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Letting June 11, 2021

Notice to Bidders, Specifications and Proposal



**Illinois Department
of Transportation**

Springfield, Illinois 62764

**Contract No. WA075
Waukegan National Airport
Waukegan, Illinois
Lake County
Illinois Project No. UGN-4824
SBG Project No. 3-17-SBGP-TBD**



1. **TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 12:00 p.m. on June 11, 2021, at which time the bids will be publicly opened from the iCX SecureVault.
2. **DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. WA075
Waukegan National Airport
Waukegan, Illinois
Lake County
Illinois Project No. UGN-4824
SBG Project No. 3-17-SBGP-TBD**

Rehabilitate Airfield Lighting, Phase 1 & 2 (Runway 5/23, 14/32, Taxiway A, B and C) and Airfield Lighting Control and Monitoring System (ALCMS)

For engineering information, please contact Kyle Peabody, P.E. of Crawford, Murphy & Tilly, Inc. at 630.907.7024.

3. INSTRUCTIONS TO BIDDERS.

- (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 10-23 of the Standard Specifications for Construction of Airports (Adopted September 25, 2020 & Revised March 12, 2021), 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 within 90 calendar days to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids 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.** N/A

6. **DISADVANTAGED BUSINESS POLICY.** The DBE goal for this contract is 2.0%.

7. **SPECIFICATIONS AND DRAWINGS.** The work shall be done in accordance with the Standard Specifications for Construction of Airports (Adopted September 25, 2020 & Revised March 12, 2021), the Special Provisions dated April 16, 2021, and the Construction Plans dated April 16, 2021 as approved by the Illinois Department of Transportation, Division of Aeronautics.

8. 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 based on the availability of funding.

Award of this contract will be limited to the following bid alternate combinations:

- I. Base Bid
- II. Base Bid + Additive Alternate 1
- III. Base Bid + Additive Alternate 1 + Additive Alternate 2
- IV. Base Bid + Additive Alternate 1 + Additive Alternate 2 + Additive Alternate 3

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.

9. 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 185 calendar days.

10. 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.

11. MATERIAL COST ADJUSTMENTS. Federal Aviation Administration rules prohibit the use of escalation clauses for materials. Therefore, the Illinois Department of Transportation, Division of Aeronautics cannot offer any material cost adjustment provisions for projects that utilize Federal Funds.

12. 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.

By Order of the
Illinois Department of Transportation

Omer Osman,
Acting Secretary

ILLINOIS DEPARTMENT OF TRANSPORTATION
DIVISION OF AERONAUTICS

REQUIRED CONTRACT PROVISIONS FOR STATE FUNDED AIRPORT CONSTRUCTION PROJECTS

The following provisions are State of Illinois requirements and are in addition to the REQUIRED CONTRACT PROVISIONS FOR AIRPORT IMPROVEMENT PROGRAM AND FOR OBLIGATED SPONSORS

DISADVANTAGED BUSINESS POLICY

NOTICE: This proposal contains the special provision entitled "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."

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.

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.

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).

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.

SPECIAL PROVISION FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)

Effective: September 1, 2000

Revised: March 2, 2019

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. 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 Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. 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. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract 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 contracts funded in whole or in part with federal or state funds. 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, which may include, but is not limited to:

- (a) Withholding progress payments;
- (b) Assessing sanctions;
- (c) Liquidated damages; and/or
- (d) Disqualifying the Contractor from future bidding as non-responsible.

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 applies to 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 the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

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 the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The 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, in the absence of unlawful discrimination and in an arena of fair and open competition, DBE companies can be expected to perform 2.0% 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 only 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 for in this Special Provision:

- (a) The bidder documents enough DBE participation has been obtained to meet the goal or,
- (b) The bidder documents 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.

DBE LOCATOR REFERENCES. Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. 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 website at:
<http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index>.

BIDDING PROCEDURES. Compliance with this Special Provision is a material bidding requirement and failure of the bidder to comply will render the bid not responsive.

The bidder shall submit a DBE Utilization Plan (form SBE 2026), and a DBE Participation Statement (form SBE 2025) for each DBE company proposed for the performance of work to achieve the contract goal, with the bid. If the Utilization Plan indicates the contract goal will not be met, documentation of good faith efforts shall also be submitted. The documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor is selected over a DBE for work on the contract. The required forms and documentation must be submitted as a single .pdf file using the "Integrated Contractor Exchange (iCX)" application within the Department's "EBids System".

The Department will not accept a Utilization Plan if it does not meet the bidding procedures set forth herein and the bid will be declared not responsive. In the event the bid is declared not responsive, 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.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan is approved. All information submitted by the bidder must be complete, accurate and adequately document enough DBE participation has been obtained or document the good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. This means the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts the bidder has made. Mere *pro forma* efforts, in other words efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine 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 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 bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quotes submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.

(5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder'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 bidder'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 the bidder 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 it is otherwise eligible for award. If the Department determines the bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification will also include a statement of reasons for the adverse determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period to cure the deficiency.

(c) The bidder may request administrative reconsideration of an adverse determination by emailing the Department at "DOT.DBUEP@illinois.gov" within the five calendar days after the receipt of the notification of the determination. The determination shall become final if a request is not made on or before the fifth calendar day. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be reviewed by the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person to consider all issues of documentation and 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 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 not responsive.

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 percent 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 does not count toward the DBE goals.

(b) DBE as a joint venture Contractor: 100 percent 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 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.

(d) DBE as a trucker: 100 percent 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 contract. Credit will be given for the following:

(1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.

(2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission it receives as a result of the lease arrangement.

(e) DBE as a material supplier:

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

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

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

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 Utilization 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. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the DBE Participation Commitment Statement.

(a) **NO AMENDMENT.** No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be emailed to the Department at DOT.DBEP@illinois.gov.

(b) **CHANGES TO WORK.** Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, a new Request for Approval of Subcontractor will not be required. However, the Contractor must document efforts to assure the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.

(c) **SUBCONTRACT.** The Contractor must provide copies of DBE subcontracts to the Department upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.

(d) **ALTERNATIVE WORK METHODS.** In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:

(1) The replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or

(2) The DBE is aware its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or

(3) The DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.

(e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

- (1) The listed DBE subcontractor fails or refuses to execute a written contract;
- (2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the Contractor's reasonable, nondiscriminatory bond requirements;
- (4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant to 2 CFR Parts 180, 215 and 1200 or applicable state law.
- (6) The Contractor has determined the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides written notice to the Contractor of its withdrawal;
- (8) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;
- (10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE contractor was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated or fails to complete its work on the Contract for any reason, the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal. The good faith efforts shall be documented by the Contractor. If the Department requests documentation under this provision, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary at the request of the Contractor. The Department will provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

(f) FINAL PAYMENT. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than 30 calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes 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 Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.

(g) **ENFORCEMENT.** 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.

(h) **RECONSIDERATION.** Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

SPECIAL PROVISION FOR WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012

Revised: April 2, 2015

The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

The report shall be submitted to the Resident Engineer on Division of Aeronautics Form "AER 723" within ten business days following the reporting period. The reporting period shall be Monday through Sunday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

SPECIAL PROVISION FOR SUBCONTRACTOR MOBILIZATION PAYMENTS

Effective: November 2, 2017

Revised: April 1, 2019

To account for the preparatory work and the operations necessary for the movement of subcontractor personnel, equipment, supplies, and incidentals to the project site and for all other work or operations that must be performed or costs incurred when beginning work approved for subcontracting according to Section 80-01 of the Standard Specifications, the Contractor shall make a mobilization payment to each subcontractor.

This mobilization payment shall be made at least seven days prior to the subcontractor starting work. The amount paid shall be at the following percentage of the amount of the subcontract reported on form AER 260A submitted for the approval of the subcontractor's work.

Value of Subcontract Reported on Form AER 260A	Mobilization Percentage
Less than \$10,000	25%
\$10,000 to less than \$20,000	20%
\$20,000 to less than \$40,000	18%
\$40,000 to less than \$60,000	16%
\$60,000 to less than \$80,000	14%
\$80,000 to less than \$100,000	12%
\$100,000 to less than \$250,000	10%
\$250,000 to less than \$500,000	9%
\$500,000 to \$750,000	8%
Over \$750,000	7%

The mobilization payment to the subcontractor is an advance payment of the reported amount of the subcontract and is not a payment in addition to the amount of the subcontract; therefore, the amount of the advance payment will be deducted from future progress payments.

This provision shall be incorporated directly or by reference into each subcontract approved by the Department.

SPECIAL PROVISION FOR PAYMENTS TO SUBCONTRACTORS

Effective: November 2, 2017

Federal regulations found at 49 CFR §26.29 mandate the Department to establish a contract clause to require Contractors to pay subcontractors for satisfactory performance of their subcontracts and to set the time for such payments.

State law also addresses the timing of payments to be made to subcontractors and material suppliers. Section 7 of the Prompt Payment Act, 30 ILCS 540/7, requires that when a Contractor receives any payment from the Department, the Contractor shall make corresponding, proportional payments to each subcontractor and material supplier performing work or supplying material within 15 calendar days after receipt of the Department payment. Section 7 of the Act further provides that interest in the amount of two percent per month, in addition to the payment due, shall be paid to any subcontractor or material supplier by the Contractor if the payment required by the Act is withheld or delayed without reasonable cause. The Act also provides that the time for payment required and the calculation of any interest due applies to transactions between subcontractors and lower-tier subcontractors and material suppliers throughout the contracting chain.

This Special Provision establishes the required federal contract clause, and adopts the 15 calendar day requirement of the State Prompt Payment Act for purposes of compliance with the federal regulation regarding payments to subcontractors. This contract is subject to the following payment obligations.

When progress payments are made to the Contractor according to Article 90-07 of the Standard Specifications, the Contractor shall make a corresponding payment to each subcontractor and material supplier in proportion to the work satisfactorily completed by each subcontractor and for the material supplied to perform any work of the contract. The proportionate amount of partial payment due to each subcontractor and material supplier throughout the contracting chain shall be determined by the quantities measured or otherwise determined as eligible for payment by the Department and included in the progress payment to the Contractor. Subcontractors and material suppliers shall be paid by the Contractor within 15 calendar days after the receipt of payment from the Department. The Contractor shall not hold retainage from the subcontractors. These obligations shall also apply to any payments made by subcontractors and material suppliers to their subcontractors and material suppliers; and to all payments made to lower tier subcontractors and material suppliers throughout the contracting chain. Any payment or portion of a payment subject to this provision may only be withheld from the subcontractor or material supplier to whom it is due for reasonable cause. If reasonable cause is asserted, written notice shall be provided to the applicable subcontractor and/or material supplier and the Engineer within five days of the Contractor receiving payment. The written notice shall identify the contract number, the subcontract or material purchase agreement, a detailed reason for refusal, the value of payment being withheld, and the specific remedial actions required of the subcontractor and/or material supplier so that payment can be made.

This Special Provision does not create any rights in favor of any subcontractor or material supplier against the State or authorize any cause of action against the State on account of any payment, nonpayment, delayed payment, or interest claimed by application of the State Prompt Payment Act. The Department will not approve any delay or postponement of the 15 day requirement except for reasonable cause shown after notice and hearing pursuant to Section 7(b) of the State Prompt Payment Act. State law creates other and additional remedies available to any subcontractor or material supplier, regardless of tier, who has not been paid for work properly performed or material furnished. These remedies are a lien against public funds set forth in Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c), and a recovery on the Contractor's payment bond according to the Public Construction Bond Act, 30 ILCS 550.

SPECIAL PROVISION FOR SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE)
Effective: April 2, 2018

Subcontractor and Disadvantaged Business Enterprise Payment Reporting

The Contractor shall report all payments made to the following parties:

- (a) first tier subcontractors;
- (b) lower tier subcontractors affecting disadvantaged business enterprise (DBE) goal credit;
- (c) material suppliers or trucking firms that are part of the Contractor's submitted DBE utilization plan.

The report shall be made through the Department's on-line subcontractor payment reporting system within 21 days of making the payment.

SPECIAL PROVISION FOR ADDITIONAL STATE REQUIREMENTS FOR FEDERAL-AID CONSTRUCTION CONTRACTS
Effective: February 1, 1969
Revised: January 1, 2017

EQUAL EMPLOYMENT OPPORTUNITY

In the event of the Contractor's noncompliance with the provisions of this Equal Employment Opportunity Clause, the Illinois Human Rights Act, or the Illinois Department of Human Rights Rules and Regulations, the Contractor may be declared ineligible for future contracts or subcontracts with the State of Illinois or any of its political sub-divisions or municipal corporations, and the contract may be cancelled or voided 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, sexual orientation, marital status, order of protection status, national origin or ancestry, citizenship status, age, physical or mental disability

unrelated to ability, military status, or an unfavorable discharge from military service; 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 Illinois Department of Human Rights Rules and Regulations) 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, sexual orientation, marital status, order of protection status, national origin or ancestry, citizenship status, age, physical or mental disability unrelated to ability, military status, or an unfavorable discharge from military service.

(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 Contractor's obligations under the Illinois Human Rights Act and the Illinois Department of Human Rights Rules and Regulations. If any 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 Department of Human Rights and IDOT 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 Department of Human Rights Rules and Regulations, furnish all relevant information as may from time to time be requested by the Illinois Department of Human Rights or IDOT, and in all respects comply with the Illinois Human Rights Act and the Illinois Department of Human Rights Rules and Regulations.

(6) That it will permit access to all relevant books, records, accounts, and work sites by personnel of IDOT and the Illinois Department of Human Rights for purposes of investigation to ascertain compliance with the Illinois Human Rights Act and the Illinois Department of Human Rights Rules and Regulations.

(7) That it will include verbatim or by reference the provisions of this clause in every subcontract it awards under which any portion of the contract obligations are undertaken or assumed, so that the provisions will be binding upon the 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 subcontractors; and further it will promptly notify IDOT and the Illinois Department of Human Rights in the event any subcontractor fails or refuses to comply with these provisions. In addition, the Contractor will not utilize any subcontractor declared by the Illinois Human Rights Commission to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.

SPECIAL PROVISION FOR 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 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 each 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).

SPECIAL PROVISION FOR COMPLETION TIME VIA CALENDAR DAYS

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 185 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 in Section 80-09 Failure to Complete on Time of the Standard Specifications, 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.

State of Illinois
Department of Transportation

SPECIAL PROVISION
FOR
SECTION 80 PROSECUTION AND PROGRESS

This Special Provision amends the provisions of the Standard Specifications for Construction of Airports (Adopted September 25, 2020 & Revised March 12, 2021) and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

80-09 Failure to complete on time.

ADD:

Schedule of Deductions for Each Day of Overrun in Contract Time			
Original Contract Amount		Daily Charges	
From More Than	To and Including	Calendar Day	Work Day
\$ 0	\$ 100,000	\$ 475	\$ 675
100,000	500,000	750	1,050
500,000	1,000,000	1,025	1,425
1,000,000	3,000,000	1,275	1,725
3,000,000	6,000,000	1,425	2,000
6,000,000	12,000,000	2,300	3,450
12,000,000	And over	6,775	9,525

State of Illinois
Department of Transportation

SPECIAL PROVISION
FOR
SECTION 90 MEASUREMENT AND PAYMENT

This Special Provision amends the provisions of the Standard Specifications for Construction of Airports (Adopted September 25, 2020 & Revised March 12, 2021) and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

90-07 Partial payments.

DELETE: The entire section.

ADD: Partial payments will be made to the Contractor at least once each month as the work progresses. The payments will be based upon estimates, prepared by the Resident Engineer, of the value of the work performed and materials complete and in place in accordance with the contract, plans, and specifications. Such partial payments may also include the delivered actual cost of those materials stockpiled and stored in accordance with the Section 90-08 PAYMENT FOR MATERIALS ON HAND. From the amount of partial payment so determined on Federal-Aid projects, there shall be deducted an amount up to ten percent of the cost of the completed work which shall be retained until all conditions necessary for financial closeout of the project are satisfied. The amount of the estimate approved as due for payment will be vouchered by the Department and presented to the State Comptroller for payment. No amount less than \$1,000.00 will be approved for payment other than the final payment. A final voucher for under \$5.00 shall not be paid except through electronic funds transfer. (15 ILCS 405/9(b-1))

It is understood and agreed that the Contractor shall not be entitled to demand or receive partial payment based on quantities of work in excess of those provided in the proposal or covered by approved change orders, except when such excess quantities have been determined by the Engineer to be a part of the final quantity for the item of work in question.

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

Progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c).

If a Contractor or subcontractor has defaulted on a loan issued under the Department's Disadvantaged Business Revolving Loan Program (20 ILCS 2705/2705-610) progress payments may be reduced pursuant to the terms of that loan agreement. In such cases, the amount of the estimate related to the work performed by the Contractor or subcontractor, in default of the loan agreement, will be offset, in whole or in part, and vouchered by the Department to the Working Capital Revolving Fund or designated escrow account. Payment for the work shall be considered as issued and received by the Contractor or subcontractor on the date of the offset voucher. Further, the amount of the offset voucher shall be a credit against the Department's obligation to pay the Contractor, the Contractor's obligation to pay the subcontractor, and the Contractor's or subcontractor's total loan indebtedness to the Department. The offset shall continue until such time as the entire loan indebtedness is satisfied. The Department will notify the Contractor and Fund Control Agent in a timely manner of such offset. The Contractor or subcontractor shall not be entitled to additional payment in consideration of the offset.

In accordance with 49 USC § 47111, the Department will not make payments totaling more than 90 percent of the contract until all conditions necessary for financial closeout of the project are satisfied.

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department determines that compliance has been achieved.

90-09 Trust agreement option.

DELETE: The entire section.

APPENDIX A – FEDERAL AVIATION ADMINISTRATION (FAA) REQUIRED CONTRACT PROVISIONS

A1 ACCESS TO RECORDS AND REPORTS

A1.1 CONTRACT CLAUSE

ACCESS TO RECORDS AND REPORTS

The Contractor must maintain an acceptable cost accounting system. The Contractor agrees to provide the sponsor, the Federal Aviation Administration, and the Comptroller General of the United States or any of their duly authorized representatives, access to any books, documents, papers, and records of the contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts and transcriptions. The Contractor agrees to maintain all books, records and reports required under this contract for a period of not less than three years after final payment is made and all pending matters are closed.

A2 AFFIRMATIVE ACTION REQUIREMENTS

A2.1 SOLICITATION CLAUSE

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

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 contract or subcontract.

