excavating is required, such as for roadway cuts and ditches. Dispose of excess topsoil on or off airport property, as directed by the Resident Engineer, at no additional cost to the Government.

2A.7 EXCAVATION.

a. Excavation Classification. Excavation is unclassified and includes excavation to subgrade elevation indicated, regardless of character of materials and obstructions encountered excepting as qualified herein.

b. Rock Excavation. If rock is encountered above the design footing elevations of any facility structure, such foundation shall bear entirely on clean solid rock or on soil, but not on both. If the soil-and-rock bearing condition is encountered, the Resident Engineer will determine which material shall support the structure. If rock surface is used, it shall be reasonably level or shall be stepped to make level segments.

c. Unauthorized Excavation. Removal of materials beyond design subgrade elevations or dimensions without specific direction from the Resident Engineer constitutes unauthorized excavation. Remedial work for such excess excavation shall be as directed by the Resident Engineer at the contractor's expense.

d. Additional Excavation. When any excavation has reached required subgrade elevation, notify the Resident Engineer, who will inspect soil conditions. If the Resident Engineer determines that the soil possesses inadequate bearing capacity, carry such excavation deeper as directed by the Resident Engineer.

e. Excavation for Structures.

(1) Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 foot, and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services and other construction, and for inspection.

(2) In excavating for footings and foundations, take care not to disturb the bottom of the excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottoms to required lines and grades to leave a solid base.

f. Excavation for Cable and Conduit Trenches.

(1) Excavate in compliance with lines and depths shown on drawings. Minimum trench depth shall be 24 inches and 30 inches, on and off airport lands, respectively, unless otherwise specified. Slope trenches to same elevations as conduits where cables will be routed to a building interior. Minimum trench width shall be that required to accept power-operated mechanical tampers.

(2) Grade bottom surfaces of trenches to provide uniform bearing and continuous support for cable and conduit.

(3) Material excavated in excess by error, or due to unsuitable bearing, shall be replaced with mechanically compacted inorganic soil.

(4) If solid rock is encountered, the Resident Engineer will decide if such rock need be removed or if an alternate trench route or lesser depth conduit installation will be acceptable.

(5) If a trench must cross a concrete or asphalt paved surface, all cuts shall be saw cuts, unless otherwise specified.

2A.8 COMPACTION.

a. General.

(1) All compaction shall be accomplished by using power-operated mechanical equipment except for limited use of manual tampers in constricted areas. Operate all power equipment as herein specified to achieve the minimum degree of compaction subject to acceptance by testing.

(2) Cohesive soils are defined herein as those containing less than 60 percent sand, gravel, or stone. Percentages greater than 60 percent are herein termed non-cohesive soils.

b. Cohesive Soil Compaction.

(1) Use sheepsfoot roller of such minimum weight that at least 200 psi will be transmitted to surface area of studs or feet. Operate at speeds not exceeding 4 mph on each layer of fill until roller walks itself to top of grade.

(2) Use motor-operated soil tamper (stomper) in confined areas, including trenches, on each layer of fill until no further visible consolidation is evident.

(3) Use a heavy blunt tamping rod on each layer of fill in the most constricted locations where power equipment cannot be used.

c. Non-Cohesive Soil Compaction.

(1) Use pneumatic tire roller fully loaded and weighing not less than 275 pounds per inch of tire tread width. Operate at speeds not exceeding 4 mph. A minimum of ten passes of the roller is required on each layer of fill.

(2) Use motor-operated vibratory tamper in confined areas, including trenches, on each layer of fill until no further visible consolidation is evident.

(3) Use heavy blunt tamping rods on each fill layer in constricted locations where power equipment cannot be used.

d. Moisture Control.

(1) Where soil material must be moisture-conditioned before compaction, uniformly apply water to a layer of soil material in such quantity that free water will not appear on the surface during or subsequent to compaction operations.

(2) Scarify and air-dry soil material that is too wet to permit compaction to specified density.

2A.8e

e. Percentage of Maximum Density Requirements.

(1) General Requirements. The required densities for cohesive and non-cohesive soils are determined by quantitative testing procedures defined by ASTM Standards D 1557 and D 4253/4254, respectively. To assure compliance, the contractor may arrange for such professional soil testing services, at no additional cost to the Government. The FAA, at its expense, may also make such arrangements if qualitative testing procedures appear inadequate.

(2) Structures, Slabs, and Access Roads/Parking Areas. Compact top surfaces of subgrade and each layer of backfill or fill material to 90% of maximum density for cohesive soils, or to 95% relative density for non-cohesive material.

(3) Turf and Non-Vehicular Surfaced Areas. Compact top surfaces of subgrade and each layer of backfill or fill material to 90 percent of maximum density for cohesive soils, or to 90 percent relative density for non-cohesive material.

f. Qualitative Testing and Inspection Procedures.

(1) General. The contractor shall perform qualitative soil compaction testing and inspection procedures for each type of backfill or fill material used wherever directed by, and in the presence of, the Resident Engineer. Special attention shall be given to the backfilling of structures and trenches.

(2) Qualitative Testing.

(a) Qualitative soil testing will consist of comparing the resistance to penetration of undisturbed soil to that of compacted backfill of the same composition. For borrow material the penetration comparison shall be made between maximum test sample density and in-place fill density.

(b) A soil penetration device (penetrometer) indicating depth and force exerted shall be utilized. Compaction will be adequate if backfill or fill possesses at least 95% of the resistance to penetration of undisturbed soil or test sample, respectively.

(c) Borrow test sample shall be a four inch deep (compacted measurement) layer of soil, aerated or moistened as directed by the Resident engineer, and compacted by power equipment until no further consolidation occurs, as approved by the Resident Engineer.

(3) Concrete Slab Base Course. Compact with vibratory tamper until no further visible consolidation is evident.

2A.9 BACKFILL AND FILL.

a. Structure Foundations. Backfill or fill as promptly as work permits, but not until completion of the following:

(1) Acceptance of construction below grade.

(2) Recording locations of underground conduit.

(3) Removal of concrete formwork, bracing, trash, and debris.

b. Ground Surface Preparation. Remove vegetation, debris, topsoil, and unsatisfactory subsoil from ground surface, and compact the subgrade, prior to placement of fill layers.

c. Placement and Compaction.

(1) Place acceptable backfill and fill materials in layers not more than eight inches in loose depth for material to be compacted by heavy equipment, and not more than four inches in loose depth for material to be compacted by hand-operated tampers.

(2) Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Do not place backfill or fill on water, ice, snow, frozen soil, or excessively wet soil.

d. Cable Trench Backfill.

(1) Before laying cables, inspect the bottom of the cable trench. If it is not smooth, or if any rock or stone that would be retained on a 1/4-inch sieve is present, place a two-inch layer of bedding material, according to Paragraph (2) below, in the trench. Do not compact this layer. Lay cables on top of this layer.

(2) The first layer of backfill material over cables shall be three inches deep, loose measurement, and shall be sand or other homogeneous inorganic soil containing no mineral aggregate particles that would be retained on a 1/4-inch sieve. This layer shall not be mechanically compacted.

(3) The second layer, in turf and crushed rock surface areas, shall be four inches deep, loose measurement, and shall contain no mineral aggregate particles that would be retained on a one-inch sieve. Subsequent layers shall be clean soil containing no rock particles larger than two inches in their largest dimension.

(4) Except for surfacing material, all layers of trench backfill, for areas to be paved or surfaced with crushed rock, shall be sand, placed and compacted as required for access roads.

(a) If a trench crosses an area surfaced with crushed rock, the top 12 inches of trench backfill shall be crushed rock, placed and compacted as required for access roads. The finished grade elevation of the crushed rock backfill shall equal the grade elevation of existing adjacent crushed rock.

2A.9d(4)(b)

(b) If a trench crosses an area surfaced with concrete or asphalt pavement, the pavement shall be replaced

with materials of the same composition, thickness, and degree of compaction as the adjacent pavement structure, except that the crushed rock base shall be a minimum of 12 inches deep. Replacement concrete shall have a 28-day compressive strength of 3,000 psi. Finished grade of the pavement patch shall be flush with the adjacent pavement surfaces.

e. Backfill and Fill Surface Elevations. Finished grade, shown on the drawings, is the top surface of turf and crushed rock or crushed stone surfaced areas. Therefore, make allowances for six inches of topsoil and depths as detailed or specified for surfaced areas when establishing top surface of fill or backfill.

2A.10 GRADING.

a. General. Uniformly grade areas within limits of grading, including adjacent transition area. Smooth the finished surfaces within specified tolerances, and compact with uniform slopes between points where elevations are indicated, or between such points and existing grades.

b. Grading Outside Building Lines. Grade areas adjacent to building lines to drain away from structures and to prevent ponding. Finish areas to receive topsoil and surfacing within 0.10 feet above or below required subgrade elevations.

c. Grading Surface of Fill Under Building Slabs. Grade smooth and level and to proper elevation to within a tolerance of 1/2 inch when tested with a 10-foot straightedge.

2A.11 MAINTENANCE.

a. Protection of Graded Areas. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

b. Reconditioning. Where compacted areas are disturbed by construction operations, adverse weather, or where any settlement has occurred, scarify surface, add acceptable fill, reshape, grade, and compact as necessary.

2A.12 DISPOSAL OF EXCESS AND WASTE MATERIALS. Remove and dispose of all excess soil and waste material from the project site and adjacent lands. All costs associated with disposal shall be at contractor's expense.

DIVISION 2 - SITEWORK
SECTION 2B
CRUSHED AGGREGATE ROAD AND SITE SURFACING

2B.1 DESCRIPTION OF WORK. The extent of work is indicated on the drawings and by the provisions of this section.

2B.2 STATE SPECIFICATIONS. State highway construction specifications, latest edition, form a part of this specification and are applicable for all work unless otherwise specified. This referenced specification will be hereinafter referred to as "State Specifications." Disregard all references in the State Specifications to layout of work by others, and to measurements and payments. All layout work will be accomplished by the contractor, and payment for all work under this section will be a part of the lump-sum contract.

2B.3 MATERIALS.

a. Geotextile.

(1) Application. The most common application of geotextiles in FAA navaids construction is as a separator. In this application, the geotextile is placed over prepared roadway subgrade soil, and crushed aggregate is placed and compacted on top of the geotextile. The geotextile permits water to permeate into the subgrade, while preventing the aggregate from mixing with the subgrade soil. The geotextile specified below is for application as a separator.

(2) Separator Geotextile Selection Criteria. The geotextile fibers, and the threads used in joining the geotextile by sewing, shall consist of long chain polymeric fibers composed of polypropylene, polyester, polyolefins, or polyamide. Both the geotextile and threads shall be resistant to chemical attack, mildew, and rot. The geotextile shall conform to the physical property requirements listed in the following table. All values shall represent certifiable minimum values in the weakest principle direction of the fabric.

Property	Test Method	Requirement
Thickness	ASTM D-1777	75 mils, min
Grab tensile strength	ASTM D-4632	160 lbs, min
Grab elongation	ASTM D-4632	60%, min
Puncture resistance	ASTM D-4833	80 lbs, min
Mullen burst strength	ASTM D-3786	275 psi, min
Water flow rate	ASTM D-4491	130 gpm/ft^2, min
Permittivity	ASTM D-4491	1.74 sec^{-1}, min
Permeability	ASTM D-4491	33 cm/sec, min
Apparent opening size	ASTM D-4751	U.S. Sieve #70, max

Trevira Spunbond 1120 fabric manufactured by Hoechst Celanese Corporation is one of the products which meets these specifications. For any substitution, provide the Contracting Officer with complete product literature, including values of the properties tabulated above, and a sample of fabric. Do not procure any substitute before receiving the Contracting Officer's approval. See Paragraph 1A.4 above.

(3) Geotextile Fabric Width. Fabric width shall be at least 12.5 feet for the normal 13-foot-wide access road. Fabric in other vehicular areas shall be cut to fit, and overlapped per Paragraph 2B.4c(2)(b), below, to fully cover such areas.

b. Landscape Fabric.