AREA COVERED (STATEWIDE)

Goals for Women apply nationwide.

GOAL

Goal (percent)

Female Utilization..... 6.9

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.

<u>Economic Area (percent)</u>	Goal
056 Paducah, KY: Non-SMSA Counties - IL - Hardin, Massac, Pope KY - Ballard, Caldwell, Calloway, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, McCracken, Marshall	5.2
080 Evansville, IN: Non-SMSA Counties - IL - Edwards, Gallatin, Hamilton, Lawrence, Saline, Wabash, White IN - Dubois, Knox, Perry, Pike, Spencer KY - Hancock, Hopkins, McLean, Mublenberg, Ohio, Union, Webster	3.5
081 Terre Haute, IN: Non-SMSA Counties - IL - Clark, Crawford IN - Parke	2.5
083 Chicago, IL: SMSA Counties: 1600 Chicago, IL - IL - Cook, DuPage, Kane, Lake, McHenry, Will	19.6

3740 Kankakee, IL - IL - Kankakee	9.1
Non-SMSA Counties IL - Bureau, DeKalb, Grundy, Iroquois, Kendall, LaSalle, Livingston, Putnam IN - Jasper, Laporte, Newton, Pulaski, Starke	18.4
084 Champaign - Urbana, IL: SMSA Counties: 1400 Champaign - Urbana - Rantoul, IL - IL - Champaign	7.8
Non-SMSA Counties - IL - Coles, Cumberland, Douglas, Edgar, Ford, Piatt, Vermilion	4.8
085 Springfield - Decatur, IL: SMSA Counties: 2040 Decatur, IL - IL - Macon	7.6
7880 Springfield, IL - IL - Menard, Sangamon	4.5
Non-SMSA Counties IL - Cass, Christian, Dewitt, Logan, Morgan, Moultrie, Scott, Shelby	4.0
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 - IL - McLean	2.5
6120 Peoria, IL - IL - Peoria, Tazewell, Woodford	4.4
Non-SMSA Counties - IL - Fulton, Knox, McDonough, Marshall, Mason, Schuyler, Stark, Warren	3.3
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,	11.4

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

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

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

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

4. As used in this notice and in the contract resulting from this solicitation, the "covered area" is Waukegan, Illinois; Lake County.

A3 BREACH OF CONTRACT TERMS

A3.1 CONTRACT CLAUSE

This provision is required for all contracts that exceed the simplified acquisition threshold as stated in 2 CFR Part 200, Appendix II (A). This threshold is occasionally adjusted for inflation and is now equal to \$150,000.

BREACH OF CONTRACT TERMS

Any violation or breach of terms of this contract on the part of the contractor or its subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this agreement.

Owner will provide the Contractor written notice that describes the nature of the breach and corrective actions the Contractor must undertake in order to avoid termination of the contract. Owner reserves the right to withhold payments to Contractor until such time the Contractor corrects the breach or the Owner elects to terminate the contract. The Owner's notice will identify a specific date by which the Contractor must correct the breach. Owner may proceed with termination of the contract if the Contractor fails to correct the breach by deadline indicated in the Owner's notice.

The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder are in addition to, and not a limitation of, any duties, obligations, rights and remedies otherwise imposed or available by law.

A4 BUY AMERICAN PREFERENCE

A4.1 CONTRACT CLAUSE

- (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 (AIP).
- (b) Any and all steel products used in the performance of this contract by the Contractor, subcontractors, producers, and suppliers are required to adhere to the Illinois Steel Products Procurement Act, which requires that all steel items be of 100 percent domestic origin and manufacture. Any products listed under the Federal Aviation Administration's (FAA) nationwide approved list of "Equipment Meeting Buy American Requirements" shall be deemed as meeting the requirements of the Illinois Steel Products Procurement Act.
- (c) The successful bidder will be required to assure that only domestic steel and domestically manufactured products will be used by the Contractor, subcontractors, producers, and suppliers in the performance of this contract. The North American Free Trade Agreement (NAFTA) specifically excluded federal grant programs such as the AIP. Therefore, NAFTA does not change the requirement to comply with the Buy American requirement in the Act. Exceptions to this are for products, other than steel, that:
 - (1) the FAA 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 or of a satisfactory quality;
 - (2) the FAA has determined, under the Aviation Safety and Capacity Expansion Act of 1990, that domestic preference would be inconsistent with the public interest;

- (3) the FAA has determined that inclusion of domestic material will increase the cost of the overall project contract by more than 25 percent; or
- (4) the FAA has determined, under the Aviation Safety and Capacity Expansion Act of 1990,
 - (i) the cost of components and subcomponents produced in the United States is more than 60 percent of the cost of all components of the facility or equipment, and
 - (ii) final assembly of the facility or equipment has occurred in the United States.

The FAA must grant waivers for any items that are included in these above exceptions. Bidders can review items already approved under the FAA nationwide approved list of "Equipment Meeting Buy American Requirements" on the FAA website, which do not require a specific FAA waiver.

All waivers are the responsibility of the Contractor, must be obtained prior to the Notice to Proceed, and must be submitted to the Illinois Division of Aeronautics for review and approval before being forwarded to the FAA. Any products used on the project that cannot meet the domestic requirement, and for which a waiver prior to the Notice to Proceed was not obtained, will be rejected for use and subject to removal and replacement with no additional compensation, and the contractor deemed non-responsive.

A5 CIVIL RIGHTS - GENERAL

A5.1 CONTRACT CLAUSE

GENERAL CIVIL RIGHTS PROVISIONS

The contractor agrees to comply with pertinent statutes, Executive Orders and such rules as are promulgated to ensure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance.

This provision binds the contractor and sub-tier contractors from the bid solicitation period through the completion of the contract. This provision is in addition to that required of Title VI of the Civil Rights Act of 1964.

A6 CIVIL RIGHTS – TITLE VI ASSURANCE

A6.1 CONTRACT CLAUSE

A6.1.1 Title VI Solicitation Notice

Title VI Solicitation Notice:

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

A6.1.2 Title VI Clauses for Compliance with Nondiscrimination Requirements

Compliance with Nondiscrimination Requirements

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

Compliance with Regulations: The contractor (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Acts And Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

Non-discrimination: The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.

Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Nondiscrimination Acts And Authorities on the grounds of race, color, or national origin.

Information and Reports: The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the sponsor or the Federal Aviation Administration to be pertinent to ascertain compliance with such Nondiscrimination Acts And Authorities and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the sponsor or the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

Sanctions for Noncompliance: In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:

- a. Withholding payments to the contractor under the contract until the contractor complies; and/or
- b. Cancelling, terminating, or suspending a contract, in whole or in part.

Incorporation of Provisions: The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the sponsor to enter into any litigation to protect the interests of the sponsor. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

A6.1.3 Title VI List of Pertinent Nondiscrimination Acts and Authorities

Title VI List of Pertinent Nondiscrimination Acts and Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); 49 CFR part 21 (Non-discrimination In Federally-Assisted Programs of The Department of Transportation—Effectuation of Title VI of The Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 *et seq.*).

A7 CLEAN AIR AND WATER POLLUTION CONTROL

A7.1 CONTRACT CLAUSE

This provision is required for all contracts and lower tier contracts that exceed \$150,000.

CLEAN AIR AND WATER POLLUTION CONTROL

Contractor agrees to comply with all applicable standards, orders, and regulations issued pursuant to the Clean Air Act (42 U.S.C. § 740-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. § 1251-1387). The Contractor agrees to report any violation to the Owner immediately upon discovery. The Owner assumes responsibility for notifying the Environmental Protection Agency (EPA) and the Federal Aviation Administration.

Contractor must include this requirement in all subcontracts that exceeds \$150,000.

A8 CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS

A8.1 CONTRACT CLAUSE

This provision applies to all contracts and lower tier contracts that exceed \$100,000, and employ laborers, mechanics, watchmen, and guards.

CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS

1. Overtime Requirements.

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic, including watchmen and guards, in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; Liability for Unpaid Wages; Liquidated Damages.

In the event of any violation of the clause set forth in paragraph (1) of this clause, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this clause, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this clause.

3. Withholding for Unpaid Wages and Liquidated Damages.

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

4. Subcontractors.

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

A9 COPELAND "ANTI-KICKBACK" ACT

A9.1 CONTRACT CLAUSE

COPELAND "ANTI-KICKBACK" ACT

Contractor must comply with the requirements of the Copeland "Anti-Kickback" Act (18 U.S.C. 874 and 40 U.S.C. 3145), as supplemented by Department of Labor regulation 29 CFR part 3. Contractor and subcontractors are prohibited from inducing, by any means, any person employed on the project to give up any part of the compensation to which the employee is entitled. The Contractor and each Subcontractor must submit to the Owner, a weekly statement on the wages paid to each employee performing on covered work during the prior week. Owner must report any violations of the Act to the Federal Aviation Administration.

A10 DAVIS-BACON REQUIREMENTS

A10.1 CONTRACT CLAUSE

DAVIS-BACON REQUIREMENTS

1. Minimum Wages

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalent thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under (1)(ii) of this

section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can easily be seen by the workers.

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

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

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

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

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

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

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

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

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2 Withholding.

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

3. Payrolls and basic records.

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

(ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the Federal Aviation Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the Federal Aviation

Administration if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit them to the applicant, sponsor, or owner, as the case may be, for transmission to the Federal Aviation Administration, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, sponsor, or owner).

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

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR § 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR § 5.5 (a)(3)(i) and that such information is correct and complete;

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

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

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

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

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

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

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate that is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

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

5. Compliance with Copeland Act Requirements.

The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

6. Subcontracts.

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

7. Contract Termination: Debarment.

A breach of the contract clauses in paragraph 1 through 10 of this section may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance With Davis-Bacon and Related Act Requirements.

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes Concerning Labor Standards.

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

10. Certification of Eligibility.

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

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

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

A11 DEBARMENT AND SUSPENSION

A11.1 CONTRACT CLAUSE

A11.1.1 Bidder or Offeror Certification

CERTIFICATION OF OFFERER/BIDDER REGARDING DEBARMENT

By submitting a bid/proposal under this solicitation, the bidder or offeror certifies that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this transaction.

A11.1.2 Lower Tier Contract Certification

CERTIFICATION OF LOWER TIER CONTRACTORS REGARDING DEBARMENT

The successful bidder, by administering each lower tier subcontract that exceeds \$25,000 as a "covered transaction", must verify each lower tier participant of a "covered transaction" under the project is not presently debarred or otherwise disqualified from participation in this federally assisted project. The successful bidder will accomplish this by:

1. Checking the System for Award Management at website: <http://www.sam.gov>
2. Collecting a certification statement similar to the Certificate Regarding Debarment and Suspension (Bidder or Offeror), above.
3. Inserting a clause or condition in the covered transaction with the lower tier contract

If the FAA later determines that a lower tier participant failed to disclose to a higher tier participant that it was excluded or disqualified at the time it entered the covered transaction, the FAA may pursue any available remedies, including suspension and debarment of the non-compliant participant.

A12 DISADVANTAGED BUSINESS ENTERPRISE

A12.1 REQUIRED PROVISIONS

A12.1.1 Solicitation Language (Solicitations that include a Project Goal)

The Owner's award of this contract is conditioned upon Bidder or Offeror satisfying the good faith effort requirements of 49 CFR §26.53.

As a condition of bid responsiveness, the Bidder or Offeror must submit the following information with their proposal on the forms provided herein:

- (1) The names and addresses of Disadvantaged Business Enterprise (DBE) firms that will participate in the contract;
- (2) A description of the work that each DBE firm will perform;
- (3) The dollar amount of the participation of each DBE firm listed under (1)
- (4) Written statement from Bidder or Offeror that attests their commitment to use the DBE firm(s) listed under (1) to meet the Owner's project goal;
- (5) If Bidder or Offeror cannot meet the advertised project DBE goal; evidence of good faith efforts undertaken by the Bidder or Offeror as described in appendix A to 49 CFR Part 26.

A12.1.2 Solicitation Language (Race/Gender Neutral Means)

The requirements of 49 CFR part 26 apply to this contract. It is the policy of the Waukegan Port District to practice nondiscrimination based on race, color, sex or national origin in the award or performance of this contract. The Owner encourages participation by all firms qualifying under this solicitation regardless of business size or ownership.

A12.1.3 Prime Contracts (Projects covered by DBE Program)

DISADVANTAGED BUSINESS ENTERPRISES

Contract Assurance (§ 26.13) - The Contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of Department of Transportation-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the Owner deems appropriate, which may include, but is not limited to:

- 1) Withholding monthly progress payments;
- 2) Assessing sanctions;
- 3) Liquidated damages; and/or
- 4) Disqualifying the Contractor from future bidding as non-responsible.

A13 DISTRACTED DRIVING

A13.1 CONTRACT CLAUSE

TEXTING WHEN DRIVING

In accordance with Executive Order 13513, "Federal Leadership on Reducing Text Messaging While Driving" (10/1/2009) and DOT Order 3902.10 "Text Messaging While Driving" (12/30/2009), the FAA encourages recipients of Federal grant funds to adopt and enforce safety policies that decrease crashes by distracted drivers, including policies to ban text messaging while driving when performing work related to a grant or sub-grant.

In support of this initiative, the Owner encourages the Contractor to promote policies and initiatives for its employees and other work personnel that decrease crashes by distracted drivers, including policies that ban text messaging while driving motor vehicles while performing work activities associated with the project. The Contractor must include the substance of this clause in all sub-tier contracts exceeding \$3,500 and involve driving a motor vehicle in performance of work activities associated with the project.

A14 ENERGY CONSERVATION REQUIREMENTS

A14.1 CONTRACT CLAUSE

ENERGY CONSERVATION REQUIREMENTS

Contractor and Subcontractor agree to comply with mandatory standards and policies relating to energy efficiency as contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6201 *et seq.*).

A15 EQUAL EMPLOYMENT OPPORTUNITY (E.E.O.)

A15.1 MANDATORY CONTRACT CLAUSE

A15.1.1 E.E.O. Contract Clause

EQUAL OPPORTUNITY CLAUSE

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

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

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

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

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

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

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

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

A 15.1.2 EEO Specification

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS

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 (OFCCP), U.S. 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:
 - (1) Black (all) persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race);
 - (3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (4) American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

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

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

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

Programs office or from Federal procurement contracting officers. The contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the contractor has a collective bargaining agreement to refer either minorities or women shall excuse the contractor's obligations under these specifications, Executive Order 11 246 or the regulations promulgated pursuant thereto.

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

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

- a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The contractor, where possible, will assign two or more women to each construction project. The contractor shall specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
- b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
- c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefore along with whatever additional actions the contractor may have taken.
- d. Provide immediate written notification to the Director when the union or unions with which the contractor has a collective bargaining agreement has not referred to the contractor a minority person or female sent by the contractor, or when the contractor has other information that the union referral process has impeded the contractor's efforts to meet its obligations.
- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources compiled under 7b above.
- f. Disseminate the contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with onsite supervisory personnel such as superintendents, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the contractor's EEO policy with other contractors and subcontractors with whom the contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students; and to minority and female recruitment and training organizations serving the contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.
- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel, for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- m. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the contractor's obligations under these specifications are being carried out.

- n. Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
- p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the contractor's EEO policies and affirmative action obligations.

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

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

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

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

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

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

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

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

A16 FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)

A16.1 CONTRACT CLAUSE

All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part time workers.

The contractor has full responsibility to monitor compliance to the referenced statute or regulation. The contractor must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division.

A17 LOBBYING AND INFLUENCING FEDERAL EMPLOYEES

A17.1 CONTRACT CLAUSE

This provision is required for all contracts that exceed \$100,000.

CERTIFICATION REGARDING LOBBYING

The bidder or offeror certifies by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the Bidder or Offeror, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients 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.

A18 PROHIBITION of SEGREGATED FACILITIES

A18.1 CONTRACT CLAUSE

PROHIBITION of SEGREGATED FACILITIES

- (a) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.
- (b) "Segregated facilities," as used in this clause, 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, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.
- (c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

A19 OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

A19.1 CONTRACT CLAUSE

All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. Contractor must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The Contractor retains full responsibility to monitor its compliance and their subcontractor's compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (29 CFR Part 1910). Contractor must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

A20 PROCUREMENT OF RECOVERED MATERIALS

A20.1 CONTRACT CLAUSE

Procurement of Recovered Materials

Contractor and subcontractor agree to comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, and the regulatory provisions of 40 CFR Part 247. In the performance of this contract and to the extent practicable, the Contractor and subcontractors are to use of products containing the highest percentage of recovered materials for items designated by the Environmental Protection Agency (EPA) under 40 CFR Part 247 whenever:

- a) The contract requires procurement of \$10,000 or more of a designated item during the fiscal year; or,

The contractor has procured \$10,000 or more of a designated item using Federal funding during the previous fiscal year.

The list of EPA-designated items is available at www.epa.gov/epawaste/conservation/tools/cpg/products/.

Section 6002(c) establishes exceptions to the preference for recovery of EPA-designated products if the contractor can demonstrate the item is:

- a) Not reasonably available within a timeframe providing for compliance with the contract performance schedule;
- b) Fails to meet reasonable contract performance requirements; or
- c) Is only available at an unreasonable price.

A21 RIGHT TO INVENTIONS

A21.1 CONTRACT CLAUSE

RIGHTS TO INVENTIONS

Contracts or agreements that include the performance of experimental, developmental, or research work must provide for the rights of the Federal Government and the Owner in any resulting invention as established by 37 CFR part 401, Rights to Inventions Made by Non-profit Organizations and Small Business Firms under Government Grants, Contracts, and Cooperative Agreements. This contract incorporates by reference the patent and inventions rights as specified within in the 37 CFR §401.14. Contractor must include this requirement in all sub-tier contracts involving experimental, developmental or research work.

A22 SEISMIC SAFETY

A22.1 CONTRACT CLAUSE

A22.1.1 Construction Contracts

Seismic Safety

The contractor agrees to ensure that all work performed under this contract, including work performed by subcontractors, conforms to a building code standard that provides a level of seismic safety substantially equivalent to standards established by the National Earthquake Hazards Reduction Program (NEHRP). Local building codes that model their code after the current version of the International Building Code (IBC) meet the NEHRP equivalency level for seismic safety.

A23 TAX DELINQUENCY AND FELONY CONVICTIONS

A23.1 CONTRACT CLAUSE

CERTIFICATION OF OFFERER/BIDDER REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS

Certifications

- 1) The applicant represents that it is not a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.
- 2) The applicant represents that it is not a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

Note

If an applicant cannot comply with either of the above representations, the applicant is ineligible to receive an award unless the sponsor has received notification from the agency suspension and debarment official (SDO) that the SDO has considered suspension or debarment and determined that further action is not required to protect the Government's interests. The applicant therefore must provide information to the owner about its tax liability or conviction to the Owner, who will then notify the FAA Airports District Office, which will then notify the agency's SDO to facilitate completion of the required considerations before award decisions are made.

The applicant agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification in all lower tier subcontracts.

Term Definitions

Felony conviction: Felony conviction means a conviction within the preceding twenty-four (24) months of a felony criminal violation under any Federal law and includes conviction of an offense defined in a section of the U.S. code that specifically classifies the offense as a felony and conviction of an offense that is classified as a felony under 18 U.S.C. § 3559.

Tax Delinquency: A tax delinquency is any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

A24 TERMINATION OF CONTRACT

A24.1 CONTRACT CLAUSE

A24.1.1 Termination for Convenience

Termination for Convenience (Construction & Equipment Contracts)

The Owner may terminate this contract in whole or in part at any time by providing written notice to the Contractor. Such action may be without cause and without prejudice to any other right or remedy of Owner. Upon receipt of a written notice of termination, except as explicitly directed by the Owner, the Contractor shall immediately proceed with the following obligations regardless of any delay in determining or adjusting amounts due under this clause:

1. Contractor must immediately discontinue work as specified in the written notice.
2. Terminate all subcontracts to the extent they relate to the work terminated under the notice.
3. Discontinue orders for materials and services except as directed by the written notice.
4. Deliver to the owner all fabricated and partially fabricated parts, completed and partially completed work, supplies, equipment and materials acquired prior to termination of the work and as directed in the written notice.
5. Complete performance of the work not terminated by the notice.
6. Take action as directed by the owner to protect and preserve property and work related to this contract that Owner will take possession.

Owner agrees to pay Contractor for:

- a) completed and acceptable work executed in accordance with the contract documents prior to the effective date of termination;

documented expenses sustained prior to the effective date of termination in performing work and furnishing labor, materials, or equipment as required by the contract documents in connection with uncompleted work;

reasonable and substantiated claims, costs and damages incurred in settlement of terminated contracts with Subcontractors and Suppliers; and reasonable and substantiated expenses to the contractor directly attributable to Owner's termination action

Owner will not pay Contractor for loss of anticipated profits or revenue or other economic loss arising out of or resulting from the Owner's termination action.

The rights and remedies this clause provides are in addition to any other rights and remedies provided by law or under this contract.

A24.1.2 Termination for Default

Termination for Default (Construction)

Section 80-09 of FAA Advisory Circular 150/5370-10 establishes conditions, rights and remedies associated with Owner termination of this contract due default of the Contractor.

A25 TRADE RESTRICTION CERTIFICATION

A25.1 CONTRACT CLAUSE

TRADE RESTRICTION CERTIFICATION

By submission of an offer, the Offeror certifies that with respect to this solicitation and any resultant contract, the Offeror -

- a. is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms as published by the Office of the United States Trade Representative (U.S.T.R.);
- b. has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country included on the list of countries that discriminate against U.S. firms as published by the U.S.T.R; and
- c. has not entered into any subcontract for any product to be used on the Federal on the project that is produced in a foreign country included on the list of countries that discriminate against U.S. firms published by the U.S.T.R.

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

The Offeror/Contractor must provide immediate written notice to the Owner if the Offeror/Contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The Contractor must require subcontractors provide immediate written notice to the Contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

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 an Offeror or subcontractor:

- (1) who is owned or controlled by one or more citizens or nationals of a foreign country included on the list of countries that discriminate against U.S. firms published by the U.S.T.R. or
- (2) whose subcontractors are owned or controlled by one or more citizens or nationals of a foreign country on such U.S.T.R. list or

(3) who incorporates in the public works project any product of a foreign country on such U.S.T.R. list;

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.

The Offeror agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in all lower tier subcontracts. The contractor may rely on the certification of a prospective subcontractor that it is not a firm from a foreign country included on the list of countries that discriminate against U.S. firms as published by U.S.T.R, unless the Offeror has knowledge that the certification is erroneous.

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

A26 VETERAN'S PREFERENCE

A26.1 CONTRACT CLAUSE

VETERAN'S PREFERENCE

In the employment of labor (excluding executive, administrative, and supervisory positions), the contractor and all sub-tier contractors must give preference to covered veterans as defined within Title 49 United States Code Section 47112. Covered veterans include Vietnam-era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns (as defined by 15 U.S.C. 632) owned and controlled by disabled veterans. This preference only applies when there are covered veterans readily available and qualified to perform the work to which the employment relates.

SECTION III

Special Provisions

for

**REHABILITATE AIRFIELD LIGHTING – PHASE 1 & 2 (RUNWAY 5/23, 14/32,
TAXIWAY A, B, & C) & AIRPORT LIGHTING CONTROL AND MONITORING
SYSTEM (ALCMS)**

**ILLINOIS PROJECT: UGN-4824
S.B.G. PROJECT: 3-17-SBGP-XXX**

at

WAUKEGAN NATIONAL AIRPORT
WAUKEGAN, LAKE COUNTY, ILLINOIS



D Kyle Peabody

LICENSE EXPIRATION
DATE: 11/30/2021
DATE SIGNED: 4/16/2021

APRIL 16, 2021

Prepared By:



LICENSE EXPIRATION
DATE: 11/30/2021
DATE SIGNED: 4/16/2021

CRAWFORD, MURPHY & TILLY, INC.
Consulting Engineers
550 North Commons Drive, Suite 116
Aurora, IL 60504

20022602.00

GENERAL

These Special Provisions, together with applicable Standard Specifications, Contract Requirements for Airport Improvement Project, Rules and Regulations, 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, Division of Aeronautics, and the representatives of the City of Waukegan for the improvements to the Waukegan National Airport, Waukegan, Illinois.

GOVERNING SPECIFICATIONS AND RULES AND REGULATIONS

The “**Standard Specifications for Construction of Airports**”, State of Illinois, Department of Transportation, Division of Aeronautics, adopted September 25, 2020 shall govern the project except as otherwise noted in these Special Provisions. In the case of conflict with any part or parts of said specifications, the said Special Provisions shall take precedence and shall govern.

Specifications may be obtained at

<http://www.idot.illinois.gov/home/resources/Manuals/Manuals-and-Guides>

Where referenced within the Special Provisions, the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction adopted April 1, 2016 shall apply.

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PART 1 - GENERAL CONTRACT PROVISIONS

SECTION 40 – SCOPE OF WORK

40-05 MAINTENANCE OF TRAFFIC

ADD:

- I. To maintain airport operations and to facilitate the construction of the proposed work, the project has been divided into separate phases in accordance with Advisory Circular 150/5370-2G *Operational Safety on Airports During Construction*. References to Construction Safety and Phasing Plans (CSPP) in that document shall be interpreted to mean the phase limits, barricade locations, access points and notes shown on the construction activity plan sheets included in the as-bid contract documents. When “safety” is used or referred to in the contract documents and in the advisory circular(s) it shall be redefined by this contract as meaning “operational safety”. The Construction Operational Safety and Phasing Plan (CSPP) establishes the airport and project specific requirements, supplementing the requirements in the AC, that are to be included in the contractor’s bid for maintaining operational safety during construction.
- m. The Construction Safety and Phasing Plan (CSPP) contained herein has been approved by both the Airport and the FAA. The contractor shall be required to divide the overall work into separate phases in substantial conformance with the CSPP shown in the plans, except as allowed by the contract documents and approved by the Division on behalf of the FAA. Durations specified for individual phases shall become requirements of the contract and shall be subject to liquidated damages.

The contractor activity on the airfield shall be limited to the limits of construction as identified on the construction activity plan drawings. Beyond the limits of construction the contractor shall not have access to any part of the active airfield pavement with any equipment or personnel without the approval of Airport Management.

- o. Maintenance of Airport Systems are critical to the operation of the Airport and the safety and/or security of the traveling public. Prior to beginning work the contractor shall investigate existing systems which may be located within the work area and locate all existing utilities. The contractor may seek assistance from the Julie, Engineer, Resident Engineer, Airport and FAA with locating utilities but the final responsibility for all utility locates lies solely with the contractor. If the Contractor’s investigation reveals that a utility must be relocated to allow for the performance of the work in the plans, the contractor shall immediately notify the Resident Engineer and remain clear of the utility until resolution has been determined by the Division and the Airport. Any system, including but not limited to systems associated with security, air navigation, weather, airfield lighting damaged by the Contractor’s operations shall be immediately repaired to the satisfaction of the owner. No delay shall be taken in the repair of the damaged facility. The Contractor shall not be allowed to finish work for the day until the utility has been repaired.
- p. The contractor shall provide his own radio capable of transmitting and receiving on the Unicom frequencies of 121.65 MHz.
- q. The Contractor shall provide and maintain construction entrance signage on all public use roads intended to be used by his operations as required by the Illinois Department of Transportation, City of Waukegan and Lake County Division of Transportation. The Contractor shall be responsible for coordinating all hauling and access on State, City, Township or County roads with the agency responsible for the roadway.

- r. If it is found the fully loaded delivery trucks are excessively damaging the Airport or local roadway pavement, the Contractor shall limit the weight of the material being hauled onto the site. The Resident Engineer shall determine what is considered excessive damage. No payments will be made for additional hauling that may be required due to load restrictions.
- s. The Contractor shall be required to provide a 24-hour phone number for emergency barricades and barricade lighting maintenance.

40-09 SAFETY PLAN COMPLIANCE DOCUMENT (SPCD)

REVISE: The first sentence of the first paragraph to read:

10 days prior to the preconstruction conference, the Contractor shall submit a SPCD to the Airport describing how he will comply with the requirements of the AC plus the CSPP and supplying any details that could not be determined before contract award.

40-10 BARRICADES, WARNING SIGNS AND HAZARD MARKINGS.

The Contractor shall furnish, erect, and maintain all barricades, warning signs, and markings for hazards necessary to protect the public and the work. When used during periods of darkness, such barricades, warning signs and hazard markings shall be suitably illuminated. Unless otherwise specified, barricades, warning signs, and markings for hazards that are in the air operations area shall be a maximum of 18 inches high. Unless otherwise specified, barricades shall be spaced not more than 10 feet apart.

For vehicular and pedestrian traffic, the Contractor shall furnish, erect, and maintain barricades, warning signs, lights and other traffic control devices in reasonable conformity with the Manual of Uniform Traffic Control Devices for Streets and Highways (published by the United States Government Printing Office).

Any cost for signage or traffic control shall be borne by the Contractor.

Barricades, as approved by the FAA, shall be provided per the details in the plan sheets. The barricades shall be lighted with steady burn omni-directional red lights supplemented with a 20" x 20" orange flag.

Barricades shall be placed as shown in the plans or as directed by the Resident Engineer or Airport.

The Contractor shall be responsible for supplying, maintaining and any moving of all barricades. Lights shall be maintained in proper working order. No separate payment will be made for supplying, maintaining and moving barricades but shall be considered incidental to the contract.

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

The Contractor shall furnish, erect, and maintain markings and associated lighting of open trenches, excavations, temporary stock piles, and his/her parked construction equipment

that may be hazardous to the operation of emergency fire-rescue or maintenance vehicles on the airport in reasonable conformance to FAA Advisory Circular 150/5370-2 (latest revision), *Operational Safety on Airports During Construction*.

The Contractor shall identify each motorized vehicle or piece of construction equipment in reasonable conformance to FAA Advisory Circular 150/5370-2 (latest revision).

Mark and identify vehicles in accordance with AC 150/5210-5 (latest revision) *Painting, Marking and Lighting of Vehicles Used on an Airport*. When any vehicle is required to travel over any portion of the aircraft movement area (within the existing perimeter fence) and runway approach area, the vehicle shall be properly identified to operate in the area or provided with a flag on a staff attached to the vehicle so that the flag will be readily visible. The flag should be not less than 3-feet square consisting of a checkered pattern of international orange and white squares of not less than one foot on each side and displayed in full view above the vehicle. A flag or escort vehicle is not required for vehicles which have been painted, marked and lighted for routine use on aircraft movement areas. Any vehicle operating on the movement area during the hours of darkness should be equipped with an amber flashing dome-type light, in accordance with local and/or state codes.

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

Open-flame type lights shall not be permitted within the air operations areas of the airport.

SECTION 50 – CONTROL OF WORK

50-05 COOPERATION BETWEEN CONTRACTORS

REVISE: The first sentence of the second paragraph to read:

The contractor shall plan and conduct his/her work so as not to interfere or hinder the progress of work being performed by other contractors or Airport personnel.

50-06 CONSTRUCTION LAYOUT AND STAKES

DELETE: The first paragraph.

ADD: As the first paragraph:

The Contractor will be required to furnish and place construction layout stakes for this project. The establishment of survey control and/or reestablishment of survey control shall be by a State Licensed Land Surveyor.

DELETE: The second paragraph.

ADD: As the second paragraph:

The Resident Engineer will locate and reference three (3) control points and will establish benchmarks along the line of the improvement outside construction limits. The Contractor shall locate and reference the centerline of survey, which shall also consist of locating and referencing control points such as point of curvature, points of tangent, and sufficient points on tangent to provide a line of sight. Control points set by the Resident Engineer shall be identified in the field to the Contractor, and the field notes shall be kept in the office of the Resident Engineer.

ADD:

Benchmarks will be established along the project outside of construction lines.

It is not the responsibility of the Resident Engineer to check the correctness of the Contractor's stakes or forms, except as provided herein; however, any errors that are apparent shall be immediately called to the Contractor's attention, and he shall be required to make the necessary correction before the stakes are used for construction purposes.

The Contractor shall immediately notify the Resident Engineer of conflicts or discrepancies with the established control points.

50-10 LOAD RESTRICTIONS

ADD: Access to the construction work area is limited to the haul routes as shown on the construction activity plan drawings. The use of existing airfield pavements by contractor construction traffic including all haul trucks is prohibited unless previously approved by the Airport Manager. Any damage to existing Airport pavement due to construction traffic operating beyond the approved work limits, hauling outside of the approved haul/access routes and construction traffic operating in prohibited areas shall be repaired by the Contractor at his own expense to the satisfaction of the owner.

The contractor shall coordinate construction hauling, construction access and load restrictions with the County Division of Transportation and the City of Waukegan. The Contractor shall be responsible for damage to any airfield pavement or public road caused by his construction operations. **Any damage to existing airfield pavements or public roads shall be replaced by the Contractor at his own expense to the satisfaction of the Owner.**

50-11 MAINTENANCE DURING CONSTRUCTION

ADD: The contractor shall make provisions in the work to maintain positive drainage from the work areas and to minimize the ponding of water. In areas where the contractor is required to core out or remove pavements the contractor shall cut temporary ditches or swales to maintain positive drainage. At locations where temporary ditches are not feasible, the contractor shall excavate storm water storage areas adjacent to but at a lower elevation than the bottom of the work and utilize mechanical pumps to promptly remove storm water from the excavations. All existing pavement areas that are to remain open to aircraft traffic shall be kept clean to the satisfaction of Airport Manager and the Resident Engineer. At the request of the Resident Engineer or of the Airport, the Contractor shall provide a self-propelled, vacuum or regenerative (recirculating) air pavement sweeper, a pavement blower or tractor mounted "sweeper box". At a minimum, a pavement blower shall be kept on site at all times.

ADD: Material tracked onto public streets shall be removed continuously during the work.

No material capable of being blown onto airfield pavement will be allowed to be stored uncovered anywhere within the fence line, at any time during construction.

50-14 FINAL ACCEPTANCE

DELETE: The first sentence of the first paragraph.

ADD: As the first sentence of the first paragraph.

Upon due notice to the Resident Engineer from the Contractor of presumptive completion of the entire project, the charging of Contract Time shall be suspended, and the Engineer will make an inspection.

ADD: After the first sentence of the second paragraph:

The charging of Contract Time shall resume on the day following the inspection and shall continue until the remaining work, including the applicable requirements of Section 40-08, Final Clean-up, is completed to the Engineer's satisfaction.

50-16 PLANS AND WORK DRAWINGS

REVISE: The second sentence of the eleventh (11th) paragraph to read as follows:

Such review will not relieve the Contractor of the responsibility for complying with the contract document requirements or for any error that may exist in the submittal. The Contractor is responsible for the dimensions and designs of adequate connections, detail and satisfactory construction of all work.

REVISE: The 15th paragraph to read:

Shop drawing submittals that do not include the information below will be rejected and returned to the Contractor. Information to be included on shop drawing submittals shall conform to the following:

PROJECT LOCATION: Waukegan National Airport, Waukegan, Illinois

PROJECT TITLE: Rehabilitate Airfield Lighting – Phase 1 & 2 (Runway 5/23, 14/32, Taxiway A, B, & C) & Airport Lighting Control and Monitoring System (ALCMS)

PROJECT NUMBERS: Illinois Project No.: UGN-4824
AIP Project No.: 3-17-SBGP-XXX

CONTRACT ITEM: (Pay Item Name & Number) i.e. AR401610
Bituminous Surface Course

SPECIFICAITON: Section in the specifications i.e. 401-2.3 Asphalt binder

SUBMITTED BY: (Contractor/Subcontractor Name)

DATE: (Date of Submittal)

ADD: To the end of the 18th paragraph:

- d. "Rejected": Submittal shall not be used at the project site.

SECTION 60 – CONTROL OF MATERIALS

60-01 SOURCE OF SUPPLY AND QUALITY REQUIREMENTS

REVISE: The third paragraph to read:

As a minimum, the Contractor shall provide, prior to delivery, statements (shipment tickets, source, certificate of analysis (COA), sample, etc.) as required by the current Illinois Department of Transportation, Bureau of Airport Engineering Manual for Documentation of Airport Materials or as requested by the Engineer of Airport Construction and Materials.

REVISE: The eleventh paragraph to read:

The Contractor shall furnish airport lighting equipment that meets the requirements of the specifications; and is listed in the current Federal Aviation Administration Advisory Circular (AC) 150/5345-53, Airport Lighting Equipment Certification Program and Addendum, that is in effect on the date of advertisement; and meets "Buy America" requirements.

ADD:

All materials for this item shall meet the requirements of the Buy American Preference as stated in the Appendix 4. Contractor shall provide proof of 100% domestic materials prior to delivering materials to the site. Materials that are unable to meet this requirement shall be reported in the bid documents under Certifications Required by State and/or Federal Law, Buy American Certificate and the contractor shall provide material certifications including ASTM testing standards to the Resident Engineer before any material is placed.