(1) Application. Landscape fabric shall be applied under all non-roadway crushed rock surfacing, such as walkways around navaid shelters, at RVR sites, and between light bars of a MALSR. In these applications, landscape fabric is placed over prepared walkway subgrade soil, and crushed aggregate is placed and compacted on top of the landscape fabric. The landscape fabric acts as a separator, as does geotextile, and blocks weed growth. The contractor shall have the option of substituting geotextile per Paragraph 2B.3a, for landscape fabric.

(2) Landscape Fabric Selection Criteria. The landscape fabric fibers shall consist of long chain polymeric fibers composed of polypropylene, polyester, polyolefins, or polyamide. The fabric shall be resistant to chemical attack, mildew, and rot. The fabric shall conform to the physical property requirements listed in the following table. All values shall represent certifiable minimum values in the weakest principle direction of the fabric.

Property	Test Method	Requirement
Grab tensile strength	ASTM D-4632	100 lbs, min
Grab elongation	ASTM D-4632	60%, min
Trapezoidal tear	ASTM D-4533	30 lbs
Puncture resistance	ASTM D-751	25 lbs, min
Water flow rate	ASTM D-4491 modified)	30 gpm/ft^2, min
Permittivity	ASTM D-4491	.25 sec^{-1}, min
Apparent opening size	ASTM D-4751	U.S. Sieve #50, max

Typar 3301 landscape fabric manufactured by Reemay is one of the products which meets these specifications. For any substitution, provide the Contracting Officer with complete product literature, including values of the properties tabulated above, and a sample of fabric.

2B.3b(2)

Do not procure any substitute before receiving the Contracting Officer's approval. See Paragraph 1A.4 above.

(3) Landscape Fabric Width. Fabric width shall be 3 feet wide for a 3-foot-wide crushed rock walkway. Fabric in other walkway areas shall be cut to fit, and overlapped per Paragraph 2B.4c(2)(a), below, to fully cover such areas.

c. Crushed Aggregate Surfacing.

(1) Crushed rock or crushed stone aggregate shall comply with State Specification quality requirements for crushed rock or crushed stone used for road surface course, and shall be of the State gradation most closely conforming with the following gradation:

Sieve Size	Total Passing, Percent
1-inch	100
3/4-inch	80-100
3/8"-inch	30-60
No. 4	48-65
No. 8	35-50
No. 30	19-30
No. 50	13-23
No. 100	7-15
No. 200	0-8

(2) A certified sieve analysis, referenced to State Specification gradation, shall be submitted to the Resident Engineer for approval.

2B.4 CONSTRUCTION.

a. General Requirements. All earthwork requirements in Section 2A for areas to receive surfacing are applicable, excepting as qualified herein. Where the additional work or more stringent requirements in this section conflict with Section 2A, requirements herein shall prevail.

b. Foundation Preparation.

(1) Foundation Material. All topsoil shall be removed from areas to receive paving and surfacing or fill under such surfaces. Only inorganic soil shall exist under surfaced or paved areas.

(2) Compaction. Compact as required in Section 2A.

(3) Grading. Shape with motor grader to achieve such surface trueness that when tested with a 10-foot straightedge, no deviation greater than 1/2-inch shall exist.

(4) Corrective Work. Any ruts or soft-yielding spots that may appear in the subgrade, any areas having inadequate compaction, and deviations of the surface from the requirements specified shall be corrected by loosening, removing, and adding approved material and reshaping and recompacting the affected areas to line and grade, and to the specified density.

c. Geotextile or Landscape Fabric.

(1) General. Geotextile or landscape fabric, if required on the drawings, shall be installed on prepared subgrade for all areas that will experience vehicular traffic or pedestrian traffic, respectively.

(2) Construction Requirements.

(a) Prepared subgrade and foundations shall be compacted smooth and level as specified elsewhere and as shown on the drawings.

(b) The fabric shall be rolled out directly upon the prepared surface, and shall not be dragged over any surface. Fabric in place shall have a smooth surface and shall be free of folds, wrinkles, cuts, or other imperfections. Individual panels of fabric shall be overlapped at least 24 inches, with the preceding layer overlapping the following layer in the direction that surfacing material will be spread. No vehicular traffic will be permitted directly upon the fabric.

d. Crushed Aggregate Surfaced Areas and Crushed Aggregate Base Course for Bituminous Pavement.

(1) Spreading. Crushed aggregate surfaced areas and base course shall be constructed in one or more layers of maximum 6-inch compacted thickness each. Crushed aggregate shall be deposited directly and uniformly on the prepared subgrade, if no geotextile or landscape fabric is used. If geotextile fabric is required, the aggregate shall be back-dumped on the fabric, and machine spread in the direction of overlap. Dumping in windrows, which requires excessive rehandling, will not be permitted. When deposited, the aggregate shall be free from segregation, and shall require minimum blading or manipulation.

(2) Compaction and Grading.

(a) Each layer of aggregate shall be compacted using equipment required in the State Specifications. For compacting aggregate on a geotextile or landscape fabric, use a smooth-drum roller. Compaction shall closely follow the spreading operation to prevent loss of contained moisture or displacement of materials.

(b) When the surface stability of the crushed aggregate cannot be obtained due to lack of fines, additional fines shall be added to the upper portion of the course in an amount sufficient to secure stability, at no additional cost to the Government. In no case, however, shall the quantity of fines added increase the percent passing the Number 200 sieve by more than 15 percent in the upper portion.

(c) Any irregularities or depressions that develop in the layers under rolling operations shall be corrected by loosening the material and removing or adding aggregate and rerolling. The rolling shall be continued until the surface is shown to be smooth and uniform, and to such trueness that when tested with a 10-foot straightedge it shall not show any deviation in excess of 1/4-inch. At all places not accessible to the roller, the aggregate of each layer shall be tamped separately and compacted to grade and line with mechanical tampers.

(d) If any subgrade material is worked into the aggregate material during the compacting or finishing operations, all granular material within the affected areas shall be removed and replaced with new aggregate. The Resident Engineer may restrict hauling or traffic over the completed or partially completed base after inclement weather or at any time when the subgrade is soft, and there is a tendency for the subgrade material to work into the base material.

(e) If considered necessary by the Resident Engineer, water shall be applied to each layer to aid in compaction and prevent segregation of the material. Disc or harrow surfacing material during moistening operations to secure uniform moisture distribution. Add water in a manner that will not soften the subgrade. All work associated with the additional water shall be accomplished at no additional cost to the Government.

2B.4d(2)(f)

(f) The aggregate shall be compacted to 95 percent maximum density as determined by AASHO-T99. Compaction shall continue until no further discernible compaction is evidenced under action of the compaction equipment. If in the opinion of the Resident Engineer, the required degree of compaction has not been achieved, testing in accordance with the standard will be conducted and paid for by the Government. If testing confirms unacceptable compaction, reconstruction or other remedial work may be required by the contractor at no additional cost to the Government.

DIVISION 2 - SITEWORK
SECTION 2C
ASPHALT CONCRETE PAVEMENT

2C.1 DESCRIPTION OF WORK. The extent of asphalt concrete pavement construction is indicated on the drawings and by the provisions of this section. Pavement construction will include placing prime and tack coats and asphalt concrete base and surface courses on prepared subgrade and aggregate base course.

2C.2 CERTIFICATION. Provide certification signed by material producer and contractor that all materials and mix compositions comply with the specified requirements.

2C.3 APPLICABLE SPECIFICATIONS.

a. American Association of State Highway and Transportation Officials (AASHTO) material referenced herein.

b. State Highway Construction Specifications.

(1) State highway construction specifications, latest edition, form a part of this specification and are applicable for all work, unless otherwise specified. This referenced specification will hereinafter be referred to as "State Specifications."

(2) Disregard all references in the State Specifications to layout of work by others, and to measurements and payments. All layout work will be accomplished by the contractor, and payment for all work under this section will be a part of the lump-sum contract.

(3) Prime and tack coats, as specified herein, are a requirement under this contract even if such coats are not required under the State Specifications.

2C.4 WEATHER LIMITATIONS.

a. Surface Conditions. Apply all coats and asphalt layers to dry surfaces only. Do not commence work when wet weather threatens.

b. Temperatures.

(1) Apply prime and tack coats when air temperature is above $50^{O}F$ and when temperature has not been below $35^{O}F$ for 12 hours immediately prior to application.

(2) Construct asphalt concrete base and surface courses when air temperatures are above $30^{O}F$ and rising, and above $40^{O}F$, respectively.

2C.5 MATERIALS.

a. General Requirements. Provide locally available materials that comply with the State Specifications for asphalt concrete pavements and all requirements herein.

b. Base (Binder) and Surface Course Aggregates. Provide sound angular crushed rock or crushed stone, sand, and stone screenings.

c. Asphalt Cement. AASHTO M 226 (ASTM D 3381) for viscosity-graded material and AASHTO M 20 (ASTM D 946) for penetration-graded material.

d. Prime Coat. Cut-back asphalt type; AASHTO M 82 (ASTM D 2027) MC-30, MC-70, or MC-250.

e. Tack Coat. Emulsified asphalt; AASHTO M 140 (ASTM D 977) or MC-208 (D 2397); SS-1, SS-1h, CSS-1 or CSS-1h, diluted with one part water to one part emulsified asphalt.

2C.6 ASPHALT-AGGREGATE MIXTURE. Provide plant-mixed, hot-laid asphalt-aggregate mixture complying with ASTM D 3515 and the State Specifications.

2C.7 CONSTRUCTION.

a. Surface Preparation.

(1) Prepare subgrade and provide road stabilization/ reinforcement fabric and aggregate base course as required in Sections 2A and 2B herein.

(2) Inspect aggregate base for unstable areas and areas requiring additional compaction before proceeding with pavement work and correct all unsatisfactory conditions.

b. Prime Coat. Apply at a rate of 0.20 to 0.50 gallons per square yard, over compacted aggregate base course. Apply material to penetrate and seal, but not flood, surface. Cure and dry as long as necessary to attain penetration and evaporation of volatile.

c. Tack Coat. Apply to surface of asphalt concrete base (binder) course and abutting surfaces of existing pavement, at the rate of 0.05 to 0.15 gallons per square yard of surface. Allow to dry before placing surface coat.

d. Placement of Mix.

(1) General. Place asphalt concrete mixture on prepared surface, spread, and strike off. Spread mixture at a minimum temperature of 225^{O}F (107^{O}C). Place inaccessible and small areas by hand. Place each course to required grade, cross-section, and compacted thickness.

(2) Course Thickness. Unless indicated otherwise on the drawings, asphalt concrete base and surface courses shall be 3 inches and 1 1/2 inches thick, respectively.

(3) Paver Placing. Place in strips not less than 10 feet wide, unless otherwise acceptable to the Resident Engineer. After the first strip has been placed and rolled, place succeeding strips, and extend rolling to overlap previous strips. Complete base course for a section before placing surface course.

(4) Joints. Make joints between old and new pavements, or between successive days' work, to ensure continuous bond between adjoining work. Construct joints to have the same texture, density, and smoothness as other sections of asphalt concrete course. Clean contact surfaces and apply tack coat.

e. Rolling.

(1) General.

(a) Begin rolling when mixture will bear roller weight without excessive displacement.

(b) Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.

(2) Breakdown Rolling. Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling, and repair displaced areas by loosening and filling, if required, with hot material.

(3) Second Rolling. Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been thoroughly compacted.

(4) Finish Rolling. Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained maximum density.

2C.7f

f. Patching. Remove and replace paving areas mixed with foreign materials, and defective areas. Cut out such areas, and fill with fresh, hot asphalt concrete. Compact by rolling to maximum surface density and smoothness.

g. Protection. After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

2C.8 FIELD QUALITY CONTROL.

a. General. Test in-place asphalt concrete courses, at intervals as directed by the Resident Engineer, for compliance with requirements for thickness and surface smoothness. Repair or remove and replace unacceptable paving as directed by the Resident Engineer.

b. Thickness. In-place compacted thickness will not be acceptable if they exceed the following allowable variation from required thickness:

(1) Base Course. 1/2-inch

(2) Surface Course. 1/4-inch

c. Surface Smoothness. Test finished surface of each asphalt concrete course for smoothness, using 10-foot straightedge applied parallel with, and at right angles to, centerline of paved area. Surfaces will not be acceptable if they exceed the following tolerances for smoothness.