60-03 CERTIFICATION OF COMPLIANCE/ANALYSIS (COC/COA)

ADD: After the sixth (8th) paragraph:

The Contractor shall certify all materials contained in the contract. Certification and documentation shall be submitted to the Resident Engineer and Project Engineer. It shall be the sole responsibility of the Contractor to ensure the delivery of adequate and accurate documentation prior to the delivery of materials. Materials incorporated into this project without approved certification and documentation will not be recommended for payment by the Resident Engineer. **It shall be the sole responsibility of the Contractor to provide certification that ALL materials to be used on the project meet the "Buy American" requirements.**

The certification shall be submitted as part of the shop drawing submittal.

ADD: At the end of the Section:

Shop drawing submittals that do not include the information below will be rejected and returned to the Contractor. All submittals shall contain the following information:

PROJECT LOCATION:	Waukegan National Airport, Waukegan, Illinois
PROJECT TITLE:	Rehabilitate Airfield Lighting – Phase 1 & 2 (Runway 5/23, 14/32, Taxiway A, B, & C) & Airport Lighting Control and Monitoring System (ALCMS)
PROJECT NUMBERS:	Illinois Project No.: UGN-4824 AIP Project No.: 3-17-SBGP-XXX

CONTRACT ITEM: (i.e., AR156510 – Silt Fence)
SPECIFICATION: (i.e., 102-2.5 Silt Fence)
SUBMITTED BY: (Contractor/Subcontractor Name)
DATE: (Date of Submittal)

If the Division of Aeronautics requires additional documentation, they shall request it through the Resident Engineer.

SECTION 70 – LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

70-08 PUBLIC CONVENIENCE AND SAFETY

ADD: at end of the Section:

The contractor shall provide, install and maintain any warning signs (trucks entering highway, etc.) as required by the County Division of Transportation and the City of Waukegan and/or the responsible agency that maintains the roadway. The cost to the warning signage as required by the agency responsible for the roadway for the duration of the contract shall be at no additional cost to the contract.

70-16 CONTRACTOR'S RESPONSIBILITY FOR UTILITY SERVICE AND FACILITIES OF OTHERS

REVISE: The second paragraph as follows:

“ . . . , the approximate locations and owners have been indicated on the plans.”

ADD: After the eight (8th) paragraph:

The following table includes contact numbers that may provide assistance for locating cable. The personnel listed in the table are in no way responsible for damage to existing utilities.

WAUKEGAN NATIONAL AIRPORT

Utility Service of Facility	Person to Contact	Contact Phone
FAA Control & Communications Cable	FAA Sector Office	1-630-587-7801
Electric Cables	J.U.L.I.E.	1-800-892-0123
Telephone Cables	J.U.L.I.E.	1-800-892-0123
Gas Lines	J.U.L.I.E.	1-800-892-0123
Water Lines	J.U.L.I.E.	1-800-892-0123

REPLACE: paragraph eleven (11) with;

If, in the Contractor's opinion, additional assistance is needed to locate the utility service or facility, the contractor shall enlist the assistance of a qualified technician or professional utility location firm to accurately locate underground utilities or facilities prior to excavation. Prior to commencing this detailed location work in the general vicinity of an existing utility service or facility, the Contractor shall again notify each such owner of his/her plan of operation and request the presence of a representative of the owner to observe the work. Such notification shall be given by the most expeditious means to reach the utility owner's PERSON TO CONTACT no later than two normal business days prior to the Contractor's commencement of operations in such general vicinity. The Contractor shall furnish a written summary of the notification to the Engineer.

Only after the investigation has been made should the contractor begin excavation operations. Upon beginning these operations, the contractor shall use extreme caution in the methods utilized. The contractor shall utilize exploratory trenching or small tool excavation practices

when beginning operations in critical areas to verify that the utilities are clear of the area of interest or to verify the location and depth of these facilities.

Any utility damaged by the Contractor shall be repaired by the Contractor to the satisfaction of the Owner and shall be at the cost of the Contractor. In the event that an existing utility is damaged during construction, all other work on the project shall be suspended until the utility is repaired. No additional time will be awarded to the Contractor for delays in the project due to damaged utilities. It is a high priority to the airport that all existing Airport utilities, unless otherwise noted in the plans, remain in good working condition throughout the duration of the project.

Special care shall be taken on all operations and particularly near pavement edges to avoid damage to edge lights and all underground electrical cable on the airport. The approximate location of existing underground cable is shown on drawings. Any airfield lights or cable that are broken and require replacement because of the Contractor's operations will be replaced by the Contractor at his/her own expense.

Any airfield cable repairs or replacement to any part of the electrical system made necessary by the Contractor's operations will be made by him/her in the manner specified in Sections 108 and 125 at no cost to the Airport. Cost of replacement to be borne by the Contractor shall include any expense incurred in locating as well as repairing or replacing damaged parts of the system by the owning agency.

70-25 CONTRACTOR'S RESPONSIBILITY FOR SAFETY DURING CONSTRUCTION

ADD:

- e. Review the requirements in AC 150/5370-2 (current edition) and comply with items listed as contractor's responsibility.
- f. Implement a CSPP and SPCD as required in AC 150/5370-2 (current edition) and ensure that construction personnel are familiar with operational safety procedures and regulations on the Airport.
- g. Provide a 24 hour point of contact that will coordinate an immediate response to correct any construction-related activity that may adversely affect the operational safety of the Airport.
- h. Provide a safety officer/construction inspector(s) trained in airport safety to maintain the CSPP and SPCD and to monitor all construction activities.
- i. Restrict movement of construction vehicles to construction areas as flagging and barricading, erecting temporary fencing, or providing escorts, as appropriate.
- j. Ensure that no construction employees, employees of subcontractors or suppliers, or other persons enter any part of the aircraft operations area from construction site unless authorized.

SECTION 80 – PROSECUTION AND PROGRESS

80-04 **LIMITATION OF OPERATIONS**

ADD: After the fourth (4th) paragraph:

A minimum distance of 93' shall be maintained between construction operations and the centerline of all active taxiways and taxilanes and 125' from centerline of runway 14/32 (when active) and 250' for runway 5/23 (when active). It is intended to plan, conduct, and complete the work in these critical traffic areas in such a manner that the length and amount of interruption to aircraft traffic at the Airport is minimized.

The Contractor shall comply with Federal Aviation Regulations and with all rules and regulations of the Airport, including, but not limited to, control and access to the airfield by Contractor's, employees and agents. In the event the Authority is assessed a fine by the Federal Aviation Administration for breach of security resulting from actions of Contractor's employees and agents, the Contractor shall fully reimburse the Authority for the amount of such fine in the form of additional rents.

Work within the Safety Area of Runways and Taxiways will require closure of the Runway or Taxiway as shown in the Construction Activity Plan. Runway closure markers shall be placed prior to initiating work. The Contractor shall place barricades at all locations shown on the plans. Any cable or unit duct protruding from the ground shall be secured flat using sand bags or other methods approved by the Resident Engineer.

80-08 **DETERMINATION AND EXTENSION OF CONTRACT TIME**

ADD: After the fourth paragraph:

The Engineer will make charges against Contract Time after the presumptive completion of the entire project as provided for in Section 50-16, Final Inspection.

ADD: After the last paragraph of this section:

For this project, the following number of calendar days available for work per month has been assumed to be:

<u>Month</u>	<u>Workable Calendar Days</u>
January	0
February	0
March	0
April	0
May	15
June	17
July	17
August	17
September	16
October	16
November	14
December	0

For an extension of contract time due to inclement weather to be considered, the actual total number of calendar days available for work on controlling items must be less than the total number of workable calendar days assumed for the duration of the contract.

Requests for extension of contract time on calendar day projects caused by inclement weather, shall, as a minimum, be supported with National Weather Bureau data and project diaries. Requests for extension of contract time due to inclement weather will not be considered until after final acceptance.

As part of the request for contract time extension review, consideration may be given to how timely the Contractor prosecuted the work up to the point of the delays and the efforts by the Contractor to get back on schedule including the addition of labor or equipment and the extension of work hours and workdays.

No allowance will be made for anticipated profits.

ADD:

80-14 CONTRACTOR'S ACCESS TO AIRFIELD

The location of an area for parking by the Contractor's employees shall be as shown on the plans or as agreed to by the Airport.

Use of personal vehicles beyond the airport perimeter fence line will not be allowed.

When not in use, the Contractor's vehicles and equipment shall park in the location shown on the plans or in an area outside the Runway Safety Areas (RSAs), Runway Object Free Zones (ROFZs), and Object Free Area (OFAs). The Contractor's vehicles and equipment shall not be parked on a closed taxiway or runway. Parking equipment shall not obstruct any runway visual aids, signs or navigational aids or penetrate Part 77 surfaces.

ADD:

80-15 SECURITY DURING CONSTRUCTION

As a minimum, the Contractor shall be responsible for security during construction as follows:

- (1) Visibly delineate his construction zone by placing a line of barricades or flagging around the entire work zone.
- (2) Keep construction personnel inside the work area delineated by barricades.
- (3) Ensure that construction personnel are familiar with security procedures and regulations on the Airport.
- (4) Restrict movement of construction vehicles to construction areas as flagging and barricading, erecting temporary fencing, or providing escorts, as appropriate or as shown in plans.
- (5) The Contractor shall be required to maintain security on the Airport as specified or as directed by the Airport.
- (6) The Contractor shall provide a complete list of personnel that will be employed while on site and update the list as needed. The contractor shall limit access to the AOA. The Contractor shall be responsible for monitoring the access gate during work hours. If the Contractor chooses to leave the gate open, then he shall monitor the gate to prevent unauthorized entries.
- (7) The contractor shall provide his own padlock to secure the gate used for access.

PART 2 – GENERAL CONSTRUCTION ITEMS

**ITEM 102 (156) – TEMPORARY AIR AND WATER POLLUTION, SOIL EROSION
AND SILTATION CONTROL**

See the Standard Specifications for Construction of Airports September 25, 2020 for the complete specification.

METHOD OF MEASUREMENT

DELETE Sections 102-4.1 thru 102-4.4, 102-4.6, 102-4.7, 102-4.9 and 102-4.10.

102-4.3 ADD: Silt fence required for wetland protections will be measured for payment as noted in the construction plans or as directed by the Resident Engineer.

102-4.8 ADD: Inlet protections will be measured for payment when adjacent to directional boring pits as noted on the plans or as directed by the Resident Engineer.

ADD:

102-4.12 Temporary seeding and temporary mulching, if required, will not be measured for payment. This work is considered incidental to the contract.

BASIS OF PAYMENT

102-5.1 ADD:

Payment will be made under:

Item AR156510 – Silt Fence – per linear foot.

Item AR156520 – Inlet Protection – per each.

ITEM 105 (150) – MOBILIZATION

See the Standard Specifications for Construction of Airports September 25, 2020 for the complete specification.

DESCRIPTION

105-1.1 REVISE the third paragraph to read:

This item also includes all efforts related to restoration of the project site, staging areas and haul roads as directed in the bidding documents at the conclusion of the job. This activity includes, but is not limited to, incidental grading, seeding and clean-up, as required to restore the project site to original condition.

BASIS OF PAYMENT

ADD:

Payment will be made under:

Item AR150520 – Mobilization – per lump sum.

ITEM 150 – RESIDENT ENGINEER FIELD OFFICE

See the Standard Specifications for Construction of Airports September 25, 2020 for the complete specification.

DESCRIPTION

150-1.1 ADD: The Airport will provide a location for the Field Office within proximity to the work areas. The Contractor shall be responsible for furnishing and maintaining the space as stated herein.

CONSTRUCTION METHODS

150-2.1 DELETE (b) in paragraph 4.

ADD: the following in paragraph 4 under (h):

The copier shall be capable of scanning documents into pdf format for direct download into the resident engineer's computer. Ink replenishment and paper shall be supplied by the contractor. The scanning capabilities shall allow for creation of pdf documents for field books and plan sheets. A multiple sheet document feeder shall also be included for scanning multiple sheet documents such as field reports and catalog cuts.

BASIS OF PAYMENT

150-4.1 ADD:

Payment will be made under:

Item AR150510 – Engineer's Field Office – per lump sum.

PART 2 – GENERAL CONSTRUCTION ITEMS

ITEM 401910 – REMOVE AND REPLACE HMA PAVEMENT

DESCRIPTION

401910-1.1

This item shall consist of bituminous pavement removal and replacement for construction of concrete encased duct bank as described in the plans. Pavement removal and replacement quantities are estimated. The pavement shall be compacted in accordance with these specifications and shall conform to the lines, grades, thicknesses and typical sections as shown on the plans or as directed by the Resident Engineer.

Each course shall be constructed to the depth, section or elevation required to match the existing pavement structure and shall be rolled, finished and approved prior to the placement of the next course.

MATERIALS

401910-2.1 BITUMINOUS SURFACE COURSE

Bituminous surface course shall be per Item 401 or at the Contractor's option, an IDOT Division of Highways surface mix may be submitted for approval by the Engineer. The surface mix shall be in accordance with Section 406 Hot-Mix Asphalt Binder and Surface Course of the Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction". The mix shall be a production mix from the current construction season meeting Mixture Composition:

HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50, MIX TYPE IL-9.5 mm

401910-2.1 BITUMINOUS BASE COURSE

Bituminous base course shall be per Item 403 or at the Contractor's option, an IDOT Division of Highways surface mix may be submitted for approval by the Engineer. The surface mix shall be in accordance with Section 406 Hot-Mix Asphalt Binder and Surface Course of the Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction". The mix shall be a production mix from the current construction season meeting Mixture Composition:

HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50

If an IDOT Division of Highways surface mix is used, the compacted lift thickness shall meet the minimum requirements specified in Article 406.06(d) of the IDOT highway "Standard Specifications for Road and Bridge Construction" but shall not exceed a maximum lift of 4-inches.

401910-2.4 BITUMINOUS PRIME COAT

The bituminous tack coat shall conform to the specifications of Item 602.

401910-2.5 BITUMINOUS TACK COAT

The bituminous tack coat shall conform to the specifications of Item 603.

CONSTRUCTION METHODS

401910-3.1

The type of material to be removed along with approximate typical pavement section is shown on the plans. Pavement structure information was taken from airport records, data supplied by airport personnel and pavement cores. The Contractor shall verify the type and thickness of material to be removed. **No extra compensation will be allowed for any variations in the pavement sections actually encountered.**

401910-3.2

The proposed pavement replacement section shall be as specified herein. Tack coat shall be applied between each lift of asphalt and on all vertical faces of the patch area and prime coat shall be applied to the aggregate base course.

401910-3.3

The existing pavement areas to be removed shall be done in such a manner as to prevent damage to the adjacent pavements. All edges adjacent to existing pavements shall be saw-cut full depth prior to removal, as directed by the Resident Engineer.

Any damage to the pavement beyond the limits as shown on the plans or as directed by the Resident Engineer shall be removed and replaced by the Contractor at his expense. These areas shall be saw cut to a uniform width.

401910-3.4

Pavement replacement will be as detailed on the plans and constructed in accordance to the applicable Items 401, 403, 602 and 603. The various materials required for pavement replacement shall be in accordance with the applicable portions of the Standard Specifications and these Special Provisions. Any damage to pavement beyond the limits as shown on the plans **shall be removed and replaced by the Contractor at his expense. These areas shall be saw cut to a uniform width.**

401910-3.5

Pavement Removal and Replacement shall be the removal of the existing pavements as shown on the plans or as directed by the Resident Engineer and the replacement pavement shall match the existing pavement thickness. The replacement pavement shall consist of bituminous surface course and bituminous base course conforming to the specifications of Items 401 and 403. The maximum lift thickness shall be 3". For full-depth patching, the existing aggregate base course shall be re-graded and compacted prior to the placement of the bituminous course. Cost of regrading and compacting to the existing base shall be incidental to the pavement removal and replacement.

401910-3.6

The existing pavement that is removed shall be disposed of off Airport property. No additional compensation will be made for hauling and disposal of any of the removed material.

401910-3.7 ACCEPTANCE TESTING OF HMA MIXES FOR DENSITY.

After the completion of compaction, the pavement will be tested for acceptance by the Resident Engineer and accepted on the basis of percent air voids in the final compacted mat. The HMA course shall be compacted to a minimum density of 93 percent (7 percent air voids) and a maximum of 99 percent (1 percent air voids) of the Maximum Theoretical Specific Gravity (ASTM D 2041). If, during construction, the density test falls below 93 percent, additional approved rollers shall be required.

Failure to achieve density within these limits shall be cause for rejection of the material, as determined by the Division of Aeronautics.

One random nuclear density test shall be taken for each 250 tons of mix placed. Each nuclear density test shall be the average of five (5) nuclear tests taken as a cross-section of the pavement. The Resident Engineer shall have a nuclear gauge and qualified operator on the project when constructing this item for acceptance testing. The contractor shall have their own nuclear gauge and qualified operator onsite for quality control.

METHOD OF MEASUREMENT

401910-4.1

The area of pavement removal and replacement shall be measured by the number of square yards, satisfactorily removed, replaced and disposed of as shown on the plans or as directed by the Resident Engineer.

401910-4.2

If additional pavement or subgrade material is removed due to negligence on the part of the Contractor, the additional quantity of pavement removal and replacement of subgrade material will not be measured for payment.

401910-4.3

The bituminous surface course, base course, bituminous prime coat and bituminous tack coat will not be measured separately for payment, but will be considered incidental to REMOVE & REPLACE BIT. PAVEMENT, per square yard.

BASIS OF PAYMENT

401910-5.1

Payment for REMOVE & REPLACE BITUMINOUS PAVEMENT shall be made at the contract unit price per square yard. This price shall include full compensation for sawing, removal, disposal, replacement of asphalt materials, compaction, tack coat, including furnishing all materials, labor, tools, testing, equipment and incidentals necessary to complete this item of work.

Any grading and recompacting of existing granular base course to proper grade shall not be paid for separately but shall be considered incidental to Remove & Replace Bituminous Pavement.

Payment will be made under:

Item AR401910 – Remove & Replace Bit. Pavement – per square yard.

PART 9 - MISCELLANEOUS

ITEM 602 – BITUMINOUS PRIME COAT

See the Standard Specifications for Construction of Airports September 25, 2020 for the complete specification.

CONSTRUCTION METHODS

602-3.3 SPRAYING APPLICATION

ADD: Areas worn from hauling operations shall be re-primed at no additional cost to the Contract.