(1) Base Course Surface. 1/4-inch

(2) Wearing Course Surface. 3/16-inch

(3) Crowned Surfaces. Test with crowned template centered and at right angle to crown. Maximum allowable variance from template: 1/4-inch.

DIVISION - SITEWORK
SECTION 2D
TOPSOIL AND GRASS COVER

2D.1 DESCRIPTION OF WORK. The extent of topsoil placement and establishment of grass cover is indicated on the drawings and the provisions of this section.

2D.2 GENERAL REQUIREMENTS. All areas of the project site, access road right-of-way, and cable trench routes, which will not be occupied by pavement, crushed rock/stone surfacing, or other construction, shall receive preparation and grass seed planting and maintenance. Included in this work will be off-site turf reconditioning and replacement for those areas damaged by construction operations.

2D.3 MATERIALS.

a. Topsoil. Material shall be that removed from project site location preparatory to trenching and site construction. Reuse only that part of stockpiled topsoil reasonably free of subsoil, trash, roots, stumps, weeds, debris, litter, and stones larger than 2 inches.

b. Fertilizer. Provide complete fertilizer of 5-10-5 composition (percentages of nitrogen, phosphorous, and potash, respectively).

c. Grass Seed. Provide fresh, clean, new-crop seed complying with tolerance for purity and germination established by Official Seed Analysts of North America. Provide the following seed mixture composed of grass species and proportions:

Proportion by Weight	Common Name
45%	Kentucky Bluegrass
5%	Perennial Ryegrass
35%	Redtop
15%	White Clover

d. Anti-Erosion Mulch. Provide clear, seed-free salt hay or threshed straw of wheat, rye, oats, or barley. Anchor the mulch sufficiently to prevent it from being blown away.

2D.4 PREPARATION FOR PLANTING.

a. Subsurface Preparation. After completion of all construction operations that could disturb topsoil areas, subgrades shall be cleared free of waste and stones larger than 2 inches, then tilled to a depth of 3 inches, and graded to remove surface irregularities.

2D.4b

b. Topsoil and Surface Preparation. Spread topsoil uniformly to provide a 6-inch layer, after compaction, on all fill and backfilled areas to receive grass seed. Compact with a roller weighing 85 to 100 pounds per foot of width. Subgrade and topsoil shall be damp when work is performed, but not wet, dusty, or frozen.

c. Preparation of Unchanged Grades. Where seed will be planted in areas that have not been altered by grading, prepare soil for planting as follows: till to a depth of 6 inches, apply fertilizer, remove high areas and fill depressions, till soil to a homogenous mixture of fine texture, free of lumps, stones, roots, and trash, and compact as above.

d. Fertilizer. Apply fertilizer at the rate of 30 pounds per 1000 square feet of area. Mix fertilizer into top 2 inches of topsoil.

e. Surface Preparation. Fine grade to a smooth, even surface and to a loose, uniformly fine texture. Roll, rake, and drag seeded areas, remove ridges, and fill depressions as necessary to meet finish grades. Limit work to areas that can be planted immediately. Moisten prepared areas before planting if soil is dry. Allow surface mixture to dry and proceed with seeding.

2D.5 SEEDING.

a. Seed Condition. Do not use old, wet, or moldy seed. The seed shall be dated with the year in which it is being applied.

b. Sowing. Use spreader or sowing machine. Do not seed when wind velocity exceeds 5 mph. Distribute seed evenly over entire area by sowing equal quantities in two directions at right angles to each other. Seed at rate of 5 pounds of seed per 1000 square feet of area. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with a fine spray.

c. Protection. Spread mulch uniformly to form a continuous loose blanket after completion of seeding operations. Anchor the mulch sufficiently to prevent it from being blown away.

2D.6 MAINTENANCE. Maintain for a period of 60 days after seeding. If maintenance for a 60-day period is not feasible, the contractor shall use a commercially available mix of seed, fertilizer, and long-lasting mulch, or a preseeded anchored mat that can be maintained less frequently with the same results. Water, fertilize, regrade, and replant as required to establish smooth, acceptable turf.

DIVISION 2 - SITE WORK
SECTION 2E
MISCELLANEOUS SITE IMPROVEMENTS

2E.1 DESCRIPTION OF WORK. The extent of miscellaneous site work is indicated on the drawings and by the provisions of this section.

2E.2 CONDUIT INSTALLATION BY JACKING OR BORING.

a. Materials. Conduit shall be 4-inch diameter, rigid, galvanized steel unless otherwise specified on the drawings. The leading end of the conduit to be jacked shall be equipped with an approved cap or point designed specifically for pipe jacking.

b. Excavation and Backfill of Jacking or Boring Pits. Excavation and backfill of all pits used for the installation of conduit shall conform to Section 2A.

c. Jacking Equipment. Pipe jacking equipment shall be an approved design for the purpose of jacking pipe and shall be capable of developing sufficient force to overcome frictional and/or other resisting forces built up over the distance involved.

d. Location. Conduit shall be located where shown on the drawings and/or as staked out by the Resident Engineer. Conduit shall be started into place at a minimum of 36 inches below finished grade, if not otherwise specified in the proposal or on drawings. The transverse alignment shall be considered satisfactory only when the terminating or leading end of the conduit exits within 5 feet of its intended location for a conduit length of less than 50 feet. For lengths greater than 50 feet, the transverse location must not be outside of 15 feet of the intended location. The vertical limits of the point of exit of the leading end of the conduit shall be between 24 inches and 50 inches below finished grade for conduits up to 50 feet in length and between 24 inches and 84 inches for conduits of greater length.

e. Conduit Length. Unless otherwise specified, conduit, no matter how installed, shall extend a minimum of 5 feet beyond each side of the pavement or structure.

f. Conduit Sealant. After completion of conduit and cable installation, both ends of the conduit shall be sealed with Permagum or other approved compound to prevent entrance of moisture.

2E.3 REMOVAL OF EXISTING FOUNDATIONS. All foundations of removed buildings, trailers, antenna supports, or other structures shall be removed to a minimum depth of two feet below final grade and backfilled with compacted earth in accordance with Section 2A, unless noted otherwise on the site drawings. The site areas shall be graded smooth and topsoil added to match the original terrain, unless otherwise specified.

2E.4 FACILITY RELOCATION.

a. General. Where relocation of a building, trailer, or other structure is required, the structure shall be moved intact

to its new location. Interior circuits and equipment shall remain undisturbed and unchanged. Existing cables and conduits from the building to exterior shall be disconnected at convenient junction boxes, panels, or couplings. After a building is relocated, the new incoming cables and conduits shall be installed to the points where disconnections were made, unless otherwise specified.

b. Deviation From Standard. When standard drawings are provided for the installation and relocation of existing structures, relocate existing equipment in accordance with these drawings as much as possible. Deviations from the standards are permitted where provided for on the site drawings, or to accommodate nonstandard features of existing structures. The contractor shall check the dimensions of the existing structures and foundations against the standard drawings, note any discrepancies, and report them to the Resident Engineer. He shall construct the new foundation to accommodate these discrepancies.

c. Reference Drawings. The standard drawings often refer to other drawings not included in the list of specifications and drawings. Drawings referred to but not included pertain to original construction, and are unnecessary for relocation.

2E.5 FENCES.

a. Materials and Installation. All materials and installations shall be in accordance with project drawing requirements.

b. Fence Grounding. Grounding materials and procedures shall be in accordance with project drawing requirements. Fence grounding conductors may be attached to the grounding electrodes of a shelter perimeter grounding system if such electrodes are located 20 feet or less from the fences to be grounded.

2E.6 CULVERTS.

a. Material. When shown on the drawings, corrugated galvanized sheet metal pipe shall conform to the requirements of AASHTO standard specification M-36.

b. Installation. Excavation for culverts shall provide a firm uniform foundation. Backfill around culverts shall be the same materials used in the road embankment and shall be well compacted in layers of not more than eight inches. Unless otherwise specified, there shall be a minimum of one foot of cover over all culverts. Bed the bottom quadrant of culverts in undisturbed soil.

2E.7 REPLACEMENT OF SURFACING AGGREGATE AND PAVEMENT. For replacement of surfacing aggregate and pavement removed for trenching operations, see Paragraph 2A.9d(4) above.

2E.8 SPECIAL SURFACING.

a. General. If required on the drawings, surfacing for VASI, PAPI, and REIL light units, and all other small surfacing areas within 300 feet of runway and taxiway edges, shall be the material placed as required below. Special surfacing requirements will preclude displacement onto aircraft operating surfaces.

b. Material and Installation. Crushed rock or crushed stone surfacing at light unit locations shall be 4 inches deep and centered on the units. Material shall be 1 1/2 to 2 inches nominal size washed crushed rock. No substitutions will be accepted. Rock shall be tamped as tightly as material permits. Finished surface shall be flush with existing surrounding grade.

DIVISION 3 - CONCRETE
SECTION 3A
CONCRETE FORMWORK AND REINFORCEMENT

3A.1 DESCRIPTION OF WORK. Extent of work is indicated on the drawings and by the requirements of this section.

3A.2 CONCRETE FORMWORK.

a. Design of Forms. Forms shall conform to shapes, lines, and dimensions of the members shown on the plans, and shall be sufficiently tight to prevent leakage of mortar. They shall be properly tied together so as to maintain position and shape.

b. Form Removal. Forms shall not be loosened or removed until the concrete members have acquired strength sufficient to support their own weight. No additional loads shall be placed on the concrete for at least 48 hours after placing.

c. Form Ties. Form ties for concrete shall be of a type that will break back 1 1/2 inches from the concrete surface. Ties shall be removed to a minimum depth of 1 1/2 inches, and the surface patched.

3A.3 CONCRETE REINFORCEMENT.

a. Materials. Reinforcement bars shall conform to "Specifications for Billet - Steel Bars for Concrete Reinforcement", ASTM A-615. All bars shall be intermediate grade deformed bars.

b. Cleaning and Bending Reinforcement. At the time concrete is placed, metal reinforcement shall be free from rust scale or other coatings that will destroy or reduce the bond. All bent bars shall be bent cold. No bars partially embedded in concrete shall be field bent except as shown on plans.

c. Placing Reinforcement. Metal reinforcement shall be accurately placed according to the plans, and adequately secured in position by concrete, metal, or other approved chairs, spacers, or ties.

d. Splices in Reinforcement. No splices or reinforcement shall be made except as shown on the plans or as authorized by the Resident Engineer. All welding shall conform to the American Welding Society's recommended practices for welding reinforcing steel, metal inserts and connections in reinforced concrete construction (AWSD12.1).

3A.3e

e. Concrete Protection for Reinforcement. The reinforcement shall be protected by the thickness of concrete shown on the drawings. Where not shown, the thickness of concrete over the reinforcement shall be as follows:

(1) Where concrete is deposited against the ground without the use of forms, not less than 3 inches.

(2) Where concrete is exposed to the weather or to the ground but placed in forms, not less than 2 inches for bars larger than number 5, and 1 1/2 inches for number 5 bars or smaller.

DIVISION 3 - CONCRETE
SECTION 3B
CAST-IN-PLACE CONCRETE

3B.1 DESCRIPTION OF WORK. The extent of work is indicated on the drawings and by the provisions of this section.

3B.2 MATERIALS. Cement shall conform to Specification for Portland Cement ASTM C-150, Type I, or Specification for Air-Entraining Portland Cement ASTM C-175, Type 1A, unless otherwise specified. The concrete shall have a minimum 28-day compressive strength of 3,000 PSI, a maximum slump of 4 inches, and a maximum aggregate size of 1-inch. The concrete mix shall contain an air-entraining admixture. Air content shall be 5 to 7 percent. The contractor shall give the Resident Engineer a certificate from the concrete supplier, bearing the intended job mix and certifying that the concrete delivered will meet the above requirements. The contractor shall obtain approval of the job mix from the Resident Engineer prior to placing concrete.

3B.3 PREPARATION OF EQUIPMENT AND PLACE OF DEPOSIT.

a. Before placement, all equipment for mixing and transporting the concrete shall be cleaned. All debris and ice shall be removed from the places to be occupied by the concrete. Forms shall be thoroughly wetted (except in freezing weather) and oiled prior to placing reinforcing steel. The reinforcement shall be thoroughly cleaned of ice, dirt, rust scale, or other coatings.

b. Water shall be removed from place of deposit before concrete is placed. All laitance and other unsound material shall be removed from hardened concrete before additional concrete is added.

3B.4 CONVEYANCE. Concrete shall be conveyed from the mixer to the place of final deposit by methods that will prevent segregation or loss of materials. Equipment for chuting concrete shall be of such size and design so as to ensure a continuous flow of concrete at the delivery end without segregation of materials.

3B.5 PLACEMENT.

a. Concrete shall be placed within 1 1/2 hours after mixing begins. Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to rehandling or flowing. The placing of concrete shall be carried on at such rate that concrete is at all times plastic, and flows readily into the spaces between the bars. No concrete that has been contaminated by foreign material shall be used, nor shall retempered concrete be used.

b. When placing is started, it shall be carried on as a continuous operation until placement is completed.

3B.5c

c. Concrete shall be placed in layers not exceeding 18 inches deep, and vibrated in place. During and immediately after depositing, the concrete shall be consolidated by vibrators. The concrete shall be thoroughly worked around reinforcement, around embedded fixtures, and into corners. Accumulations of water on the surface of the concrete due to water gain, segregation, or other causes, shall be prevented as much as possible by employing proper placement, consolidation, and finishing practices. Provisions shall be made to remove such water as may accumulate, so that under no conditions will concrete be placed in such accumulations.

d. Vibrators shall be the internal immersion type, operating at speeds of not less than 7,000 RPM. Vibrators shall be kept constantly moving in the concrete and shall be applied at points uniformly spaced not further apart than the radius over which the vibrator is visibly effective. The entire depth of a new layer of concrete shall be vibrated. The vibrators shall penetrate several inches into the layer below to insure thorough union of the layers. The vibrator shall not be held in one location long enough to draw a pool of grout from the surrounding concrete. Vibration shall be such that the concrete becomes uniformly plastic.

3B.6 FOOTINGS. All footings and foundations without footings shall bear on firm, undisturbed soil.

3B.7 CYLINDRICAL CONCRETE PIERS.

a. All cylindrical concrete piers if required, shall be formed to full depth in fiber forms. Tops of piers shall be finished flat within the confines of the fiber forms. No spillage (mushrooming) over the tops of forms will be permitted. Where conduit emerges from vertical surfaces of concrete piers, no appreciable amount of concrete shall be permitted to spill through forms adjacent to such conduit.

b. Fiber forms for cylindrical concrete piers shall be spirally constructed of laminated plies of fiber. The total wall thickness shall be as published by the manufacturer. The width of each ply shall not be less than 6 inches. Plies shall be laminated with an adhesive of a non-water-sensitive type, with a proven record of satisfactory service in concrete forms. The exterior surface shall be uniformly wax impregnated for weather and moisture protection. The interior surface shall be coated with pure polyethylene uncontaminated by paraffin or other additives. A-Coated Sonotube forms by Sonoco Products Company of Hartsville, South Carolina, are among the products that meet these specifications.

3B.7c

c. Remove all loose soil from bore holes so that concrete will bear on undisturbed soil. Support forms rigidly and in proper horizontal and vertical alignment. After pouring, remove only that part of each form that will be exposed above grade. Backfill excess space between bore holes and forms with thoroughly compacted inorganic soil. Do not use sand backfill unless adjacent undisturbed soil is sand.

3B.8 ANCHOR BOLT INSERTS. No drilling for or placing of anchor bolt inserts or anchors will be permitted in concrete for a period of three days after placement, unless noted otherwise on the drawings.

3B.9 CURING.

a. Provision shall be made for maintaining concrete in a moist condition for a period of at least 5 days after placement.

b. In lieu of wet curing, one coat of a concrete coring sealer which forms a film over the concrete surface, may be used for curing the concrete. The sealer shall meet the ASTM C-309 and AASHTO M-14 specification for moisture retention as tested per ASTM C-156 and AASHTO M-155. The compound shall not be a type that permanently discolors the concrete. Symons Cure and Seal is one of the products which meet this specification. On exposed surfaces, application shall be made immediately after the concrete has been finished. If there is any delay, the concrete shall be kept moist until the application is made. After the forms are removed, the concrete shall be sprayed lightly with water, and then the coat of curing compound applied. If the forms (wood only) cannot be removed within 48 hours, they shall be wetted down and kept wet until their removal, and then the compound applied as above.

3B.10 COLD-WEATHER REQUIREMENTS.

a. Adequate equipment shall be provided for heating concrete materials and protecting concrete during freezing or near-freezing weather. No frozen materials or materials containing snow or ice shall be used. Concrete shall not be placed on frozen soil.

b. All reinforcement, forms, fillers, and ground which will make contact with concrete shall be free from snow and ice. Whenever the temperature of the surrounding air is below $40^{O}F$, all concrete placed in forms shall have a temperature of $45^{O}F$ or higher, after placement. Adequate means shall be provided for maintaining this temperature for 4 days. Any additional time necessary to ensure proper curing of the concrete shall be provided as directed by the Resident Engineer. The housing, covering, or other protection used in connection with curing, shall remain in place and intact at least 24 hours after the artificial heating is disconnected. Do not use salt or other chemicals to prevent freezing.

3B.11 HOT-WEATHER REQUIREMENTS.

a. In hot weather, suitable precautions shall be taken to avoid drying of the concrete prior to finishing operations. Use of windbreaks, sunshades, fog sprays, or other devices shall be provided as directed by the Resident Engineer.

b. Concrete deposited in hot weather shall not have a placing temperature that will cause difficulty from loss of slump, flash set, or cold joints. Concrete temperature shall be less than $90^{O}F$.

3B.12 SLUMP. Concrete shall be tested for consistency at the mixer or at the place of deposit if delivered ready-mixed. The sample shall be taken immediately from the batch and tested by the contractor in the presence of the Resident Engineer in accordance with ASTM standard C143. Concrete with slump in excess of four inches shall be rejected.

3B.13 DELIVERY TICKETS. At the time of concrete delivery, the contractor shall give the Resident Engineer a copy of the delivery ticket bearing the quantity, strength, and air entrainment of the concrete delivered.

3B.14 CONCRETE TESTS. If the Resident Engineer determines that concrete strength and air entrainment tests are needed, the Federal Aviation Administration will make arrangements for and bear costs of such tests.

DIVISION 13 - SPECIAL CONSTRUCTION
SECTION 13C
VASI, REIL, PAPI, AND RVR SYSTEMS

13C.1 DESCRIPTION OF WORK. This section applies to special construction required for a Visual Approach Slope Indicator (VASI), Runway End Identifier Lights (REIL), Precision Approach Path Indicator (PAPI), and New Generation Runway Visual Range (RVR).

13C.2 FRANGIBLE SUPPORTS FOR VASI, REIL, PAPI, AND RVR EQUIPMENT.

a. Description. Frangible couplings will be used to support VASI, REIL, PAPI, and RVR equipment installed near runways. Each frangible coupling has a hexagonal throat with a break-off groove in the middle, designed to break at low impact, thereby minimizing damage to colliding aircraft.

b. Coupling Installation. When installing the frangible coupling, take care to use a wrench which will grip only the lower portion of the hexagonal throat of the coupling, i.e., that portion immediately below the break-off groove. If the wrench grips the upper portion of the hexagonal throat, the coupling may break when torque is applied. See Paragraph 16A.20 for thread remediation. Whether thread remediation is performed or not, apply anti-seize compound to the threads of the frangible coupling, to facilitate removal. The compound shall be an anti-seize assembly lubricant formulated to provide protection for stainless steel and dissimilar metal threaded fasteners against galling, seizure, and heat-freeze. Do not use plumber's pipe-joint compound. The frangible coupling shall be screwed down tightly into the conduit coupling.

c. Cable Connectors. Where cable connectors are required within the frangible couplings, the connectors shall have the capability of separating easily upon breakage of the frangible couplings. Therefore, apply silicone grease of high dielectric strength to the mating surfaces of the connector plug and receptacle housings in the frangible couplings. Do not allow the silicone grease to make contact with the plug and receptacle terminals, and do not place electrical tape over the connector joints. A cable clamp shall firmly grip the receptacle connector of the lower cable assembly (never the plug connector of the upper cable assembly). The connectors shall be vertically positioned such that the joint between the two connectors is as close as feasible to the breakoff groove.

13C.3 EQUIPMENT ELEVATIONS.

a. Elevations of Record. After the contractor has installed the VASI, REIL, PAPI, or RVR lighting unit foundations (concrete or screw anchor), he shall survey and record all such independent foundation top elevations to the nearest

13C.3a

0.01 foot and deliver this information to the Resident Engineer for as-built drawing record. Elevations should be clearly referenced to locations where measured, such as a specific corner of a screw anchor or anchor plate. It is emphasized that all foundations of every lighting unit shall be measured such as the four legs of an individual VASI box.

b. Elevation Verification. Runway elevations indicated on the drawings were established on the date indicated. Prior to using these elevations for construction survey proposes, the contractor shall verify, through the Resident Engineer, that such runways have not been resurfaced after the date of the engineering survey. If resurfacing has occurred, new benchmarks will be established by the Resident Engineer. The VASI unit light slot elevations shall not be altered from those indicated on the drawings.

13C.4 ALIGNMENT AND AIMING ANGLE TOLERANCES.

a. Aiming Angles. Refer to site drawings for locations and aiming angles for individual VASI, REIL, PAPI, or RVR lighting units.

b. VASI and PAPI Lamp Housing Assembly (LHA) Unit Tolerances.

(1) Longitudinal Alignment Tolerances. Front face of each LHA unit shall be located within ± 6 inches of single line perpendicular to the runway centerline.

(2) Azimuthal Alignment Tolerance. Longitudinal axis of each LHA unit shall be parallel to the runway centerline within ± 1/2 degree.

(3) Mounting Height Tolerance. Light beam centerline of each LHA unit (within a bar for VASI) shall be located on a single horizontal plane within ± one inch.

(4) Aiming Angle Tolerance. Aiming angle of each LHA unit shall be within ± 2 minutes of angle specified.

13C.5 SYSTEM CONTROL. Unless otherwise indicated, VASI, REIL, or PAPI system construction shall include a method of on/off control shown on the drawings or specified herein. REIL control will also include provision for varying the lighting intensity.

13C.6 OPERATIONAL TESTS. The contractor shall demonstrate that the VASI, REIL, or PAPI system will operate satisfactorily by a series of operational test cycles and a continuous test run of 24 hours minimum. The tests shall clearly indicate that the system meets all the requirements of the drawings, specifications, and the manufacturer's instruction manuals.

DIVISION 16 - ELECTRICAL
SECTION 16B
600-VOLT POWER CABLE FOR UNDERGROUND INSTALLATION

16B.1 SCOPE. This section covers the material requirements for all contractor-furnished single-conductor 600-volt power cable required for direct earth burial installation. Installation of power cable is covered in Section 16F.

16B.2 GENERAL REQUIREMENTS. Cable construction shall include copper single conductor and XLP (thermosetting crosslinked polyethylene) insulation. Cable shall be UL listed as Type USE or RHW or RHH for use in circuits not exceeding 600 volts at conductor temperatures of 90^{O}C for continuous normal operation, 130^{O}C for emergency overload conditions, and 250^{O}C for short circuit conditions. Cables shall be suitable for direct burial and above-grade installation in wet or dry locations.

16B.3 APPLICABLE SPECIFICATIONS.

a. Underwriters Laboratories Standard 854 for Service Entrance Cables.

b. Underwriters Laboratories Standard 44 for Rubber-Insulated Wires and Cables.

c. ICEA Publication Number S-66-524, NEMA Publication Number WC7 for Crosslinked Polyethylene-Insulated Wire and Cable.

d. Federal Specification J-C-30A.