METHOD OF MEASUREMENT

602-4.1 DELETE: The entire section.

ADD: Bituminous prime coat shall not be measured separately for payment.

METHOD OF MEASUREMENT

602-5.1 DELETE: The entire section.

ADD: Bituminous prime coat shall not be paid for separately. All costs shall be incidental to the pay item AR401910.

ITEM 603 – BITUMINOUS TACK COAT

See the Standard Specifications for Construction of Airports September 25, 2020 for the complete specification.

CONSTRUCTION METHODS

603-3.3 SPRAYING APPLICATION

ADD: Areas worn from hauling operations shall be re-primed at no additional cost to the Contract.

METHOD OF MEASUREMENT

603-4.1 DELETE: The entire section.

ADD: Bituminous tack coat shall not be measured separately for payment.

METHOD OF MEASUREMENT

603-5.1 DELETE: The entire section.

ADD: Bituminous tack coat shall not be paid for separately. All costs shall be incidental to the pay item AR401910.

ITEM 610 – CONCRETE FOR MISCELLANEOUS STRUCTURES

See the Standard Specifications for Construction of Airports September 25, 2020 for the complete specification.

DESCRIPTION

610-1.1 ADD: This item shall include concrete used for the purpose of installing new lights, signs, splice cans, duct banks, electric handholes, and other miscellaneous items that require the use of structural portland cement concrete.

METHOD OF MEASUREMENT

610-5.1 REVISE to read:

Concrete for miscellaneous structures shall be considered incidental to the contract unit price for the items requiring concrete and no separate measurement or payment will be made. The prices shall be full compensation for furnishing all materials and or preparation, delivering and installation of these materials, and for all labor, equipment, tools and incidentals necessary to complete the item.

PART 12 - TURFING

ITEM 901 – SEEDING

See the Standard Specifications for Construction of Airports September 25, 2020 for the complete specification.

DESCRIPTION

901-1.1

ADD:

Topsoiling shall be per Item 905 Topsoiling. Mulching shall be per Item 908 Mulching.

Restoration, seeding and mulching beyond the limits of seeding and mulching shown in the plans (such as lighting, cabling, access roads, haul roads, staging area, storage area) shall be considered incidental to the contract

CONSTRUCTION METHODS

901-3.2 DRY APPLICATION METHOD

REVISE: Paragraph a. to read:

Liming will not be required unless necessary by the Contractor.

DELETE: Paragraph c. Seeding

ADD:

Grass seed shall be sown at the rate shown in 901-2.1 with a machine that is capable of cutting a slit in the soil free from leaves and debris, placing the seed in the slit and compacting the seed into the soil of the slit in one continuous operation.

The site will be to grade and shaped to the elevations as shown on the plans. The topsoil will be free of clods, stones, roots, sticks, rivulets, gullies, crusting, caking and have a soil particle size of no larger than 1". Seedbed preparation methods shall be approved by the Engineer. Cultivation shall be accomplished at such a time that seeding may occur immediately and without delay. No seeds shall be sown until the Seedbed has been approved by the Engineer.

No seed shall be sown during high winds or when the ground is not in a proper condition for seeding, nor shall any seed be sown until the purity test has been completed for the seeds to be used and shows that the seed meets the noxious weed seed requirements. All equipment shall be approved by the Engineer prior to being used. Prior to starting work, seeders shall be calibrated and adjusted to sow seeds at the required seeding rate. Equipment shall be operated in a manner to ensure complete coverage of the entire area to be seeded. The Engineer shall be notified forty-eight (48) hours prior to beginning the seeding operations.

901-3.3 WET APPLICATION METHOD

DELETE: Entire Section.

METHOD OF MEASUREMENT

901-4.1

DELETE: The first paragraph.

ADD:

Seeding shall be measured per square yard completed and accepted by the Engineer.

BASIS OF PAYMENT

901-5.1

DELETE: Entire section.

ADD:

Seeding shall be paid for at the contract unit price per square yard which price and payment shall be full compensation for furnishing and placing all material and for all labor, equipment, tools, and incidentals necessary to complete the work prescribed in this item.

Restoration, seeding and mulching beyond the limits of seeding and mulching shown in the plans (such as lighting, cabling, access roads, haul roads, staging area, storage area) shall be considered incidental to the contract

Payment will be made under:

Item AR901515 – Seeding - per square yard.

ITEM 905 – TOPSOILING

See the Standard Specifications for Construction of Airports September 25, 2020 for the complete specification.

DESCRIPTION

905-1.1

ADD:

This item shall consist of a minimum of 4" of topsoil placed in the areas shown in the plans. In addition, the surface of all disturbed areas shall be covered with a layer of topsoil, as needed, to facilitate drainage and the growth of turf.

Topsoil shall be supplied by the Contractor from outside the boundaries of the Airport property. It shall be the Contractor's responsibility to locate and obtain the supply, subject to the approval of the Engineer.

METHOD OF MEASUREMENT

905-4.1, 905-4.2

DELETE: These sections.

ADD:

Topsoiling shall be measured in square yards completed and accepted by the Engineer.

Areas that required topsoiling due to the Contractor rutting and disturbing the areas outside of the limits shown on the plans, and within material storage/staging areas, access/haul roads, lighting and cabling areas will not be measured for payment, but shall be considered incidental to the contract.

BASIS OF PAYMENT

905-5.1

DELETE: This section.

ADD:

Payment will be made at the contract unit price per square yard for topsoiling. This price shall be full compensation for furnishing and placing/grading all materials, and for all labor, equipment, tools, and incidentals necessary to complete the work as specified.

Restoration and topsoiling beyond the limits of topsoiling shown in the plans (such as lighting, cabling, access roads, haul roads, staging area, storage area) shall be considered incidental to the contract

Payment will be made under:

Item AR905530 – Topsoiling - per square yard.

ITEM 908 – MULCHING

See the Standard Specifications for Construction of Airports September 25, 2020 for the complete specification.

908-1.1

ADD:

Restoration, seeding and mulching beyond the limits of seeding and mulching shown in the plans (such as lighting, cabling, access roads, haul roads, staging area, storage area) shall be considered incidental to the contract.

MATERIALS

908-2.1 MULCH MATERIAL

REVISE: First sentence to read:

Material used for mulching shall be (d) Hydraulic Mulch – Heavy Duty.

BASIS OF PAYMENT

908-5.1

REVISE: First paragraph to read:

Payment will be made at the contract unit price per square yard for mulching. This price shall be full compensation for furnishing all materials and for placing and anchoring the materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Restoration, seeding and mulching beyond the limits of seeding and mulching shown in the plans (such as lighting, cabling, access roads, haul roads, staging area, storage area) shall be considered incidental to the contract.

ADD:

Payment will be made under:

Item AR908516 – Mulching - per square yard.

PART 13 - LIGHTING INSTALLATION

ITEM 107– AIRPORT WIND CONES

See the Standard Specifications for Construction of Airports September 25, 2020 for the complete specification.

This item shall consist of installing a new wind cone (LED) as shown in the plans. Included in this item shall be the construction of a new foundation and the installation of the new internally lit L-806 wind cone, installation of splice can, power adapter and other incidentals as shown in the plans and details.

The Contractor shall furnish and install a new concrete foundation, ground rod, splice can, power adapter, conduit, cable and L-806 wind cone and any associated items required to make a complete operational system.

Removal of wind cone and foundation and all other electrical items shall include the complete removal of the fixture, cans, foundation and associated cables.

METHOD OF MEASUREMENT

107-4.1

REVISE this section to read:

- 107-4.1 The quantity of wind cones shall be measured for payment by the number of each unit installed as specified, completed, ready for operation, and accepted by the Resident Engineer.

BASIS OF PAYMENT

107-5.1

REVISE this section to read:

- 107-5.1 Payment for accepted quantities of work performed by the Contractor and measured by the Resident Engineer shall be made at the contract unit price as specified in paragraphs 107-4.1 of this section. Payment shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the work as specified.

Payment will be made under:

- Item AR107920 Replace Windcone – per each.

ITEM 108 – INSTALLATION OF UNDERGROUND CABLE FOR AIRPORTS

See the Standard Specifications for Construction of Airports September 25, 2020 for the complete specification.

DESCRIPTION

108-1.1

ADD:

This item of work shall consist of the underground installation of 5000V cables and fiber optic cable in unit duct or duct bank at the locations shown on the plans and in accordance with these specifications. When crossing existing utilities or as required by the Engineer, the Contractor shall hand dig the trenches for the proposed cables.

Contractor shall color code all airfield lighting cables in ducts, manholes and handholes as directed by the Engineer. All costs of color-coding shall be considered incidental to the contract unit price for the associated item.

EQUIPMENT AND MATERIALS

108-2.1 GENERAL

ADD:

Airfield Lighting cable under this item shall be:

- L-824, 1 - 1/C #8, 5,000 V, Type C, in 3/4" unit duct
- L-824, 2 - 1/C #8, 5,000 V, Type C, in 1" unit duct
- L-824, 1 - 1/C #8, 5,000 V, Type C
- 1 - 1/C #6, Counterpoise – Bare Copper Wire
- 1-12 Strand Single-Mode Fiber Optic Cable

108-2.4 CABLE CONNECTIONS

DELETE: The first and second sentence of paragraph **D. The Taped or Heat-Shrank Splice.**

ADD:

To further reduce the possibility of water (moisture) entrance into the connector between the cable and the field attached connector, heat shrinkable tubing with interior adhesive shall be applied over all cable connections.

The heat shrinkable tubing shall cover the entire L-823 connector. All connections shall be at manholes or light bases. No direct burial splicing will be allowed.

No splices will be allowed in the new cable unless at the end of a spool of cable. Splices due to termination points shall be done in splice cans, manholes, handholes and light cans. Any repairs necessary to cable damaged during installation shall be done at the Contractor's expense and shall consist of replacing the entire length of damaged cable between pull points.

In line connections for existing cables to be spliced or those which are cut during construction shall be repaired with the cast splice kit. The Contractor shall have a minimum of five (5) splice kits on the jobsite at all times for emergency repairs. Splice markers shall be installed over each splice in cables

not to be abandoned. Cast splice kits shall be as specified in paragraph (a). All field splices shall be covered with a flexible polyolefin heat-shrinkable sleeve.

ADD:

108-2.13 FIBER OPTIC CABLE

Fiber optic cable shall be 12 strand single-mode, 62.5/125 micron core/cladding, with attenuation at 1300 nm; 0.4 dB/km 220 MHz-km and at 1310 nm; 0.4 dB/km 500 MHz-km. Fiber optic cable shall be 12 Fiber Construction around center strength member and elastomeric PVC black outer jacket suitable for indoor or outdoor use.

Furnish and install fiber optic terminators (connectors) style SC or ST as required to match equipment. Connectors shall be designed for field assembly and be self-aligning and self-centering. Comply with manufacturers requirements. Include terminators on all fibers, including spares.

Splice closures shall protect the spliced fibers from moisture and to prevent physical damage. The splice closure shall provide strain relief for the cable and the fibers at the splice points.

CONSTRUCTION METHODS

108-3.1 GENERAL

ADD:

Any damages to existing utilities as a result of the Contractor's operations shall be repaired immediately at his expense.

108-3.2 INSTALLATION IN DUCT BANKS OR CONDUIT

ADD:

The Contractor shall install conduit in trench between the lights and signs as shown in the plans.

The Contractor shall coordinate the cable trenching, placement and backfilling operations so that the cable will not be damaged by (a) the use of mechanized road building equipment in the area where underground cable is or will be in existence, and (b) stone or other foreign materials falling into the trench or mixing into the trench backfill materials.

Contractor shall provide a minimum of one loop of cable in all manholes, handholes and light bases.

108-3.3.a TRENCHING

REVISE 18" to 30" in the last sentence of the second paragraph.

108-3.5 SPLICING

DELETE: The first and second paragraph of Section **D. Taped or Heat-Shrank Splices**.

ADD:

Contractor shall use cast splicing kits as described in Article 108-2.4 for any splices made inside the electric handholes and manholes. Contractor shall provide shop drawing for splicing method and cast splicing kit. Contractor shall also leave minimum 30" of slack on each side of the cable being spliced.

Splicing of FAA cables shall be tested and approved by FAA.

Contractor may elect to install FAA approved "Complete Kit" or "Super Kit" with sealant and rubber boot in lieu of heat shrink connectors at no additional cost to the contract.

108-3.11 LOCATING OF EXISTING CABLES

ADD:

Contact Personnel are listed in Section 70-17 herein.

ADD:

108-3.12 INSTALLATION OF FIBER OPTIC (FO) CABLE

Unless noted otherwise, all conduits, ducts, and manholes for FO cable systems shall be installed as shown on drawings.

- a. No splices shall be permitted unless the length of cable being installed exceeds the maximum standard cable length available from manufacturer.
- b. Splices shall be made using the method recommended by the cable manufacturer. Splices shall be housed in a splice enclosure and shall be encapsulated with an epoxy or ultraviolet light cured splice encapsulant. All FO splices shall be field tested at the time of splicing. Fusion splices shall have less than 0.2 dB loss, and mechanical splices shall not be used. There shall be no more than one (1) splice per kilometer in any of the FO cables excluding terminations. All field splices shall be located in cable boxes. Sufficient cable shall be provided in each splicing location to properly splice the cables, and to provide extra cable for additional splices. All cable ends shall be protected at all times with end caps except during actual splicing. During the splicing operations, means shall be provided to protect the unspliced portions of the cable from the intrusion of moisture and other foreign matter. All splices shall be done in hand holes provided and installed by the Contractor as required.
- c. For cable installed in ducts and conduit, a cable lubricant compatible with the cable sheathing material shall be used on all cables pulled. Pulling fixtures shall be attached to the cable strength members. If indirect attachments are used, the grip diameter and length shall be matched to the cable diameter and characteristics. If indirect attachment is used on cables having only central strength members, the pulling forces shall be reduced to ensure that the fibers are not damaged from forces being transmitted to the strength member. DURING PULLING, THE CABLE PULL LINE TENSION SHALL BE CONTINUOUSLY MONITORED, AND SHALL NOT EXCEED THE MAXIMUM TENSION AS GIVEN BY THE CABLE MANUFACTURER. The mechanical stress placed upon a cable during installation shall be such that the cable is not twisted or stretched. A cable feeder guide shall be used between the cable reel and the face of the duct or conduit to protect the cable and guide it into the duct or conduit as it is pulled off the reel. As the cable is pulled off the reel, it shall be carefully inspected for jacket defects. Precautions shall be taken during installation to prevent the cable from being kinked or crushed and that the minimum bend radius of the cable is not exceeded at any time. Cable shall be hand fed and guided through each manhole and additional lubricant shall be applied at all intermediate manholes. When practicable, the center pulling technique shall be used to lower pulling tension. That is, the cable shall be pulled from the center point of the cable run towards the end termination points. The method may require

the cable to be pulled in successive pulls. If the cable is pulled out of a junction box or manhole, the cable shall be protected from dirt and moisture by laying the cable on a ground covering. Dynamometers or load-cell instruments shall be used to ensure that the pulling line tension does not exceed the installation tension value specified by the cable manufacturer. The mechanical stress placed upon a cable during installation shall be such that the cable is not twisted or stretched.

108-3.13 CONNECTION AND TERMINATION OF FIBER OPTIC CABLE

- a. Connectors: All fibers at each end of the cable shall have jumpers or pigtails installed of not less than 3 feet in length. All fibers at both ends of the cable shall have connectors installed on the jumpers. The mated pair loss, without rotational optimization shall not exceed 1.5 dB. The pull strength between the connector and the attached fiber shall not be less than 50 pounds.
- b. Identification and Labeling: The Contractor shall supply identification tags or labels for each cable. The labeling format shall be identified and complete record shall be provided to the Owner with the final documentation. Each cable shall be identified with type of signal being carried and termination points.

108-3.14 TESTING OF FIBER OPTIC CABLE

- a. An optical time domain reflectometer (TDR) test shall be performed at 820 nanometers, of the FO cable on the reel prior to installation. The optical time domain reflectometer shall be calibrated to show anomalies of 0.2 dB as a minimum. Test data shall be recorded and furnished to the Engineer. Cable tested with losses exceeding manufacturer's acceptable levels for new cable shall be rejected.
- b. A second time domain reflectometer test at 820 nanometers shall be performed on the FO cable after it is installed. The optical time domain reflectometer shall be calibrated to show anomalies of 0.2 dB as a minimum. If the optical time domain reflectometer test results are unsatisfactory, the FO cable segment is unacceptable.
- c. The unsatisfactory segments of cable shall be replaced with a new segment of cable at no cost to the Contract. The new segment of cable shall then be tested to demonstrate acceptability.

METHOD OF MEASUREMENT

108-4.1

REVISE: This Section to read as follows:

No measurement for payment will be made for trenching, excavation, backfill, dewatering and restoration regardless of the type of material encountered shall be included in the unit price bid for the work.

108-4.2

REVISE: This Section to read as follows.

The length of 1/C #8 5KV UG CABLE and FIBER OPTIC CABLE installed in conduits or ducts to be paid for, shall be the number of lineal feet measured in place, complete and ready for operation, and accepted as satisfactory, and no extra quantity will be allotted for any vertical distances or the required cable slack, as stated under Item 108-3.3, in the Standard Specifications.

The length of 1/C #8 5KV UG CABLE IN UD, 2 - 1/C #8 5KV UG CABLE IN UD and 1/C #6 COUNTERPOISE installed in trench or in conduits/ducts to be paid for, shall be the number of lineal feet measured in place, complete and ready for operation, and accepted as satisfactory, and no extra quantity will be allotted for any vertical distances or the required cable slack, as stated under Item 108-3.3, in the Standard Specifications.

The cost of routing the cable through duct, splicing, marking, trenching, backfilling, and all connections shall be included in the unit price bid for the cable.

The cost of installation of ground rods for counterpoise system as detailed on the shall not be measured separately for payment but shall be considered incidental to the unit bid price for the counterpoise system.

The cost of removing cable as called out in the plans to make way for new cable shall not be measured separately for payment but shall be considered incidental to the unit bid price for the cable.

The cost of temporary cables and jumpers as required for construction phasing and to keep circuits operational during construction shall not be measured separately for payment but shall be considered incidental to the unit bid price for the cable.

The footage of line marking tape installed shall be considered incidental to the work and shall not be measured separately.