16B.4 CABLE CONSTRUCTION. Cable characteristics shall include the following materials and construction:

a. Conductors. Conductors shall be solid or Class B stranded annealed uncoated copper, per UL Standards 854 and 44.

b. Separator. A suitable separator over the conductor may be used at the option of the manufacturer.

c. Insulation. Each conductor shall be insulated with XLP (crosslinked polyethylene) complying with the physical and electrical requirements of UL Standard 854 for Type USE and UL Standard 44 for Types RHW and RHH and Paragraph 3-6 of ICEA Publication Number S-66-524. The insulation shall be applied lightly to the conductor and shall be free-stripping.

16B.5 IDENTIFICATION. The cable shall be identified by surface marking indicating manufacturer's conductor size and metal, voltage rating, UL Symbol and type designation, and year of manufacture.

16B.6 TESTS. Cable shall be tested in accordance with requirements of UL Standard 854 for Type USE, UL Standard 44 for Types RHW and RHH, and ICEA Publication Number S-66-524, Paragraph 3.6.

16B.7 DATE OF MANUFACTURE. Year of manufacture of all cable shall be no earlier than one calendar year immediately preceding contract award date.

16B.8 PACKAGING. All cable shall be provided on wooden or steel reels, and ends of all cable shall be sealed to prevent entry of moisture. All reels shall identify type, length, and year of manufacture of cable packaged on such reels. All such identification shall be clearly provided by the manufacturer.

DIVISION 16 - ELECTRICAL
SECTION 16E
CONTROL CABLE

16E.1 SCOPE. This section covers the material requirements for all contractor-furnished exterior standard and gopher-resistant filled control (telephone) cable to be installed as shown on the drawings. Installation of control cables is covered in Section 16F.

16E.2 APPLICABLE SPECIFICATIONS.

a. United States Department of Agriculture, Rural Electrification Administration (REA), Specification PE-39 for "Filled Telephone Cable" (Bulletin 345-67) latest edition, including all addendums and attachments thereto, forms a part of these specifications and is applicable in its entirety.

b. Certain requirements, specified herein, supplement the requirements of Specification PE-39, and shall receive special attention by the cable manufacturer and contractor.

16E.3 GENERAL REQUIREMENTS.

a. Definition. The term "control cable" used throughout these specifications and on the project drawings is a general FAA term for cable used to transmit voice and control functions. The required cable is termed "telephone" or "telephone exchange" cable by the cable manufacturing industry.

b. Quality. All control (telephone) cables shall be the standard products of a single major cable manufacturer and shall be designed and manufactured according to the highest industry standards. All cables shall be free of any imperfection which could affect serviceability and design life.

16E.4 STANDARD CABLE CONSTRUCTION. Cable requirements, complying with these specifications and Specification PE-39, include the following materials and construction.

a. Conductors. #19 AWG solid annealed copper.

b. Conductor Insulation. Solid polypropylene or polyethylene color coded in accordance with telephone industry "standard" coding.

c. Twisted Pairs. Individual conductors twisted into pairs with varying lays to minimize crosstalk.

d. Forming of Cable Core. Cables having 25 pairs or less are assembled into a single cylindrical group. Cables having more than 25 pairs are assembled in units, each individually identified by color coded unit binders.

16E.4e

e. Filling Compound. Water resistant non-hardening compound to fill and seal all interstices between the conductor pairs.

f. Core Covering. Non-hygroscopic dielectric tape.

g. Flooding Compound. Water resistant and bonding compound to fill all voids between the core wrap and shield and between the shield and jacket.

h. Shield. Corrugated electrically continuous and longitudinally applied 0.008 inch coated aluminum or 0.005 inch copper.

i. Jacket. High molecular weight polyethylene or high-molecular weight ethylene copolymer.

16E.5 GOPHER-RESISTANT CABLE CONSTRUCTION.

a. General. If gopher-resistant cable is required by drawings or special specifications, cable construction shall comply with all construction requirements for standard cable in Subsection 16E.4 above (including conformance with REA Specification PE-39) excepting for item h, "Shield", which shall comply with the following:

b. Gopher-Resistant Shield. Corrugated electrically continuous and longitudinally applied overlapping metal shield consisting of one of the following materials:

(1) 0.010 inch copper.

(2) 0.006 inch copper/stainless steel/copper bimetallic alloy.

(3) 0.007 inch Alloy 194 for 6 pr #19 cable.

(4) 0.006 inch Alloy 194 for cables larger than 6 pr #19.

(5) 0.008 inch coated aluminum with 0.006 inch coated steel.

16E.6 CABLE IDENTIFICATION. In accordance with Specification PE-39, all cable shall have jacket printed at periodic intervals with the name of the manufacturer, manufacturer's standard designation, year of manufacture, number of pairs, conductor gauge, sequential length marks, and notation signifying compliance with Specification PE-39 (if not clearly referenced in the manufacturer's submittals). In addition, the gopher-resistant shield shall be clearly identified.

16E.7 DATE OF MANUFACTURE. Year of manufacture of all cable shall be no earlier than one calendar year immediately preceding contract award date.

16E.8 PACKAGING. In accordance with Specification PE-39, all cable shall be stored and shipped on reels affording the required protection. Thermal wrapping shall be provided and ends of all cables shall be capped against exposure to moisture. All reels shall be labeled by the manufacturer and shall bear the manufacturer's name, year of manufacture, REA cable designation, description of cable, actual shipping length, and identification referenced to tests of record as required herein.

16E.9 TESTS.

a. All project cable furnished shall satisfy all test requirements of Specification PE-39. Records of all such tests shall be retained by the manufacturer, according to Paragraph 29 of Specification PE-39, and shall be promptly made available to the Federal Aviation Administration upon request. All tests shall be specifically and clearly referenced to all reels of cable furnished.

b. Basic cable design, for all project cable furnished, shall have proven acceptable to REA through "qualification testing" according to Paragraph 27 of Specification PE-39.

c. Electrical tests, according to paragraph 28.1 of Specification
PE-39, shall be performed on 100 percent of all project cable furnished.

d. Quality assurance (capability) tests, according to Paragraph 28.2 of Specification PE-39, shall be performed on such periodic production basis so as to represent quality of all project cable furnished.

16E.10 SUBMITTALS. Prior to procuring any cable specified herein, the contractor shall submit the following documents for the specific cable that the contractor proposes to use, to the Contracting Officer, and receive written approval therefrom (see Paragraph 1A.4 above):

a. Manufacturer's complete cable specifications, including manufacturer's statement of compliance with REA Specification PE-39.

b. Drawing showing cable construction details.

DIVISION 16 - ELECTRICAL
SECTION 16F
CABLE INSTALLATION

16F.1 DESCRIPTION OF WORK. The extent of work is indicated on the drawings and by the provisions of this section. Included in this section are installation, splicing, and testing of power and control cables.

16F.2 GENERAL REQUIREMENTS.

a. Service Interruptions. Existing sources of power and control are indicated on the drawings. For circuits actively in use, the contractor shall coordinate temporary interruptions of service with users and suppliers, the Resident Engineer, and the airport management.

b. Cable Protection.

(1) All cable ends which will be exposed to weather, water, ground, or corrosive environment prior to termination, shall be sealed against these elements while awaiting termination or splicing. This requirement also applies to all cable ends in manholes or handholes. The sealing material shall be properly sized, easily removable heat shrinkable end caps (3M ICEC are acceptable), or electrical tape (see Paragraph 16A.19 above), with an application of brushed-on electrical coating.

(2) Cables shall not be bent at radii less than radii recommended by the manufacturer, or 10 times cable diameter (12 times diameter for armored cable), whichever is greater. Any cables damaged in any way by sharp bending shall be replaced.

(3) Special care should be taken when working with filled cables, especially when the temperature is below 35^{O}F. This type of cable becomes more difficult to bend and work as the temperature decreases, and there is a possibility of cable damage at temperatures near 0^{O}F.

c. 600-Volt Wire and Cable Color Coding.

(1) All single conductor 600 volt wire and cable for 120/240 volt power circuits shall be color coded black for line 1, red for line 2, and white for the neutral.

(2) For conductor sizes smaller than #8 AWG, conductor insulation shall be color coded. For sizes #8 AWG and larger, and for armored power cable, colored tape shall be used to identify the conductors if insulation is not color identified.

16F.2c(3)

(3) Conductors shall be color-coded in junction boxes, square duct, terminal boxes, or any other place accessible to view. In no case shall green be used for other than grounding, nor white for other than the system grounded (neutral) conductor.

d. Designation of Armored Cable. On drawings and other contract documents, the letter A immediately following the AWG number of a cable, indicates that the cable is armored (e.g., 3/C #8A, 600V).

16F.3 DIRECT-EARTH BURIAL CABLE INSTALLATION.

a. Installation Method. Unless otherwise specified, outdoor cables running from one structure or item of equipment to another, shall be direct earth buried. Direct-earth burial cables shall be installed either by the trench and backfill method or by the cable plowing method in accordance with all the requirements specified herein.

b. General Requirements.

(1) Underground cables shall be installed in straight lines between terminating locations or points of directional change.

(2) Unless otherwise specified, cables shall be installed a minimum of 24 inches and 30 inches below finished grade on airport property and off airport lands, respectively.

(3) Wherever possible, cable shall be installed in one continuous length without splices from connection to connection. The number of splices shall be kept to a minimum. Cable ends shall be effectively sealed against moisture immediately after cutting any type of cable. See the MALSR splice restrictions of Paragraph 13A.6.

(4) The contractor shall prepare a schedule for installing each reel of underground cable and shall submit it to the Resident Engineer for approval before installing any cable. The plan shall be predicated on use of the longest practical lengths of cable, in order to minimize splicing.

(5) A cable loop of at least three feet shall be left on each end of every cable run, on at least one side of every splice, and at all points where cable is brought above ground. A 3-foot minimum surplus cable length shall be left on both sides of splices in handholes and light bases. The slack loop shall be installed with the same minimum depth requirements as the cable run. Where cable is brought above ground, enough additional slack cable shall be left to make the required connections.

16F.3c

c. Trench and Backfill Installation Method.

(1) Comply with all trenching, backfilling, compaction, and restoration requirements in Division 2.

(2) The contractor shall unreel the cable adjacent to or over the trench and manually place it in the trench. Do not pull the cable into the trench or drag it along the trench.

(3) Where more than one cable is installed in the same trench, maintain separation as hereinafter specified. Multiple cables shall be installed in the same relative positions throughout the cable trench. Cables shall not be stacked, crossed or intertwined in any manner.

d. Cable Plowing Method.

(1) Vibratory cable plowing equipment, adequate for installation of the types of cables to be installed and for the depth required, may be used, provided that soil conditions are suitable, equipment is in good working order, and proper installation procedures are utilized.

(2) While cable is being plowed into place, one person in addition to the operator of the plowing vehicle shall be present to assure that the cables do not kink or bind tightly while entering the plow.

(3) If, during plowing operations, it appears that the soil contains sharp objects, rocks over 2 inches in diameter, or any other hazard to the cable, plowing shall be discontinued, and the Resident Engineer notified. The Resident Engineer shall determine whether plowing will be allowed to continue, or whether another cable placement method shall be used.

(4) The slice left by the plow shall be closed by tamping or other approved method, after cable placement, to minimize the disturbance of the surface by the slice.

e. Cable Separation - Direct Burial.

(1) Where new buried power cables cross over or under control or telephone cables, power cables shall be installed in a length of PVC duct extending two feet each side of the crossing. Minimum separation shall be twelve inches.

(2) Power cables of the same circuit may be laid together in the trench without separation, except as noted below. Series lighting cables may be considered being of the same circuit.

16F.3e(3)

(3) Power cables, of the same or different circuits of less than 600 volts, may be laid together in the same trench without separation.

(4) All power cables, 5,000 volts and below, shall be separated from all control, telephone and coaxial type cables by a minimum of 6 inches.

(5) Power cable, of more than 5,000 volts, shall be separated from all other cables by a minimum of 12 inches.

(6) Control, telephone, and coaxial cables may be laid in the trench without separation from each other.

f. Buried Ground Wire (Counterpoise). Unless specified otherwise, all direct-earth burial power, control and coaxial cables shall include the installation of #6 bare copper ground wire (counterpoise) per Paragraph 16A.4e above.

g. Cable Markers.

(1) Cable runs shall be marked by concrete cable markers according to project drawings. Cable markers for underground cable shall be installed at all changes of direction in cable runs, at 300 feet intervals in straight-line cable run segments, and at all splice locations.

(2) Markers shall not be poured in place. The markers shall be installed flat in the ground immediately above the cable and with approximately one inch projecting above the surface. Impress additional circuit identification symbols on markers if so directed by the Resident Engineer. Existing cable markers removed or displaced shall be replaced after installation of new cable.

16F.4 CABLE INSTALLATION IN UNDERGROUND DUCTS AND CONDUIT.

a. Precautions.

(1) Because almost all cable failures are caused by mechanical damage occurring during installation, the contractor should employ workmen experienced in underground cable installation, and utilize all the proper and unique equipment necessary for successful cable installation. Excessive direct tension, excessive sidewall pressure, sidewall impact, abrasion, sharp bending, and moisture intrusion will either destroy or shorten the useful life of cables installed.

16F.4a(2)

(2) The following conditions and installation procedures, capable of damaging cable, shall be avoided:

(a) Sediment in ducts.

(b) Scoring of duct bends by pulling ropes.

(c) Inadequate support of guiding pulleys and pull tubes, resulting in binding of mechanisms and misalignment.

(d) Inadequate cable and duct lubrication, especially at bends.

(e) Dragging cables over manhole frame edges, duct entrances, and ground or pavement surfaces.

(f) Exposure to pedestrian or vehicular traffic.

(g) Looping in and out of manholes to avoid splicing.

(h) Power pulling at locations other than at ends of cable.

(i) "Jerking" of cables caused by too weak rope that elongates under tension, exerts momentary sharp pull on cable, recovers, and elongates for another like cycle.

(j) Sheaves and pulleys that stop rolling during pull, due to inadequate support or lubrication.

(k) Inadequate sealing and mechanical protection of cable ends.

(l) Reel surface and edge damage from poor hoisting techniques.

(m) Pulling distances too great.

b. Installation Equipment. Major equipment items, required for installing cable in underground ducts, shall include the following:

(1) Power winch.

(2) Cable feed-in tubing guide capable of producing a uniform and rigid 3 and 4-foot and greater radius bend, and having a nominal diameter equal to that of the ducts.

(3) Single pulleys or sheaves providing a minimum cable bending radius (not overall sheave radius) of 10 times the largest cable diameter. Such sheaves shall be

used for minor cable bends within "through cable" manholes and at feed-in manhole rims (if necessary). Sheaves shall have ball or roller bearings.

(4) Adjustable gang pulleys with three or more pulleys capable of producing up to a 4-foot smooth cable bending radius. Each pulley shall have minimum cable bending radius of 10 times the largest cable diameter.

(5) Lubrication equipment to pre-lubricate ducts, cables at guide-in tubing, and cables at intermediate pull-through manholes.

(6) Cable reel support equipment including stands, arbor, and braking mechanism.

(7) Dynamometer for measuring pulling tensions.

(8) Communications equipment.

(9) Pulling ropes or cords having the following characteristics:

(a) A working strength at least equal to the maximum allowable cable tensions as specified herein. "Working strength" is normally 10 to 14 percent of published rope "breaking strength".

(b) Rope or cord shall be a twisted or braided synthetic fiber unaffected by water and having a low level of elongation under load. Material shall have a texture non-injurious to plastic duct when pulled against bends. Wire rope, if proposed, shall have a smooth and rigidly adhering synthetic material covering.

(c) All pulling ropes or cords shall have swivel devices at cable attachment ends.

(10) Cable lubricant specifically manufactured for electrical and control (telephone) cables. Do not use soap lubricants or those containing soap which are harmful to polyethylene- sheathed cables.

(11) Cable pulling devices (secured to ends of cable as specified below).

c. Cable Pulling Devices.

(1) Pulling devices for securing cable to pulling rope shall be factory-installed pulling eyes, field-installed pulling eyes, or basket weave cable grips. All shall be provided with integral or separate swivels.

(2) Factory-installed pulling eyes necessitate that each cable pulling segment be cut to length by the cable manufacturer. Greater tensions and longer pulling lengths can be used with factory pulling eyes for straight duct bank segments.

(3) Field-installed pulling eyes for control cable shall be a 4-crimp series, sized to the cable. Power cable pulling eyes shall be a type secured to conductors and approved by the Resident Engineer.

(4) Basket weave cable pulling grips shall be carefully sized to the specific diameters of the cables to be installed. Use grips with a rotating eye feature for power and control (telephone) cables.

d. Duct Cleanout and Pre-Lubrication.

(1) If any new or existing underground duct or conduit displays any evidence of contamination by soil or other foreign matter, such ducts or conduit shall be cleaned with a stiff bristle brush, swabbed, and flushed clean with water under pressure, before proceeding with cable pulling operations. Even a minor amount of soil or sediment in the bottom area of a duct will greatly increase the coefficient of friction and pulling tension required. With soil contamination, cable lubricant is of little value. Therefore, it is of utmost importance that conduit be cleaned prior to installation of cable.

(2) It is the contractor's responsibility to determine whether ducts designated for occupancy should be cleaned. The contractor shall assume complete responsibility for any difficulties or damage to the cable in placing cable in ducts.

(3) In addition to cable lubrication as specified elsewhere, all ducts to receive cables under this contract, shall be pre-lubricated using the same lubricant as for cables. Lubrication shall be thoroughly applied with applicators designed for this purpose. Lubrication on cable only, will rub off to a large degree, especially at duct bank offsets at manholes.

16F.4e

e. Setting Up Cable Reels and Apparatus.

(1) The contractor shall inspect cable reels for flange protrusions which could damage the cable sheath. Also, the contractor shall inspect for any obstructions that could interfere with proper unwinding of the cable.

(2) Careful control shall be exercised in the movement of cable reels. Where it is necessary to roll a reel to a desired location, it shall be rolled in the direction indicated by the arrows painted on the reel flanges. The reel shall not be allowed to tilt. A substantial runway of heavy planks should be employed where uneven ground conditions exist that may cause the reel to tilt. Where it is necessary to move a reel of cable with heavy equipment, a cable reel sling or equivalent should be used.

(3) In conduit sections containing curves, the cable reel shall be set up at the manhole near the curve unless other conditions do not permit.

(4) Cable reels shall be set up on the same side of the manhole as the conduit section in which the cable is to be placed. The reel shall be made level and brought into proper alignment with the conduit section so that the cable may be passed from the top of the reel in a long smooth bend at maximum radius into the duct without twisting and making more than a 90-degree bend. This is of utmost importance in handling filled type cable in temperature ranges of 35^{O}F and lower. Under no circumstances shall the cable be pulled from the bottom of a reel.

(5) It is essential that the cable reel be in proper alignment and level during the placing operation. Incorrect location of the reel will cause unnecessary binding which will result in uneven cable feed.

(6) Do not permit adjacent turns of cable on the reel to stick together and cause binding as the cable is payed off the reel. Feed the cable by rotating the reel manually.

(7) Other cable support equipment, such as pulleys, sheaves, and gang-pulley equipment shall be set up rigidly within intermediate manholes to smoothly guide cables to exiting ducts.

f. Attaching Pulling Grips. All pulling grips shall be stretched onto the cables such that the entire lengths of the grip woven material will exert tension on the cable, thereby distributing stress. If the end of any cable grip

(furthest from the cable end) does not grip as tightly as the lead end, secure same to cable with a steel banding. Inspect cable grips frequently, and the first pull of control (telephone) cable in particular (in the first intermediate manhole), to ascertain that this requirement is fulfilled. If any uneven gripping is evident, banding will be required for all remaining cable installation of the applicable cable type and size.

g. Feeding and Pulling Cable.

(1) All cable shall be installed using methods that will prevent excessive and harmful stretching, twisting, and flexing of the cable. Such damaging treatment will mechanically weaken the cable and destroy the electrical properties immediately or in a short time.

(2) Cable may be pulled by hand or power winch. Pull rope shall be attached to cables with pulling eye or basket weave pulling grips (all equipped with swivels) for each cable pulled. Do not exceed maximum allowable pulling tension as hereinafter specified. Do not use cable manufacturer's maximum pulling tensions except for cable factory-installed pulling eyes.

(3) All splices shall occur in manholes only. Splices shall not be pulled into ducts or manholes.

(4) Cable feed-in tubing guide, same size as conduit, of suitable length shall be secured in the manhole between the cable reel and the face of the duct to protect the cable and guide it at the maximum possible smooth radius into the duct as it is payed off the reel.

(5) A cable lubricator (funnel) shall be placed around the cable just ahead of the cable feed-in guide to facilitate lubrication of the cable. The quantity of lubricant shall conform to the lubricant manufacturer's recommendations.

(6) Before starting to pull, check the equipment carefully to make sure that it is properly set up in order to minimize the chance of interruption once pulling has started. Tension shall be kept on both the cable reel and the pulling line at the start of the pull. Excessive slack and the twist of the pulling line may cause the connecting links to turn and catch in the duct. As far as possible, the cable shall be pulled in without stopping. A pulling speed of 80 to 100 feet per minute is recommended to minimize friction forces.

16F.4g(7)

(7) A person experienced with cable handling shall be posted continuously at the cable reel while pulling cable. In addition to braking the reels and observing cable lubrication, he shall carefully inspect cable paying off the reel for cable sheath and other defects. If defects are noticed, the pulling operation shall be stopped immediately and the Resident Engineer promptly notified of the defect. Kinks and/or irregularities in the cable sheath shall be removed or corrected as directed by the Resident Engineer.

(8) Careful attention shall be paid to signals from the installation crew as the cable is being pulled so that pulling may be stopped instantly whenever necessary to avoid damage to the cable.

(9) If for any reason the pulling operation is halted between manholes, the winch operator shall not release the tension on the winch unless directed to do so. In restarting the pulling operation, the inertia of the cable shall be overcome by gradually increasing the tension in steps a few seconds apart until the cable once again is in motion.

(10) The leading end of the cable at intermediate manholes shall be guided into the duct and a feeder tube nozzle placed around the cable to prevent the cable from rubbing on the edge of the duct.

(11) All pulled ends shall be examined for evidence of damage due to the pulling operation. The cable sheath shall not be pulled beyond the cable core. Notify the Resident Engineer for inspection, and for repair or replacement action that must be taken where cracks or openings are found in the cable sheath following the pulling operations.

(12) Cable ends shall be kept sealed at all times using REA-approved cable end caps and electrical tape. After the cable has been placed, the exposed cable in the manholes should be wiped clean of cable lubricant with a cloth before leaving the manhole.

(13) All individual cable segments shall be pulled in one direction only. Both ends of a cut cable segment shall not be introduced into an intermediate manhole and pulled in two different directions. Also, no cable segments shall be pulled out of any manhole and introduced into the same manhole for a continuation of a cable segment pull. These unacceptable pulling practices, used to avoid splicing, result in abrasion from dragging over ground surfaces and manhole frame, exposure to pedestrian and vehicular traffic,

damage to cable layers from twisting and small bending radii when pulling cable loops through manhole frame. Shields of cables so pulled are almost always damaged.

(14) Sidewall cable pressure from duct bends, feed-in tubes, and pulleys, frequently govern the length of cable that can be pulled. The greater the radii, the less the sidewall pressure. Therefore, the contractor shall use the maximum radius at every manhole where a 90-degree pull is permitted. Adjustable gang pulleys with three or more pulleys shall be used for horizontal bends in manholes. Individual pulleys within the gang pulley device shall have a cable bending radius of minimum 10 times outside diameter of largest cable to be pulled. Width of pulleys shall be adequate to support the cable group to be pulled. Adjust gang pulleys to produce a smooth 90 degree curvature bend where such changes in direction occur.