BASIS OF PAYMENT

108-5.1

REVISE: This Section to read as follows:

The cables measured under Item 108-4.2 shall be paid for under this item. These prices shall be full compensation for furnishing all materials and for all preparation and installation of these materials, trenching, backfilling and compacting trenches, all connections, line marking tape and installation, and for all labor, equipment, tools and incidentals necessary to complete these items. The cable measured under Item 108-4.3 shall be paid for under this item. These prices shall be full compensation for furnishing all materials and for all preparation and removal of existing cable.

Payment will be made under:

Item AR108108 – 1/C #8 5KV UG Cable – per linear foot.

Item AR108158 – 1/C #8 5KV UG Cable in UD – per linear foot.

Item AR108706 – 1/C #6 Counterpoise – per linear foot.

Item AR800003 – 2-1/C #8 5KV UG Cable in UD – per linear foot.

Item AR800178 – Fiber Optic Cable – per linear foot.

ITEM 109 – INSTALLATION OF AIRPORT TRANSFORMER VAULT AND VAULT EQUIPMENT

See the Standard Specifications for Construction of Airports September 25, 2020 for the complete specification.

DESCRIPTION

109-1.1 **ADD:**

This item shall consist of removal of existing airfield lighting vault equipment, removal of existing diesel generator, installation of a new Electrical Vault equipment, regulators, natural gas generator and ALCMS in accordance with these specifications and in accordance with the design and dimensions shown in the plans. The following major items of work will be included under this Item:

- A. Removal of existing airfield lighting vault electric service, power distribution equipment and associated cable/conduits
- B. Removal of existing diesel generator, diesel storage tanks and all associated piping.
- C. Power Distribution System:
 - 1. Installation of Airfield Lighting Vault Electrical Service, including, but not limited to:
 - a. New 400A, 480/277V, Three Phase, 4-Wire Utility Service to Electrical Vault, with Utility-approved C.T Cabinet and Utility-approved Meter Base mounted on building exterior wall.
 - b. Installation of concrete pad for ComEd transformer, grounding grid and secondary cable/conduits.
 - 2. Installation of Electrical Vault building equipment, including, but not limited to:
 - a. 400A, 480/277V, 3-Pole Circuit Breaker, Service Entrance Rated Disconnect.
 - b. 400A, 480/277V, 3-Pole Automatic Transfer Switch (ATS).
 - c. 400A, 480/277V, Three Phase, 4-Wire Distribution Panelboard (MDP).
 - d. 45 kva 480-120/208V, 3-Phase Transformer and 25kva 480-120/240V, 1-Phase Transformer.
 - e. 125A, 120/208V, 3-Phase, 4-Wire, 42Ckt. Power Panel (PP-1).
 - f. 100A, 120/240V, 1-Phase, 3-Wire, 30Ckt. Power Panel (PP-2).
 - 3. Installation of new 150kW/187.5kva natural gas generator with natural gas service and associated components.
 - 4. Installation of new lighting contactors and photocell for existing parking lot, sign and entrance road lighting.
 - 5. Installation of (8) Regulator Indicating Light Assemblies, including, but not limited to, L-861 and L-861T LED edge lights, isolation transformers, plug cutouts, L-823 connectors, L-824 5KV cable and mounting panels.

- D. Installation of new L-829,(2)20 KW and (6)15KW Ferroresonant Regulators for airfield lighting circuits.
- E. Installation of new Airfield Lighting Control and Monitoring System (ALCMS) with touchscreens in Vault and Air Traffic Control Tower (ATCT).
- F. Installation of new L-854 Radio Controller, antenna, conduit, and power and control wiring.
- G. Installation of new L-823 Connector Cabinet.
- H. Re-connection of all existing circuits to remain to new power panels.
- I. Installation of electric service at old vault, regulator, L-854 radio controller, power and controls for Runway 5-23 edge lighting circuit during construction.

Except as noted above, exterior field installed cable from airfield edge lights and visual nav aids and fiber optic cable between vault and ATCT will be paid for separately under applicable unit prices of Item 108, "Installation of Underground Cable for Airports" up to the connection to vault equipment.

Except as noted above, items of underground duct work shall be paid for under applicable unit prices of Item 110, "Airport Underground Electrical Duct Banks and Conduits."

EQUIPMENT AND MATERIALS

109.2.1 GENERAL

REVISE: Paragraph (a) of the Specifications as follows:

Airport lighting equipment and materials covered by Federal Aviation Administration (FAA) specifications shall have the prior approval of the FAA and shall be listed in Advisory Circular (AC) 150/5345-53, Current Edition, Airport Lighting Equipment Certification Program, including the current Addendum. All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the Engineer. The Contractor is responsible for using the latest editions of the referenced FAA Advisory Circulars, including any changes, in effect at the time of bidding. The advisory circulars may be obtained free of charge on the internet at the following address:

http://www.faa.gov/airports/airtraffic/airports/resources/advisory_circulars/

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/existing 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.

All materials and equipment used to construct this item shall be submitted to the Engineer for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided

they are as good a quality as the original. Clearly and boldly mark each copy to identify pertinent products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be boldly and clearly made with arrows or circles (highlighting is not acceptable). Contractor is solely responsible for delays in project accruing directly or indirectly from late submissions or resubmissions of submittals.

The data submitted shall be sufficient, in the opinion of the Engineer, to determine compliance with the plans and specifications. The Contractor's submittals (five (5) copies) shall be neatly bound in a properly sized 3-ring binder, tabbed by specification section. The Engineer reserves the right to reject any and all equipment, materials or procedures, which, in the Engineer's opinion, does not meet the system design and the standards and codes, specified herein.

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

109-2.14 SQUARE DUCT

ADD: Square duct shall be NEMA 1, hinged cover or NEMA 3R hinged cover as detailed.

ADD:

109-2.21 NOT USED

109-2.22 FAA-APPROVED EQUIPMENT

The following FAA approved equipment is to be used on this project:

- a. L-829, Constant Current Regulator, 20KW and 15 KW, 480V, single phase primary, 6.6 AMP maximum, 3-Step or 5-step Brightness secondary. Regulator shall be Ferroresonant design. All-Solid-State design regulators are not acceptable. Regulator shall be a self-contained unit of the static type with no moving parts requiring attention or service. Internal input fusing shall be provided. Positive open circuit and over-current protection in the event of a fault shall be provided. All control circuitry shall be behind a hinged door for accessibility. Input and output lightning arrestors shall be included. Power factor capacitor shall be provided and provide a power factor of 96% or better, at full load and maximum brightness. All controls, including brightness relays, shall be in the air-filled control cabinet. Regulator shall have provision for both external 120V control and internal 120V control. Regulator shall be equipped with internally mounted remote control operated primary contractor with 120VAC operating coil.

New regulators shall be equipped with Digital Control Interface units as required to interface with ALCMS and auto-megarring option.

- b. L-854 radio controller, 120V, with remote antenna, in NEMA 4 enclosure.
- c. Airfield edge lights (LED) and isolation transformers used as indicator lights as part of Regulator Indicating Light Assemblies at each regulator shall comply with requirements of Item 125 of these specifications.

109-2.23 OTHER ELECTRICAL EQUIPMENT

- a. Automatic Transfer Switch, 400A, 480/277V, 3-Pole with the following features:
 1. The automatic transfer switch shall be furnished with the necessary potential and frequency relays for sensing each phase of the commercial power source, control relays, time delays, contact to initiate engine starting and voltage and frequency relays for generator shall be provided and installed as shown on the plans.
 2. The switch shall be rated as shown on the Transfer Switch Schedule for both normal and emergency sources. Frequency of operation shall be 60Hz. Insulation rating shall be 600 volts on all main contacts and current carrying parts. Where utilized, bus shall be silver or tin plated copper construction. The withstand capacity of the main contacts shall not be less than 20 times the continuous duty rating when coordinated with any molded case circuit breaker established by certified test data.
 3. Enclosure shall be NEMA 1 unless otherwise specified.
 4. The current rating shall be a 24 hour continuous rating when the switch is enclosed in non-ventilated enclosure. The switch shall be unaffected by accumulative operations and shall conform to NEMA Temperature Rise Standards.
 5. The current rating shall be suitable for all classes of loads, i.e. resistance, tungsten, ballast and inductive loads as defined by U.L.
 6. The switch shall be certified to meet the latest adopted transfer switch standards as defined by U.L.
 7. All pilot devices and relays shall be of the industrial type with self-cleaning contacts and rated 10 amperes.
 8. The automatic transfer switch shall be arranged to close a pilot contact for remote starting of an engine-generator three seconds (adjustable) after loss of normal source or three seconds (adjustable) after a drop in voltage on any phase to 80 percent or less. The load circuits shall not be disconnected from the normal source during the three second time delay period. When the standby generator is delivering not less than 90 percent of rated voltage and 95 percent of rated frequency, the load circuits shall be transferred to the emergency power source.
 9. Upon restoration of the normal source to not less than 90 percent of rated voltage on and 95 percent of rated frequency on all phases, the load shall be re-transferred to the normal source after a time delay of from 2 to 25 minutes (adjustable). After retransfer to the normal source, the engine shall run unloaded for a cool-down period of 15 minutes (adjustable) and then automatically shut down and be ready to start upon the next failure of the normal source. If the standby plant should fail while carrying the load, retransfer to the normal source shall be made instantaneously upon restoration of the normal source.
 10. The transfer switch shall consist of completely enclosed contact assemblies and a separate control logic panel. The contact assemblies shall be operated by a non-fused motor operator or stored energy mechanism and be energized only momentarily during transfer, providing inherently double throw switching action. Control power for all transfer operations shall be derived from the line side of the source to which the load is being transferred.
 11. Transfer switch shall be positively interlocked both mechanically and electrically to prevent simultaneous closing of both sources under all operating conditions. Main contacts shall be mechanically locked in position in both normal and emergency positions.
 12. Where noted in the Transfer Switch Schedule, three-phase four-wire transfer switches shall be true four-pole switched neutral type with all four poles for each source being fully rated and connected to a common shaft. The fourth (neutral) pole contacts shall be of identical construction as, and operate simultaneously

- with, the main power contacts. Add-on or overlapping neutral contacts are not acceptable.
13. Inspection and replacement of all separate arcing contacts (moving and stationary) shall be possible from the front of the transfer switch.
 14. An electronic sensing and control logic panel shall be separately mounted from the power switching portion of the transfer switch. The two sections shall be connected by control cables with plug-in connectors. The control section shall be capable of being disconnected from the power section for maintenance purposes.
 15. The logic circuits shall utilize electronic components mounted on printed circuit boards to accomplish functions such as timing, time delays, and voltage and frequency monitoring. LED's shall be furnished to indicate the operation of each solid-state function. Modifications shall be available for field installation without voiding the UL label.
 16. The Automatic Transfer Switch shall be UL listed and suitable for service entrance installation.
 17. Automatic Transfer Switch feature requirements shall include as a minimum:
 - a. Time delay: Normal to emergency, adjustable
 - b. Time delay: emergency to normal, adjustable
 - c. Pilot light to indicate switch in normal position
 - d. Pilot light to indicate switch in emergency position.
 - e. Pilot lights marked "Normal Source" and "Emergency Source" to indicate that respective source voltages are available.
 - f. (Reserved)
 - g. Relay auxiliary contacts (2 NO and 2 NC) to indicate transfer switch position and the availability of each source.
 - h. Time delay engine start, adjustable
 - i. Time delay engine cool off, adjustable
 - j. Engine start (crank) contact
 - k. Delayed transition time delay, adjustable, to allow disconnection of load during transfer in either direction to prevent inrush currents due to out-of-phase switching of large inductive loads.
 - l. As a minimum, field adjustable three-phase under-voltage and under-frequency sensing shall be provided on Normal Source. Field adjustable single-phase under-voltage and under-frequency sensing shall be provided on Emergency Source.
 - m. Four-position test switch permitting four (4) modes of transfer switch operation:
 - TEST (simulates normal power outage)
 - AUTO (standard automatic operation)
 - OFF (de-energizes control relays and opens the engine start circuit for maintenance purposes)
 - ENGINE START (retains transfer switch in normal position and initiates a testing of the engine start circuit).
 - n. Automatic plant exercise timer, selectable Load/No-Load.
 - o. Compression or Mechanical lugs shall be furnished by the switch manufacturer for termination of all Normal, Emergency and Load cables by the Contractor unless Enclosed Transfer Switch is hard-bussed to adjacent equipment. Contractor shall coordinate all lug capacity and quantity for phase conductors, neutral conductors and ground conductors as indicated on the project drawings. All two-hole lugs shall utilize standard NEMA hole spacing.

- b. Main Distribution Panelboard, 400A, 480/277V, 3-Phase, 4-Wire, with 400A, 3P Main Circuit Breaker, in NEMA 1 enclosure, Eaton/Cutler-Hammer Pow-R-Line C, PRL3a, or equivalent. Minimum short circuit rating shall be 65kA. Provide branch circuit breakers as indicated on the plans. Provide Surge Protective Device (SPD), SPD shall comply with U.L. 1449 "2nd Edition" and NEMA LS-1 - Low Voltage Surge Protection Devices. Minimum total Surge Current and Withstand Capability shall be 240 kA per phase, 120 kA per phase.
- c. Power Panelboard, 125A, 120/208V, 3-Phase, 4-Wire, with 125A, 3P Main Circuit Breaker, in NEMA 1 enclosure, Eaton/Cutler-Hammer Pow-R-Line C, PRL3a, or equivalent. Minimum short circuit rating shall be 30kA. Provide branch circuit breakers as indicated on the plans. Provide Surge Protective Device (SPD), SPD shall comply with U.L. 1449 "2nd Edition" and NEMA LS-1 - Low Voltage Surge Protection Devices. Minimum total Surge Current and Withstand Capability shall be 240 kA per phase, 120 kA per mode.
- d. Power Panelboard, 100A, 120/240V, 1-Phase, 3-Wire, with 100A, 2P Main Circuit Breaker, in NEMA 1 enclosure, Eaton/Cutler-Hammer Pow-R-Line C, PRL3a, or equivalent. Minimum short circuit rating shall be 30kA. Provide branch circuit breakers as indicated on the plans. Provide Surge Protective Device (SPD), SPD shall comply with U.L. 1449 "2nd Edition" and NEMA LS-1 - Low Voltage Surge Protection Devices. Minimum total Surge Current and Withstand Capability shall be 240 kA per phase, 120 kA per mode.
- e. Lighting Contactor, (4) 2-pole 20A, 240V, electrically held lighting contactors in NEMA 1 enclosure with Hand-Off-Auto selector switch and photocell mounted on the exterior wall. Contactor shall be pre-wired, as manufactured by Square D or approve equal.
- f. L-823 Connector Cabinet, 48"w x 48"h x 12"d minimum, NEMA 1 enclosure with back panel and mounting unitstruts as detailed on the plans.

109-2.24 NATURAL GAS GENERATOR

- A. Natural gas generator shall have a minimum site capability of:
 - 150 KW/187.5 KVA @ 0.8 power factor; 60 Hz
 - 480/277 Volts
 - 3 Phase
 - 4 Wire.
 - Standby Rated
- B. System shall consist of a single generator set and include all controls, protection, wiring and accessories for automatic start-stop operation.
- C. Generator set shall include the capability of automatically controlling generator set operation. After starting, the unit will attain rated speed and voltage, and accept rated load. Generator set speed shall be controlled by the engine governor, while generator output voltage regulation shall be a function of the generator automatic voltage regulator. Manual adjustment of generator speed and voltage shall be provided.
- D. Generator set start-stop sequence shall be initiated manually or automatically by closing or opening of a contact. The control system shall automatically engage the cranking motor, sense engine starting speed, disengage the motor, arm the engine protection circuit, and accept load.

- E. Generator set shall immediately shut down in the event of over-speed, low oil pressure, and high water temperature. Cause of shutdown shall be indicated by a light annunciator. System logic shall prevent restart until fault is cleared.
- F. There shall be a provision for manual shutdown in the event of an emergency.
- G. Fuel shall be natural gas. Contractor shall provide new natural gas line from existing gas meter and gas regulator for the gas pressure required by the generator manufacturer.
- H. All components shall have been designed to achieve optimum physical and performance compatibility and prototype tested to prove integrated design capability. Prototype testing shall comply with the requirements of NFPA 110 for Level 1 systems. Each complete system shall have been factory fabricated, assembled, and production tested as performed by generator manufacturer.
- I. Each generator set shall be a complete unit, including, but not limited to, engine, generator, controls, exhaust, generator mounted main circuit breaker and radiator. All crankcase lubricant, coolant, full tank of fuel and other consumables are to be included with the unit before final acceptance.
- J. Generator set shall meet all U.L. 2200 requirements.
- K. The engine shall be a stationary, liquid cooled, four-cycle design. Units utilizing two-cycle engines will not be considered. Manufacturer shall maintain a nationwide support organization for parts and service.
- L. Unit shall be capable of providing full rated nameplate horsepower and kW under the following conditions simultaneously without derating:
 - 1. Altitude 700 ft above sea level.
 - 2. External ambient temperature of 110°F minimum
- M. The engine shall be equipped with air filters, fuel filters and pressure gauge, lubricating oil cooler, filters and pressure gauge, water pump and temperature gauge, service hour meter, flywheel and flywheel housing.
- N. The fuel system shall be integral with the engine. It shall consist of fuel filter, transfer pump, injection pumps, lines, and nozzles. The transfer pump shall deliver fuel under low pressure to individual injection pumps - one for each cylinder. The injection pumps shall be driven from the camshaft and simultaneously controlled by a rack and pinion assembly that is hydraulically actuated by signals from the engine governor. The pumps shall be of a variable displacement type to alter the volume of fuel delivered to the spray nozzles according to load demand. The nozzles shall inject fuel directly into the cylinder in the optimum spray pattern for efficient combustion.
- O. The engine jacket water cooling system shall be a closed circuit design with provision for filling, expansion and de-aeration. The cooling pump shall be driven by the engine. Auxiliary coolant pumps required for separate circuit after cooling shall also be engine driven. The cooling system shall tolerate at least 172.4 kPa (25 PSI) static head.
- P. Governor: The engine governor shall be of the electronic type. Speed "droop" shall be adjustable from 0 (isochronous) to 10%, from no load to full rated load. Steady State frequency regulation shall be +/- 0.25%, or better. Speed shall be sensed by a magnetic pickup off the engine flywheel ring gear. A provision for remote speed adjustments shall

be included. The unit shall adjust fuel delivery according to exhaust smoke, altitude and cold mode limits. In the event of a DC power loss, the forward acting actuator will move to the minimum fuel position.

- Q. Engine Jacket Heater: Thermal tank-type water heater with integral thermostatic control, 3KW minimum, or as sized to maintain engine jacket water at 90°F (32°C), and suitable for operation on 120/240/480 Volts AC.
- R. The engine exhaust system shall be installed to discharge combustion gases quickly and silently with minimum restriction. System back pressure shall in no case exceed 6.7kPa (27" of water). Heavy walled piping such as Schedule 40 is preferred with radii of 90° bends at least 1 ½ times the pipe diameter. Piping shall be installed with 229 mm (9 in) minimum clearance from combustible material or incorporate appropriate insulation and shielding. Piping shall be supported and braced to prevent weight or thermal growth being transferred to the engine and flexible expansion fittings provided to accommodate thermal growth. Support dampers and springs shall be included where necessary to isolate vibration. Long runs of pipe shall be pitched away from the engine and water traps installed at the lowest point. Exhaust stacks shall be extended to avoid nuisance fumes and odors, and outlets cut at 45° to minimize noise.
- S. Provide hospital grade silencer, Maxim M-41 series, or equivalent. Inlet and outlet pipe shall be sized as required by engine generator manufacturer.
- T. The engine starting system shall include 24 volt DC starting motor(s), starter relay, and automatic reset circuit breaker to protect against butt engagement. Batteries shall be low maintenance, high output, lead acid type mounted near the starting motor. A corrosion resistant or coated steel battery rack shall be provided for mounting. Copper battery cables shall be furnished with the equipment and sized to satisfy circuit requirements. The system shall be capable of starting a properly equipped engine within 10 seconds at ambient temperatures greater than 22°C (70°F).
- U. Battery charger shall be current limiting type suitably sized for generator system and batteries furnished, but in no case less than 10 Amp continuous rated. Unit voltage shall match that used for by generator batteries and shall include both "float" and "equalize" features. Battery Charger shall be EnerGenius NRG by Stored Energy Systems (SENS), Longmont, CO, or equivalent. Battery Charger shall be furnished loose for installation and wiring by Contractor in nearby structure as shown on project drawings.
- V. The alternator shall utilize permanent magnet excitation system capable of withstanding a three-phase load of 300% rated current for 10 seconds during a fault condition.
- W. Generator shall be per ANSI/NEMA MG 1. Unit to be three phase, four pole design.
- X. Alternator Enclosure: ANSI/NEMA MG 1; open drip roof.
- Z. Voltage Regulation: Digital type, microprocessor based with fully programmable operating and protection characteristics. The regulator shall be capable of sensing true RMS in three phases of the alternator output voltage, or operate in single-phase mode.
- AA. Alternator Protection: The generator Main Circuit Breaker shall not be utilized solely for alternator protection. The manufacturer shall include a dedicated protection controller system such as Cummins/Onan AmpSentry or Caterpillar EMCP-II+ specifically designed to protect equipment against all fault and overload conditions.

BB. Provide condensation space heaters for generator alternator windings.

CC. Insulation shall be NEMA MG-1, Class H (150°C rise) minimum.

DD. Motor starting capability shall be a minimum of 50 kVA. The generator set shall be capable of sustaining a minimum of 90% of rated no-load voltage with the specified kVA load at near zero power factor applied to the unit.

EE. Generator set main circuit breaker shall be:

225 Amps Frame
225 Amps Trip
Thermal Magnetic Trip Type
3 Pole
42 kAmps Interrupting Capacity (AIC) at operating voltage.

1. Include 24 VDC Shunt-Trip Coil
2. Circuit breaker lugs shall be provided to accommodate the number and size of load cables as detailed on the drawings. Contractor shall coordinate with supplier to meet this requirement.

FF. Spring type vibration isolators, Korfund Series LK or equivalent, shall be provided in suitable size and quantity for the equipment.

GG. The engine generator controls shall include the following features as a minimum:

1. Digital Display Indication of:
 - a. AC voltage (L-L)
 - b. AC amps
 - c. System Diagnostics
 - d. Frequency
 - e. DC voltage
 - f. Coolant temperature
 - g. Oil pressure
 - h. Revolutions per minute (RPM)
 - i. Hours Run
2. Operator Controls
 - a. Auto Start/Stop
 - b. Emergency Stop
 - c. Lamp Test
 - d. Cycle Crank
 - e. Voltage Control
 - f. Cool-down Timer
 - g. Phase Selector Switch
3. Enclosure Rating: NEMA 1, IP22 with vandal resistant door
4. Indicating Lights for the following as a minimum:
 - a. Low Oil Pressure
 - b. High Coolant Temperature
 - c. Overspeed
 - d. Overcrank
 - e. Emergency Stop

- f. Fault Shutdown
 - g. Fault Alarm
5. Additional Features Required:
- a. Common alarm/shutdown volt free contact. Contact shall close upon all generator failure conditions. Contact to be extended to facility telephone alarm dialer. Contact shall not require external power source for operation and shall function with generator DC battery supply only.
- HH. NFPA 110 REQUIREMENTS: Each packaged engine generator set shall include annunciator panel and pre-alarm module complying with NFPA 110 requirements. The annunciator panels shall be provided with a surface mount enclosure to be remotely installed where shown on the drawings or as directed by the Owner's authorized representative. Inputs to SCADA for these alarms shall also be provided. Indication points shall be provided as a minimum:
- 1. High Coolant Temperature: Alarm and Shutdown
 - 2. Low Coolant Temperature: Alarm
 - 3. Low Oil Pressure: Alarm and Shutdown
 - 4. Not in Auto: Alarm
 - 5. Over-crank: Shutdown
 - 6. Over-speed: Shutdown
 - 7. Spare Faults: 4 Red, 3 Amber/Switch Inputs
 - 8. Common alarm to be connected to the SCADA panel.

109-2.25 UTILITY SERVICE

Work included in this section is labor, equipment and materials necessary to provide a complete and operational service entrance as specified herein. This work shall be coordinated with serving utility and shall be considered incidental to the power distribution system for the new vault. Major work items to be performed:

- 1. Installation of new concrete pad for utility transformer.
- 2. Installation of new primary conduits with pull strings.
- 3. Installation of new secondary conduits and conductors.
- 4. Installation of Utility-approved Metering C.T. cabinet.
- 5. Installation of Utility-approved meter base.
- 6. Additional work as required by serving electric utility shall be considered incidental to this specifications section.

NOTE: Any charges by the Utility will be paid for separately by the Owner and are not part of the bid item.

109-2.26 SHOP DRAWINGS

In addition to the requirements of Section 60 Paragraph 60-09 of the General Provisions of Division 1 of these specifications, shop drawings shall also be submitted for review for all items specified in Paragraphs 2.2 through 2.24.

109-2.27 AIRFIELD LIGHTING CONTROL AND MONITORING SYSTEM (ALCMS)

ALCMS shall be FAA approved L-890-B-Y (Basic Monitoring and Preset Failsafe) system as detailed on the plans and specified herein:

The ALCMS manufacturer shall be listed in the FAA Approved Equipment List, AC 150/5345-53 (current edition), be a FAA approved supplier of L-890 Airfield Lighting Control and Monitoring and Monitoring Systems in accordance with AC 150/5345-56 (current edition), and be a FAA approved supplier of Constant Current Regulator Monitors in accordance with AC 150/5345-10 (current edition).

ALCMS Approved Manufacturers:

ADB/Safegate
Eaton
Or an approved equal

The system shall represent the leading edge in aviation lighting technology with innovative Touchscreen control stations; distributed control and monitoring; and powerful database storage and retrieval systems.

The ALCMS manufacturer shall be ISO 9001 certified and provide a copy of the ISO certification during the submittal process.

The ALCMS manufacturer shall be listed in the FAA Approved Equipment List, AC 150/5345-53 (current edition), be a FAA approved supplier of L-890 Airfield Lighting Control and Monitoring and Monitoring Systems in accordance with AC 150/5345-56 (current edition), and be a FAA approved supplier of Constant Current Regulator Monitors in accordance with AC 150/5345-10 (current edition).

The ALCMS manufacturer shall have a minimum of five (5) years of experience in computerized airfield lighting control and monitoring systems and shall have installed at least five (5) basic control and monitoring systems of similar size and complexity to the one specified herein.

The ALCMS Manufacturer shall furnish and commission a complete and functional computerized distributed control and monitoring airfield lighting system based on an industry standard Ethernet network.

This project shall include software, programming, computers, manuals, on-site commissioning, on-site testing, on-site training and any other materials, tools and equipment to provide a fully functional system to the satisfaction of the Engineer.

The ALCMS Manufacturer shall provide an experienced and qualified Engineering, Sales and Service staff to support the contractor and airport throughout the installation and life of the system.

The proposed ALCMS shall be compatible with existing Crouse-Hinds and ADB regulators. It shall be the Contractor's responsibility to coordinate with regulator manufacturer and to provide all required CT's, PT's and components for a fully functioning L-890 ALCMS.

FACTORY ACCEPTANCE TEST (FAT)

Before shipment, the ALCMS system shall be assembled as an operating system at the ALCMS Manufacturer's test facilities.

ON SITE COMMISSIONING AND SYSTEM ACCEPTANCE TEST (SAT)

The ALCMS manufacturer shall perform complete onsite commission and system readiness checks. A witnessed system acceptance tests shall be performed onsite by ALCMS manufacturer to be witnessed by airport/owner representative and contractor. Copies of the SAT shall be provided.

MAINTENANCE TRAINING

Maintenance training shall be provided during the commissioning of the system for Airport and FAA personnel. Training shall be scheduled with FAA and Airport maintenance and management staff, training shall be minimum of (2) 4-hour sessions at the airfield lighting vault and ATCT.

ALCMS EQUIPMENT AND MATERIALS

The ALCMS shall be a PC-based or PLC-based system for control or monitoring. Ethernet communication network using Multi-Mode fiber optic shall be used for data transfer between the electrical vault and airport office.

The computerized airfield lighting control and monitoring system shall consist of the following major hardware components:

1. Touchscreen control station located in the ATCT cab.
2. ATCT computer subsystem consisting of an industrial enclosure with PLC or PC and communication equipment, UPS and printer.
3. Vault computer subsystem consisting of an industrial enclosure with PLC or PC, monitor, UPS and communication equipment.

Within the airfield lighting vault shall be a distributed control and monitoring system located within each regulator which operates on a redundant communication network or as required by ALCMS manufacturer.

The Distributed Control and Monitoring Equipment (DCME) shall be of a distributed nature that shall be installed locally at each controlled element within the vault. The vault industrial computer communicates to each DCME via two (2) shielded cables each consisting of two (2) twisted pairs.

The system shall monitor the operation of the various lighting systems per AC 150/5345-10 (current edition) requirements.

Furnish and install ALL required CT's and interface modules for new regulators for a fully functional L-829 and L-890 system.

COMMUNICATION NETWORK

The electrical vault and airport office shall communicate via 12 strand single-mode fiber optic cable.

TOUCHSCREEN CONTROL STATIONS

TECHNICAL SPECIFICATIONS

- A. Touchscreen technology shall be integrated into the display monitor and shall have the following technical specifications:

Options Description

- a. Technology - AccuTouch™ Five-Wire Resistive
- b. Screen Resolution - 1280 x 1024 (minimum)
- c. Touch Resolution - Touchpoint controller resolution of 4096 x 4096
- d. Input method - Finger or stylus
- e. Positional Accuracy - Standard deviation error less than 0.080" (2mm)
- f. Agency Approvals - UL, CE, FCC Class A
- g. Chemical Resistance - The active area of the Touchscreen is resistant to all chemicals that do not affect glass.
- h. Temperature/ Relative Humidity – (-)10°C to 50°C at 90% RH, non-condensing
- i. Electrostatic - Per EN 61000-4-2
- j. Light Transmission - 80% +/- 5% at 550nm wavelength

- k. Face Plate - Anti-glare
- l. Expected Life - 35 million touches in one location without failure

TOUCHSCREEN MONITOR SPECIFICATIONS

A. The touchscreen video graphics display shall have the following technical specifications:

Options Description

- a. Type - LCD, active matrix
- b. Mounting - Flush Mount
- c. Size - 19" Diagonal viewable
- d. Screen Resolution - 1280 x 1024 (minimum)

ALCMS EQUIPMENT

- A. Uninterruptible Power System: DCME Control and Monitoring Equipment (vault only)
- 1. An uninterruptible power system (UPS) shall be provided for supporting power to the DCME equipment and PC/PLC.
 - 2. The UPS shall be capable of supplying full load power for 10 minutes after loss of main input power.
 - 3. The UPS shall be in the vault computer equipment and airport office equipment enclosure.
- B. Industrial Enclosures
- 1. A NEMA 12 industrial enclosure shall be provided for housing associated ALCMS equipment.
 - 2. The enclosure is designed for indoor use to provide protection against dust, dirt, dripping water, and external condensation of non-corrosive liquids.
 - 3. The industrial enclosure shall include a pagoda top with exhaust fan and ventilation kit for proper convection cooling.
- C. The environmental conditions within the area of the enclosure installation shall not exceed 122 Deg F (50 Deg C) or fall below 32 Deg F (0 Deg C).
- D. Printer - The printer shall be a black and white Laser Jet Printer. The printer shall be located on a shelf within the airport office building.

DISTRIBUTED CONTROL EQUIPMENT

- A. The control and monitoring equipment shall be of a distributed nature or PLC based.
- B. The DCME units shall be installed locally at each device (i.e. CCR) which requires control and/or monitoring within the airfield lighting electrical vault.
- C. The DCME unit shall also house Insulation Resistance Measurement System (IRMS) as shown on the plans.

OVERVIEW OF OPERATION

- A. The ALCMS shall perform the following functions:
- 1. Brightness setting control of the CCRs or ON/OFF control as required by the controlled element (i.e. beacon may only require ON/OFF control).
 - 2. Perform all failsafe functions.
 - 3. Self-diagnostic function to monitor for proper operation.
 - 4. Locally store all data and parameters specific to the controlled element.

5. Measure and record Insulation Resistance.

FAILSAFE

- A. ALCMS shall provide a self-contained failsafe feature that shall perform the following functions:
 1. Insure default operation of the airport lighting, even if the entire airport lighting control system is not functioning.
 2. Display the commands sent by the computer to the CCRs and/or to the other controllable items.
 3. Adaptable to each CCR regardless of internal or external control voltage.
 4. Permits maintenance of portions of the control system, without changing the operational status of the lighting system.
- B. The failsafe mode of ALCMS shall be "Passive Failsafe" mode.
- C. If the CCR was switched ON before the failure, it shall remain ON at the same brightness level.
- D. If the CCR was switched OFF before the failure, it shall remain OFF.
- E. Failsafe shall be able to be bypassed by selecting the CCR locally to any desired brightness level.

GRAPHICAL USER INTERFACE OPERATION

General

- A. The Airport Office Touchscreen display shall control and monitor the airfield lighting system. The display shall show real-time information on the operational status of the airfield lighting systems.
- B. The Touchscreen control stations shall consist of multiple Touchscreen 'pages' each with a specific function. These Touchscreen 'pages' are defined as follows:
 1. Runway Lights: Consists of runway control touch buttons used to individually control runway circuits. Multiple runway pages may be necessary for airports with several runways.
 2. Taxiway Lights: Consists of taxiway control touch buttons used to individually control taxiway circuits if required.
 3. NAVAIDS: Consists of control touch buttons for PAPI's, windcone and beacon.
 4. Utilities: Consists of miscellaneous functions for calibrating the Touchscreen, granting lighting control to other locations, setting the date and time, etc.
 5. Overview of Operation
- C. Airfield lighting control commands are entered into the system by touching the corresponding touch button on the Touchscreen video display. When a command is entered, the Touchscreen shall respond by graphically displaying the button as being depressed and change the button color.
- D. The associated circuit graphics shall alternately flash indicating the airfield lighting section that shall be affected when this command is "confirmed".
- E. Once confirmed, the Airport Office Touchscreen shall register the command, generate a data instruction and transmit the command to the vault computer for implementation. The command is also simultaneously transmitted to the maintenance computer and all other computers connected to the network.
- F. In the event that communications is lost between the airport office and vault, an alarm is indicated at each computer location.
- G. In the event of a predefined alarm condition, the effected airfield lighting circuit graphic shall flash red and an audible alarm tone shall alert operators to the alarm condition.

ALCMS ALARM FUNCTIONS

Touchscreen Audible Alarm

- A. The audible alarm shall sound at each Touchscreen display when an alarm condition occurs. In addition, the 'ALARM ACK' button shall flash and the associated airfield circuit graphics shall change to red.
- B. The audible alarm shall stop automatically after three (3) seconds unless the 'ALARM ACK' button is pressed.
- C. If the alarm is not acknowledged, the audible shall cease for sixty (60) seconds while the 'ALARM ACK' continues to flash. If the 'ALARM ACK' is still not pressed after the sixty (60) seconds, the audible shall sound again for three (3) seconds.
- D. This sequence shall repeat indefinitely until the alarm is acknowledged.
- E. The ALCMS shall continuously monitor the status of all of the circuits per the monitoring requirements as specified previously.
- F. If there are any monitoring discrepancies (i.e. incorrect CCR output current, loss of primary power) an alarm shall be generated at the Touchscreen display for the associated circuit.

TOUCHSCREEN COMMAND SEQUENCES

- A. The Touchscreen control station shall allow the airfield lighting circuits to be controlled individually (i.e. RWY Edge) or as a group based on preset tables (See following section).
- B. Each control command shall require two distinct operator actions in order for the command to initiate any state changes in the airfield lighting. The command sequence shall be as follows:
 - 1. Select circuit: Operator selects the desired circuit to be changed.
 - 2. Select intensity: Operator selects the desired brightness step that the circuit is to be changed to.
 - 3. Graphics flash: The graphics associated with the selected circuit shall begin to flash visually indicating to the operator the airfield lighting section that is going to be affected by the command.
 - 4. Confirm/Reject: Operator selects the 'CONFIRM' button to accept the selection and initiate the lighting change. Operator selects the 'REJECT' button to cancel the selections and make another selection.

GRAPHICAL AIRPORT PICTORIAL

- A. The ALCMS display screens shall display a graphical pictorial representation of the airport runways, taxiways and other requested airport features.
- B. When there is a change in lighting system status, the appropriate graphical detail shall indicate the status by changing color.
- C. The circuit intensity display colors shall be represented as seen in the legend as follows.