(15) If cables will be spliced in a manhole where duct banks enter and leave 90 degrees apart, separate cable segments shall be introduced into the manhole and pulled in different directions unless pulling is permitted around a horizontal gang pulley within the manhole.

(16) Where more than one cable will be installed in a single duct, all shall be pulled into the duct concurrently.

h. Cable Spoil. All cable pulling ends shall be trimmed back to remove cable material always damaged by pulling eyes or basket weave pulling grips. To remove such spoil, cut each cable off a distance from the end equal to three times the length of pulling eye or twice the length of the basket weave pulling grip as a minimum. These amounts shall be cut off for all cables including those to be spliced or terminated by others.

i. Use of Dynamometer.

(1) The dynamometer shall be accurately calibrated and secured to properly indicate tension exerted on the cable. The dynamo-meter reading will usually give the resultant force exerted on the anchoring device, which shall be converted to the horizontal component to give correct value of pulling tension.

(2) Dynamometer readings shall be made only in the presence of the Resident Engineer. If any pulling tension is approaching the maximum allowable, and if in the judgment of the Resident Engineer, the allowable will be appreciably exceeded for the proposed run, pulling

operations shall be immediately stopped, and the cable run spliced in the preceding manhole.

j. Maximum Cable Pulling Tensions. Maximum allowable cable pulling tensions, as measured by dynamometer, shall not exceed the following values for single cables. For multiple cables, add the tension values for the number of cables being pulled. Use a pulling rope having a working strength [not breaking strength -- reference subsection 16F.4b(9)] at least equal to the "maximum allowable pulling tension" values below.

Cable	Maximum Allowable Pulling Tension (lbs)
1-1/C #8	125
1-1/C #6	200
1-1/C #4	325
1/1-C #2	500
1-6 PR #19	125
1-12 PR #19	250
1-25 PR #19	500

k. Separation of Cables Installed in Conduit or Duct.

(1) Power cables of the same voltage may be installed in the same duct.

(2) Power cables of less than 600 volts may be installed in the same duct.

(3) Power cables of less than 600 volts shall not be installed in the same duct with control, telephone, or coaxial type cables.

(4) Power cables of more than 600 volts shall not be installed in the same duct with control, telephone, coaxial, or power cables of less than 600 volts.

(5) Control, telephone, and coaxial cables may be installed in the same duct.

l. Cable Installation in Manholes or Handholes.

(1) Power and control cables shall be installed in separate manholes or handholes unless otherwise specified. If installed in same manhole, install power and control cables on opposite sides. At splice locations, use cable racks at different elevations to separate power and control cables.

16F.4l(2)

(2) Cable racking surplus shall be pulled back by hand into intermediate manholes. Pull surplus one manhole at a time beginning near both ends of cable segment. Do not use power winch unless permitted by the Resident Engineer.

(3) Cables shall be carefully routed around manhole interiors, taking all necessary precautions to prevent sharp bending. Cable racks shall be plastic or galvanized steel with properly sized porcelain insulators for the latter. Fasten all cables to plastic racks with nylon ties and to steel racks by means of the insulators.

(4) Where a splice occurs, cable shall make one loop around the manhole, and the splice located near the center of the loop.

(5) Where power and control cables are installed in the same manhole, the entire exposed length of all power and control (telephone) cables shall be fireproofed by applying fire and arc proofing tape per Paragraph 16A.23 above.

16F.5 CABLE TAGGING.

a. All cables shall be tagged in each manhole and in each terminal cabinet with not less than two tags per cable, one near each duct entrance hole. Tags shall be attached to cables immediately after installation of each cable.

b. Tags shall be circular in shape and 2 inches in diameter. Material shall be minimum 0.020-inch thick copper or brass or 0.0625-inch thick lead. 1/4-inch high steel lettering dies or equivalent size engraving equipment shall be used to make the tags. Tags shall be secured firmly to cables with Number 14 AWG copper wire.

c. Tag markings shall consist of an abbreviation of the facility served by the cable and the letter "P" or "C" denoting power or control. The facility shall include the applicable runway. Where like multiple control cables are routed between the same facilities, further identify such cables throughout the run with a single-digit number following the letter "C". All individual-conductor power circuits shall be bundled under the same tag as opposed to separate tags for each conductor.

16F.6 SPLICING.

a. General Requirements.

(1) Splices shall be performed only by experienced and qualified cable splicers regularly engaged in this type of work.

16F.6a(2)

(2) Cable armor and/or shielding shall be bonded together across splices to provide continuous electrical paths.

(3) Where a cable is cut preparatory to splicing, the work shall proceed without delay. When an unavoidable delay is encountered in completing a splice, the opened cable shall be protected to prevent the entrance of moisture and foreign matter.

(4) Any splicing material (such as resin) older than the do-not-use-after date on the package, shall be replaced with new material at the contractor's expense.

(5) Unless otherwise specified, where multiple runs of single-conductor underground power cables are spliced, each single-conductor cable shall be spliced in a separate envelope.

(6) Approved stress reduction methods shall be used in splicing all shielded high voltage power cables (5KV and higher voltage).

b. Underground Power Cable Splices (600 Volts or Less). All low voltage splices shall be encapsulated in pressure resin in clear plastic envelopes, except as otherwise specified in Paragraph 13A.6 above, on drawings, or in special specifications. All low voltage splices shall be made with compression connectors specified in Paragraph 13A.6 above, except as otherwise specified on drawings and in special specifications.

c. Underground Control (Telephone Cable) Splices.

(1) Kit and Resin. The splices shall consist of a rigid polypropylene mold body with a built-in spacer web to provide cable centering and proper compound coverage. The mold body shall be filled with a flexible polyurethane electrical compound capable of continuous operation at 90°C, with an emergency overload temperature rating of 130°C. Splices must have provisions for inline splicing of shielded or non-shielded plastic or rubber-jacketed control (telephone) cables. The splices shall be rated for direct burial applications. For control cables with outside diameters between 0.25 inches and 3.25 inches, 3M Scotchcast Signal and Control Cable Inline Splicing kits of the 72N series are approved, as they are among kits which meet specifications.

(2) Connectors. Control cable splice connectors shall be in-line type, in which two conductors are spliced by laying one conductor in each end of the connector, and crimping the connector with a special tool selected to match the connector type and size. Before crimping,

16F.6c(2)

the connector is open on one side of its length. After crimping, the connector is closed all around its length. The connector bodies shall be made with a tin-plated phosphor bronze piece on the inside, to contact the cable conductors, and bonded polyester insulation on the outside, to insulate the connection. The insulation shall be color coded to denote wire size range. The cable splice connectors and tools shall incorporate the insulation displacement termination technique which uses a slotted, tin-plated contact to displace the conductor insulation, thus providing four redundant electrical contact points. Connectors which require prestripping the conductor shall not be used. AMP, Inc. (Harrisburg, PA) Picabond connectors sized for conductor size, and matching AMP tooling, are among products meeting the above specifications, and are approved.

d. Submittals. See Paragraph 1A.4 above. If the contractor --

(1) Intends to splice using materials different from those specified in Paragraphs b and c above, or

(2) Intends to splice a 5KV or higher voltage power cable,

then the contractor shall submit to the Contracting Officer, shop drawings or catalog cuts for all splicing materials, tools, and dies. The contractor shall splice no cables before he has received the Contracting Officer's approval of these items.

16F.7 CONTROL (TELEPHONE) CABLE TERMINATIONS.

a. Cable Routing and Support.

(1) Cable jackets shall be removed within terminating enclosures such that no more than 2 inches of jacket material is visible within the enclosures. Ground shielding and armor as specified below.

(2) Exposed cable conductor bundles shall be lock-stitched laced together with nylon lacing twine spaced at approximate 5/8- inch intervals. Each bundle shall contain maximum 25 pairs of conductors which shall be neatly routed and secured to backing panels with nylon clamps.

b. Cable Pair Terminations.

(1) Terminated pairs shall have the same sequence on each terminal strip. (For terminal block specifications, see Paragraph 16A.19, above.) The color code termination sequence on the terminal strips shall be in accordance with the following schedule. The white

16F.7b(1)

mates shall start at the top or left-hand side of the terminal block with color continuing down or across the block according to the following schedule:

MATE COLORS	PRIMARY WIRE COLORS
WHITE	BLUE
"	ORANGE
"	GREEN
"	BROWN
"	SLATE
RED	BLUE
"	ORANGE
"	GREEN
"	BROWN
"	SLATE
BLACK	BLUE
"	ORANGE
"	GREEN
"	BROWN
"	SLATE
YELLOW	BLUE
"	ORANGE
"	GREEN
"	BROWN
"	SLATE
VIOLET	BLUE
"	ORANGE
"	GREEN
"	BROWN
"	SLATE

(2) When cables do not have the preceding color code, like pairs shall be terminated in the same sequence at both ends of the cable.

16F.8 CABLE ARMOR AND SHIELD GROUNDING.

a. Grounding Locations.

(1) Control cable armor and/or shielding shall be grounded at one end of each cable run only.

(2) Power cable armor shall be grounded at both ends of each cable run.

(3) Shielding and armor of control and power cables shall not be grounded at splice locations.

16F.8b

b. Grounding Procedures.

(1) Use #14 AWG stranded copper grounding conductors for grounding shielding and armor. Secure grounding conductors to shielding and armor by using UL-approved grounding connectors specifically designed for this purpose. Neatly tape ends of butted cable to conceal the connections.

(2) Attach crimp-type lugs of proper size to free ends of grounding conductors, and secure lugs to enclosure interior wall with a machine screw and nut.

16F.9 CABLE TESTING.

a. General Requirements.

(1) Both before and after installation, all contractor-furnished and Government-furnished power and control (telephone) cables shall be tested as required herein. Testing after installation shall be accomplished across splices.

(2) All testing shall be accomplished in the presence of the Resident Engineer. Furnish two signed and dated copies of all test results, clearly tabulated for all segments of cable tested, to the Resident Engineer.

(3) The contractor shall use his own test equipment, which shall bear current calibration certification from a certified instrument calibration laboratory.

(4) Any measured values not conforming to specified values shall be cause for rejection of the defective cable installation. After repair or replacement, if so required by the Resident Engineer, cable shall be retested and additional remedial work performed until satisfactory test results are obtained. All repair and replacement work shall be accomplished at no additional cost to the Government.

b. 600-Volt Power Cable Testing.

(1) Conductor continuity shall test positive.

(2) Armor continuity shall test positive.

(3) Dielectric strength/insulation resistance shall test 50 megohms minimum at 500 volts D.C. between the following:

(a) Conductor and ground for single-conductor cable.

16F.9b(3)(b)

(b) Individual conductors for multi-conductor armored cable.

(c) Individual conductors and grounded armor.

c. Control (Telephone) Cable Testing.

(1) Conductor continuity shall test positive.

(2) Shield continuity shall test positive.

(3) Armor continuity shall test positive.

(4) Dielectric strength/insulation resistance shall test 50 megohms minimum at 500 volts D.C. between paired conductors and between individual conductors and grounded shield.

(5) After installing control cable, the minimum number of acceptable paired conductors shall comply with the following:

(a) For 11 pair or less cable, all pairs shall test acceptable.

(b) For 12 to 25 pair cable, all pairs except one shall test acceptable.

SPECIFICATIONS SUPPLEMENTAL TO
SPECIFICATIONS FAA-GL-840b AND FAA-GL-918C

10/23/03

1. Contractor-Furnished Frangible Couplings. The following specifications supersede Paragraph 16A.20 of Specification FAA-GL-918C. The Contractor shall furnish all the frangible couplings to be applied under this contract. All frangible couplings shall be 2"-diameter cast aluminum couplings having hexagonal clamping ring. The coupling shall accommodate 2"-diameter EMT conduit. The frangible couplings shall meet the requirements of either Military Specification MS-17814-1, or of FAA Drawing C-6046. The straight-thread Multi-Electric Cat. No. 961-A frangible coupling is among couplings meeting MS-17814-1. The tapered-thread Multi-Electric Cat. No. 961-AT frangible coupling is among couplings conforming to FAA Drawing C-6046. If the Contractor intends to furnish substitute frangible couplings, the Contractor shall submit to the Contracting Officer, catalog cuts demonstrating that the substitute couplings meet the above specifications. The Contractor shall furnish at least 110 each of the frangible couplings. The Contractor shall turn all spare frangible couplings over to the Resident Engineer, who will deliver them to FAA maintenance personnel.
2. MALS PAR-38 Lamps.
   A. Specifications. The following specifications override Paragraph 13A.5. The Contractor shall furnish ninety PAR-38 halogen incandescent spot lamps. The lamps shall be rated by the manufacturer to have 120-watt power, approximately 1900 lumens and 25000 center beam candlepower (CBCP), and 3000 hours average lamp life at 120 volts. Sylvania lamps of lamp designation 120PAR/CAP/SPL/SP and NAED (Vendor I.D. No.) code 14856 meet these specifications. If the Contractor intends to furnish lamps other than Sylvania No. 14856, the Contractor shall submit to the Contracting Officer the substitute lamp's candlepower distribution curve and manufacturer's technical data sheets demonstrating that the substitute meets the power, brightness, and lamp life and lumen maintenance criteria of the above specifications. The contractor shall also furnish a sample lamp, and shall demonstrate that it will fit the MALSR manufacturer's lamp aiming device.
   B. Application. The Contractor shall install 45 of these lamps on the 5-light bar structures. The remaining 45 lamps shall be delivered to the Resident Engineer for use as spares. The installed lamps shall be aimed vertically to the aiming angles specified on the drawings.
3. CONTROL CABLE SHIELD GROUNDING. Control cable shield shall be grounded at each end of each cable run. This requirement overrides Specification FAA-GL-918C, Paragraph 16F.8a(1) and Specification FAA-GL-840B, Paragraph 16F.8a(1).
4. SUPPLEMENTAL LIGHTNING ARRESTER. If lightning arresters are not furnished with the MALSR equipment, or supplemental lightning arresters are required, the lightning arresters shall meet the following specifications:

A. Voltage rating: 120/240 VAC, 3 wire, 1 phase, 50/60Hz.
Each L (black wire) to N (neutral wire) 120 VAC.
L (black wire) to L (black wire) 240VAC.
B. Conduction starts @ 240V peak.
C. Operation: Bipolar, same performance on either polarity of surge.
D. Power consumption: None
E. Power follow current: None
F. Load or source KVA: Unlimited.
G. Temperature range: -50^{O}C to $+80^{O}$C.
H. Response: Less than one nanosecond.
I. Extreme lightning and surge duty: 55 KVA each line to ground.
J. Discharge voltage vs. surge current, each line to ground:

@	1.5 KA, 8x20us	420V peak
	5.0	520
	10.0	550
	20.0	700
	30.0	825
	50.0	970

K. Life, each line to ground:

@	1.5KA, 8x20us	60,000 operations
	5.0	3,000
	10.0	300
	20.0	50
	30.0	15
	50.0	5

Lightning and electrical surge arrester Model LPC 10262-6 from Lightning Protection Corporation (Goleta, CA) meets the above specifications.

5. Fluorescent Light Fixtures and Ballasts. The following specifications supersede Paragraph 16A.17f of Specification FAA-GL-918C.

f. Interior Light Fixture and Lamps. Each interior light fixture shall be a surface-mounted, 120-volt, fluorescent light fixture having a high-gloss white painted steel chassis and a light-controlling acrylic lens enclosure. The lens (diffuser, refractor) enclosure shall be of a wraparound style that illuminates the ceiling as well as the room. The enclosure shall be hinged on one side, or shall pull down, for cleaning and maintenance. The fixture shall be nominally four feet long, and shall accommodate two 48"-long T-8 fluorescent lamp tubes. The ballast shall have a radio frequency suppressor. The ballast shall operate normally at temperatures above 20° F. The lamp tubes shall be 32-watt 48"-long T-8 fluorescent lamp tubes, each with an initial rating of 2,850 lumens. The following 32-watt lamp tubes are among lamps which meet these specifications:

General Electric Trimline, Philips TL70, and Sylvania Octron. The following light fixtures are among fixtures that meet the above specifications.

(1) Day-Brite Cat. No. HWN232-120-1/2-EB, with:

(a) Valmont Electric Cat. No. E232-P1 120 G01 two-lamp electronic ballast, rated at zero degrees F., and

(b) Valmont Electric Cat. No. 89G635RFI filter.

(2) Holophane Model No. HW-S-M-4-D-S-H71-042-LP-1-1 with RF suppressor

(3) Lithonia Model No. WA-2-32-120-GEB-RIF1

(4) Metalux Cat. No. W-232A-120-LEOC8-RIF1

If the contractor desires to furnish and install other light fixtures than those listed above, or a tandem connected and wired version of the 4'-long fixture listed above, the contractor shall submit catalog cuts of the fixture, and receive the Contracting Officer's approval before procuring.

6. NO ASBESTOS. No material containing asbestos shall be installed under this contract.

7. GROUNDING ELECTRODE. The following specifications supersede Paragraph 16A.4c of Specification FAA-GL-918C.

   c. Grounding Electrode. Grounding electrodes (rods) shall be copper clad steel, 3/4-inch by 10 feet, except where otherwise specified. The top of the grounding electrode shall be a minimum of 12 inches below finished grade. Conductors shall be attached to electrodes with exothermic welds only, except where fire or explosion hazards exist, as near existing fuel tanks. Where such hazards exist, hydraulically crimped connections will be permitted as specified below.

8. ELECTRODE GROUND TESTING. The following specifications supersede Paragraph 16A.4h of Specification FAA-GL-918C.

   h. Testing. Electrode grounds shall be tested for resistance at each location. Resistance to ground for each grounding location shall be 10 ohms or less. If this value is not achieved with the grounding electrodes as shown on the drawings, additional grounding electrodes spaced at least 6 feet apart, or electrode extensions of the same construction and diameter, shall be installed until the resistance value does not exceed the maximum of 10 ohms. A tabulated report of the final resistance value at each location shall be provided to the Resident Engineer.

9. AIR TERMINAL BRACE. The following specifications supersede Paragraph 16A.18c of Specification FAA-GL-918C.

   c. Air Terminal Brace Assembly. The air terminal brace assembly for a 36” air terminal shall be a 24"-long galvanized tripod assembly, with legs adjustable to accommodate any roof slope. Cat. No. 82 meets these specifications.

10. GROUND ROD CLAMPS. Paragraph 16A.18k, Ground Rod Clamps, of Specification FAA-GL-918C, is deleted.

11. CONTROL CABLE. The following specifications supplement Paragraph 16E of Specification FAA-GL-918C.

Specification. Control cable shall be either:

- REA Specification PE-39 cable meeting all the requirements of Section 16E, or
- REA Specification PE-89 cable (having foamed polyethylene or propylene conductor insulation with a solid skin of the same material), meeting all requirements of Specification FAA-GL-918C Section 16E except the REA Specification PE-39 requirements.

12. FACILITY AC SURGE ARRESTER.

The following paragraph supersedes Paragraph 16A.16d of Specification FAA-GL-918C.

d. Arrester Meeting Specifications. For 120/240V, single phase, 60Hz applications, the Lightning Protection Corporation (Goleta, California) Model No. LPC 20206-7 AC surge arrester is one of the products that meet the above specifications. This arrester must be equipped with two Class J fuses, 60 amp, time-delay, 200KAIC (interrupting capacity), UL listed. If the contractor intends to furnish a substitute, or if a different power configuration must be accommodated, the contractor shall submit to the Contracting Officer, full manufacturer's literature on the substitute arrester, and shall not procure the substitute before receiving the Contracting Officer's approval. See Paragraph 1A.4 above.

The following paragraph is added to Paragraph 16A.16e of Specification FAA-GL-918C.

(4) Fuses. The surge arrester must be equipped with two Class J fuses, 60 amp, time-delay, 200KAIC (interrupting capacity), UL listed.

13. PAPI PLATE. The following paragraph supplements and supersedes Paragraph 13D.2 of Specification FAA-GL-918C.

13D.2 SCREW ANCHOR FOUNDATION DESIGN AND USAGE. On drawings, screw anchor foundations are also called screw-in foundations and screw-in-anchor foundations.

a. Screw Anchor Foundations. The two most frequently used screw anchor foundations, are shown on Figures 1 and 2 at the end of this section. The Figure 1 foundation is commonly used for ILS, RVR, MALSR, and PAPI facilities. The Figure 2 foundation is commonly used for REIL facilities. A. B. Chance foundations, Cat. Nos. T112-0262 and T112-0676, are among the products that meet the requirements of Figures 1 and 2, respectively. These items are also known by Cat. Nos. CT112-0262, CT112-0676. The Chance Figure 1 foundation is known as an "Instant" foundation (formerly known as a streetlight foundation).

b. PAPI Plate. The PAPI plate of Figure 3 in Specification FAA-GL-918C does not describe the current A. B. Chance PAPI plate, Chance Cat. No. T112-0337 or CT112-0337. Figure 3 has a 26.65" dimension, and describes the old PAPI plate, which accommodated the AVW PAPI. The current (2002) PAPI plate, Chance Cat. No. T112-0337 or CT112-0337, has a 28" dimension in place of the 26.65" dimension. The current A.B. Chance PAPI plate is shown on A. B. Chance Drawing No. SA112-0337, Rev C dated 07-08-93, and accommodates the NBP PAPI, Type FA-10620, NSN 8200-00-600-82751.

14. STEEL SIDING. The following paragraph supplements and supersedes Paragraph 13E.8 of Specification FAA-GL-918C.

13E.8 STEEL SIDING. Furnish and install steel siding panels and accessories in accordance with manufacturer's instructions and the following material specifications.

a. Steel Sheet and Coating. The siding is made from roll formed 0.0172 inch (nominal) thick hot-dipped galvanized steel complying with ASTM A653 and having minimum yield and ultimate strength of 33,000 and 55,000 psi respectively. The coating is polyvinyl chloride, 4 mils dry film thickness. Unless otherwise specified on the drawings, the outside finish color is white.

b. Siding Meeting Specifications. Coated steel siding by Rollex Corporation, Elk Grove Village, Illinois is among products meeting these specifications. Substitutes require submittals per Paragraph 1A.4 above.

15. BURIED GUARD WIRE.

The following paragraph supplements and supersedes Paragraph 16A.4e of Specification FAA-GL-918C.

e. Buried Guard Wire. Buried cables (including armored cables) not completely enclosed in ferrous conduit, shall be protected by a bare copper guard wire. Unless specified otherwise, or shown otherwise on the drawings, the guard wire shall be #1/0 AWG. Embed the guard wire in the soil at least 10 inches directly above and parallel to the cables being protected. Where the width of the run of cables or ducts does not exceed 3 feet, install one guard wire centered over the cable or duct run. Where the cable or duct run is more than 3 feet wide, install two guard wires. Space the two guard wires at least 12 inches apart, and 12 to 18 inches inside the outermost wires or outermost edges of the duct. Weld the guard wire exothermically to a grounding electrode at each end, and to grounding electrodes at approximately 90-foot intervals. The spacing between the grounding electrodes shall vary by 10 to 20 percent, to prevent resonance.

The following paragraph supplements and supersedes Paragraph 16F.3f of Specification FAA-GL-918C.

f. Buried Guard Wire. Unless specified otherwise, all direct-earth burial power, control, and coaxial cables shall include the installation of #1/0 bare copper ground wire per Paragraph 16A.4e above.

16. PAR-38 LAMPHOLDER SOCKET RETENTION SCREWS. If DME Corp. MALSR equipment is furnished by either the FAA or the contractor, the contractor shall inspect the PAR-38 lampholders. It is probable that the heads of the socket retention screws furnished with the lampholders are too wide to fit into the socket recesses. If they are, the contractor shall furnish stainless steel 6-23 x 1 1/4" socket head cap screws to install the sockets in the lampholders. Two cap screws are required per PAR-38 lampholder.