BEACON CONTROL

- A. The ALCMS shall provide control of the existing Beacon from the ALCMS node.
- B. The ALCMS shall provide one (1) optically isolated, dry-contact output point at the Beacon contactor inside ATCT Cab. The contact shall be rated 1A at 120Vac.

- C. The ALCMS shall close the output to command the Beacon ON and open the output to turn the Beacon OFF, based on the photocell input. The contractor shall provide an interface relay/contactor to connect power to the Beacon.

RADIO CONTROL ENABLED CONTROL METHODOLOGY

- A. The ALCMS shall provide an interface to the new L-854 radio controller located inside the vault.
- B. One (1) button labeled "Radio Control" will be programmed to allow air-to-ground radio control after normal operating hours.
- C. When the radio control button is pressed, all preset settings are changed for radio operations according to the preset control methodology.
- D. Radio Control preset lighting settings shall be specified by the airport.
Radio Control Interface
 1. The ALCMS system shall provide three (3) inputs for Radio Control commands.
 2. The ALCMS shall monitor the inputs and adjust the airfield lighting according to the Radio Control preset table.
 3. The ALCMS shall only monitor for the radio control inputs when the "Radio Control" button is enabled at the Airport Office.
 4. Locating and wiring of Radio Control output points shall be completed by the contractor in coordination with the airport/engineer and equipment manufacturer.

ATS MONITORING

- A. The ALCMS shall provide monitoring of new Automatic Transfer Switch (ATS) from the ALCMS node.
- B. The ALCMS shall monitor and provide alarms for utility power loss, generator run, utility available, generator available and generator fail.

CONSTRUCTION METHODS

CONSTRUCTION OF VAULT AND PREFABRICATED METAL HOUSING

109-3.1 GENERAL

ADD:

All electrical equipment shall be installed in conformance with applicable sections of NPFA 70 - National Electrical Code, respective equipment manufacturer's directions, as detailed on drawings and as specified herein. Any installations which void U.L. listing (or other third party listing) and/or manufacturer's warranty of a device or equipment shall NOT be permitted.

In installation of this work, Contractor shall comply in every respect with requirements of National Electrical Code (NEC), National Board of Fire Underwriters, and any state and local requirements, laws and ordinances as may be applicable.

If, in opinion of the Contractor, there is anything in drawings or specifications that will not strictly comply with above laws, ordinances and rules, the matter shall be referred to the attention of the Owner's representative for a decision before proceeding with that part of the work. No changes on drawings or in specifications shall be made without the full consent of Owner's representative.

Contractor shall obtain and pay for all licenses, permits and inspections required by above laws, ordinances and rules for entire electric wiring job called for in these specifications and accompanying drawings.

Drawings and specifications are intended to be descriptive only, and any error or omissions of detail in either shall not relieve Contractor from obligations thereunder to install in correct detail any and all materials necessary for complete and operating electrical systems to extent shown on drawings and described in this specification.

Contractor shall, during progress of job, record any and all changes or deviations from original drawings, and, at completion of project, shall deliver to Owner's representative a single marked-up set of "as-built" drawings.

This Contractor shall prepare shop drawings for all parts of his work. Before commencing any work or providing any material, Contractor shall submit for approval all drawings relating to construction, arrangement or disposition of equipment entering into contract, and show complete equipment with manufacturer's specifications of same.

Shop drawings shall be fully descriptive of all materials and equipment to be incorporated into this project. Contractor shall carefully check all submitted shop drawings, making sure they are complete in all details and cover specific items as hereinafter specified. No material or equipment shall be allowed at the site until shop drawings approved by the Engineer are received by the Resident Engineer at the site.

109-3.3 ROOF

DELETE: This section.

INSTALLATION OF EQUIPMENT IN VAULT OR PREFABRICATED METAL HOUSING

109-4.4 DUCT AND CONDUIT

ADD:

The series circuit wireway shall be stand-off mounted to permit conduits to be routed to wireway below.

109-4.6 MARKING AND LABELING

ADD:

(c) Nameplates and legend plates shall be engraved three-layer laminated plastic, black letters on white background. Legends (wording) shall be as detailed on drawings or as directed by Owner's representative.

(d) All wire markers installed on electrical equipment shall be weatherproof and water resistant. Wire identification labeling, whether factory applied or written in the field, shall utilize an adhesive that does not soften or weaken over time. Sleeve or tubing type labels may be utilized as an alternate. Paper adhesive-backed wire markers will be rejected and replaced at the Contractor's expense. Wire marker labels shall be as manufactured by Brady, or equivalent.

ADD:

109-4.9 ALCMS INSTALLATION

The Contractor shall install new ALCMS at new airfield lighting vault and ATCT as shown on the plans and specified herein. The installation of new fiber optic communication link between new airfield lighting vault and ATCT shall be as described in specification 108.

The Contractor shall install ALCMS cabinet in the ATCT mounted to the floor and anchored to the wall as shown on the plans and as directed by FAA.

The Contractor shall install new ALCMS cabinet, touchscreen, UPS and printer in airport office at the location determined by the Airport. Install new circuit breaker and 120VAC power to the new ALCMS in the airport office.

109-4.10 GENERATOR INSTALLATION

- A. Installation shall comply with applicable state and local codes as required by the authority having jurisdiction. Install equipment in accordance with manufacturer's instructions and instructions included in the listing or labeling of UL listed products. Contractor shall coordinate with utility company to upgrade (if required by utility) existing natural gas service to feed new generator.
- B. Equipment shall be provided and installed in conformance with all applicable State, County and Local requirements, rules and regulations.
- C. Contractor shall pay for all consumables (oil, anti-freeze, fuel, etc.) for start-up and load-bank testing as well as topping off same after commissioning of equipment prior to acceptance by owner.
- D. Contractor shall install concrete pad as detailed on the plans. Concrete pad shall be of minimum dimensions as shown on the plans or adjusted for the actual equipment enclosure. The conduit stub location for generator output, auxiliary circuits and annunciator panel communications shall be coordinated with the generator manufacturer. Provide minimum of 3'-0" around the generator.
- E. The complete installation shall be tested for compliance with the specification following completion of all site work. Factory performed load-bank testing of generator set prior to shipment will not be considered as an alternative in meeting on-site load bank testing requirements. Testing shall be conducted by representatives of the manufacturer, with required fuel supplied by Contractor. The Engineer shall be notified in advance and shall have the option to witness the tests. Engine generator manufacturer/supplier shall provide testing and startup services and shall provide load bank for testing of generator under load.
- F. Inspection:
 - 1. Carefully inspect wiring, fuel system, exhaust system, duct and ventilation openings prior to operating generator set.
 - a. Ensure completeness of installation and that all connections are sound and leak free.
 - 2. Carefully inspect generator set.
 - a. Inspect belts for proper tension
 - b. Tighten all loose bolts to proper torque.
 - c. Remove all shipping tags and covers where appropriate.

- d. Verify proper levels of coolant, lubricating oil and fuel are present.

G. Cleaning:

1. Prior to starting generator set thoroughly clean the following as a minimum:
 - a. Housing of dust and debris to prevent pick up by air intake.
 - b. Generator set of all dirt, dust and debris.
 - c. Fuel oil, lubricating oil, or coolant spills and residues.
 - d. All associated equipment in housing.

H. Preparation:

1. Verify fuel levels in tanks; ensure that adequate supply of fuel is available.
2. Inspect battery condition; verify full charge.
3. Prime engine fuel intake manifold.

I. Acceptance Test:

1. Make all specified submittals.
2. Demonstrate functional capability at site under manual and automatic modes of operation.
 - a. Verify that all controls work and that interfaces with fuel system and transfer switches are properly operating.
3. Demonstrate ability of unit to automatically start and accept load by transfer switch command within 10 seconds.
 - a. Record all delay times.
4. Perform full-load test using load bank sufficient to provide 100% specified KW rating (1.0 Power Factor) for 2-hour test period.
 - a. Start generator system and, upon reaching rated speed, pick up 100% load on single step.
 - b. Record voltage, amperage, frequency, oil pressure and engine temperature at beginning of test and each ½ hour thereafter.
 - c. Furnish test report to Engineer.
5. Apply manufacturer's touch-up paint to any surfaces scratched or otherwise blemished during shipment or installation.
6. Correct any deficiencies found during testing, retest if required.
7. Verify that system is operating as specified before concluding tests.
8. Top-off any liquids (fuel, oil, coolant) before acceptance.
9. Instruct user personnel on the operation and maintenance of unit.

109-4.11 EXISTING GENERATOR AND VAULT EQUIPMENT REMOVAL.

The Contractor shall remove and dispose of existing airfield lighting vault equipment as shown on the plans. Existing regulators and generators shall be removed and salvaged. Existing L-854 radio controller and antenna shall be removed and salvaged for spare parts. All other equipment shall be removed and disposed of offsite by the Contractor. If the Airport does not want any of the removed materials then the Contractor shall dispose of off airport property at no additional cost to the contract.

Contractor shall remove and dispose all existing diesel fuel tank and associated piping in compliance with IEPA requirements. Existing contaminated material shall be properly disposed off-site as required by IEPA and local environmental codes.

109-4.12 TEMPORAY ELECTRIC SERVICE AND REGULATOR.

The Contractor shall furnish, operate and maintain a temporary electric service in old vault to feed existing Runway 5-23 regulator during the construction of the vault electrical system during the time the existing electrical airfield vault is out of service. Existing regulator and L-854 radio controller shall be relocated to a location inside the old vault and shall be connected to the existing/new homeruns for the Runway 5-23 edge lighting circuit.

The Contractor shall be responsible for maintenance of the temporary electric service and regulator during the entire vault construction period. Temporary electric service and regulator shall be removed after the new vault power distribution and airfield lighting circuits are energized and tested and ready for operation.

METHOD OF MEASUREMENT

109-5.1 DELETE: This section.

ADD:

VAULT MODIFICATIONS.

The quantity of vault modifications to be paid for shall be lump sum. This item shall consist of removals of all vault equipment including regulators, furnishing and installation of all vault electrical power distribution equipment, including but not limited to lighting, wireways, conduits/conductors, new electric service, cable/conduit/duct bank to transformer pad, ATS, L-854 radio controller, mounting panels, L-823 cabinet, panelboards, transformers, indicator lights, ground grid, photocell, connections of all existing circuits, lighting contactors, temporary electric service and regulator, except for the regulators and generator, and all labor and materials necessary for a complete and accepted installation.

109-5.2 DELETE: This section.

ADD:

REGULATORS.

The quantity of regulators to be paid for shall consist of furnishing and installation of regulators of each size, and all labor and materials necessary for a complete and accepted installation.

109-5.3 DELETE: This Section.

ADD:

L-890 AIRFIELD LIGHTING CONTROL AND MONITORING SYSTEM (ALCMS)

The quantity of new ALCMS to be paid for under this item shall be lump sum. This item shall include all the work associated with new ALCMS, including but not limited to installation of ALCMS equipment in vault and ATCT. This item shall also include installation UPS, printer, photocell, installation of circuit breaker and power in ATCT, coordination with regulator manufacturer, installation of cable/conduits in vault and ATCT, ATCT cab counter modifications, testing, commissioning and training for a complete and operational ALCMS as specified.

ADD:

109-5.4 NATURAL GAS GENERATOR

The quantity of new Natural Gas Generator to be paid for under this item shall for each generator furnished and installed. This item shall include all the work associated with new 150KW/187.5KVA natural gas generator installed on the existing concrete pad in the airfield lighting vault, including but not limited to installation of new natural gas line and new ductwork connection of new generator to existing louver. This item shall also include installation of annunciator panel, battery charging system, engine block heater, exhaust system and required cable/conduits, modifications, testing, commissioning and training for a complete and operational natural gas generator as specified.

109-5.5 REMOVE EXISTING GENERATOR AND ASSOCIATED COMPONENTS

The quantity of Remove Generator to be paid for shall be lump sum. This item shall consist of the disconnection and removal of existing diesel generator and all equipment associated with the existing generator, removal of existing fuel tanks and piping and other components necessary for the new installation as detailed on the plans, and all labor and materials necessary for a complete and accepted removals.

BASIS OF PAYMENT

109-5.1 ADD: Payment will be made under:

Item AR109210 - Vault Modifications – per lump sum.

Item AR109331 - 15 KW Regulator, Style 1 – per each.

Item AR109342 - 20 KW Regulator, Style 2 – per each.

Item AR109810 - Generator – per each.

Item AR109908 - Remove Generator – per lump sum.

Item AR800192 - Install ALCMS L-890 – per lump sum.

ITEM 110 – INSTALLATION OF AIRPORT UNDERGROUND ELECTRICAL DUCT

See the Standard Specifications for Construction of Airports September 25, 2020 for the complete specification.

DESCRIPTION

110-1.1

ADD:

This item shall consist of the construction of new PVC Schedule 40 concrete encased duct banks and new PVC Schedule 80 directionally bored conduits including appropriate duct markers in pavement at the locations shown in the plans or as directed by the Engineer.

Trenching and backfilling under the proposed pavement for the concrete encased duct shall not be paid for separately, but shall be considered incidental to the associated duct item. Contractor shall provide pull wire for each conduit and cap the unused conduits for future use.

EQUIPMENT AND MATERIALS

110-2.3 PLASTIC CONDUIT

ADD:

Conduit shall be Schedule 40 and 80 where indicated in the Plans. In general, Schedule 40 PVC conduit is required for concrete encased duct banks and Schedule 80 PVC conduit for directionally bored conduits.

110-2.11 DUCT MARKER

ADD:

The Contractor shall provide duct markers for each new or existing duct being used as detailed in the plans. The cost of installation of the duct markers shall be incidental to the contract.

Brass duct markers shall only be used at bituminous pavement locations as shown on the plans. At concrete pavement locations, the Contractor shall stamp the concrete as directed by the Engineer.

110-2.12 AGGREGATE BACKFILL

ADD:

Crushed aggregate material conforming to the requirements of Item 208 or as approved by the Engineer shall be used for backfill at the pavement crossings for the proposed duct installation. In lieu of aggregate, the Contractor may substitute Controlled low strength material (CLSM) backfill for those areas requiring aggregate backfill. This substitution must be approved in writing prior to construction and must be completed at no additional cost to the contract. CLSM shall meet the Item 153. The CLSM material will be considered incidental to the associated duct item.

CONSTRUCTION METHODS

110-3.6 BACKFILLING FOR DUCT BANKS

ADD:

Crushed Stone conforming to the requirements of Item 208 gradation shall be used for backfill at the pavement crossings for the new duct installation. Backfilling materials shall be compacted to The granular material shall be compacted to not less than 95% of Standard Proctor laboratory density or to the Resident Engineer's satisfaction by ramming or tamping with tools approved by the Resident Engineer.

110-3.8 REPLACEMENT OF ITEMS IN KIND

ADD:

The Contractor shall remove and replace in kind PCC sidewalk, fence, concrete curb and gutter and pavement marking in accordance with Standard Specifications Item 501, 162, 754 and 620 respectively at the locations where the proposed concrete encased duct crosses these items. This cost shall be considered incidental to the contract.

METHOD OF MEASUREMENT

110-4.1

ADD:

No separate measurement will be made for individual ducts in a multi-way duct system. The cost of trench excavation and backfill shall not be measured separately for payment, but shall be considered incidental to the respective pay item associated with the work.

BASIS OF PAYMENT

110-5.1

DELETE: Entire Section.

ADD:

Payment will be made at the contract unit price per lineal foot for each size of concrete encased duct and directionally bored conduits completed and accepted. These prices shall be full compensation for furnishing all materials and for all preparation, assembly, aggregate backfill, backfill, compaction, duct markers, pull rope/wire, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete these items as specified herein.

Restoration, topsoiling, seeding and mulching of the duct and conduit trench shall not be paid for separately but shall be considered incidental to the associated duct.

The removal and replacement in kind of PCC sidewalk, fence, concrete curb and gutter and pavement marking shall not be paid for separately but shall be considered incidental to the associated duct.

Payment will be made under:

Item AR110012 – 2” Directional Bore – per linear foot.

Item AR110013 – 3” Directional Bore – per linear foot.

Item AR110024 – 2 - 4” Directional Bore – per linear foot.

Item AR110202 – 2” PVC Duct – Direct Bury – per linear foot.

Item AR110502 – 2 - Way Concrete Encased Duct – per linear foot.

Item AR110504 – 4 - Way Concrete Encased Duct – per linear foot.

Item AR800018 – 4 - 4” Directional Bore – per linear foot.

Item AR800067 – 2 - 4” PVC Duct – Direct Bury – per linear foot.

ITEM 115 (110) – ELECTRICAL MANHOLE AND JUNCTION STRUCTURES

See the Standard Specifications for Construction of Airports September 25, 2020 for the complete specification.

DESCRIPTION

- 115-1.1 ADD: Airfield lighting improvements shall include:
- Installation of Electrical Handhole, Low Voltage
 - Installation of Electrical Handhole, High Voltage

METHOD OF MEASUREMENT

- 115-4.1 REVISE: First sentence to read:
- The quantity of electrical manholes, handholes and junction structures shall be measured for payment by the number of each unit installed as specified, completed, and accepted by the Resident Engineer.

BASIS OF PAYMENT

- 115-5-1 ADD: Payment will be made under:
- Item AR110610 – Electrical Handhole – per each.
- Item AR110615 – Electrical Handhole, High Voltage – per each.

ITEM 125 – INSTALLATION OF AIRPORT LIGHTING SYSTEMS

See the Standard Specifications for Construction of Airports September 25, 2020 for the complete specification.

DESCRIPTION

125-1.1 ADD: Airfield lighting improvements shall include:

- Installation of Runway and Taxiway Lights
- Installation of new Runway LED lights
 - Installation of new Taxiway LED Lights
 - Installation of new LED signs
 - Installation of new cans
 - Removal of Lights, Signs and Splice Cans

EQUIPMENT AND MATERIALS

125-2.9 RUUNWAY AND TAXIWAY GUIDANCE SIGNS

ADD:

Where existing signs are shown to remain on the plans, existing isolation transformers shall be removed and replaced with new L-830 isolation transformers.

CONSTRUCTION METHODS

125-3.5 REMOVALS

Removal of electrical items shall include the complete removal of the fixture, cans, foundation and associated cables.

BASIS OF PAYMENT

125-5.1 ADD: These prices shall be full compensation for furnishing all materials and for all preparation, removals, modifications, assembly, and installation of these materials, coordination with the manufacturers and for all labor, equipment, tools, and incidentals necessary to complete this item.

Payment will be made under:

Item AR125410 – MITL – Stake Mounted – per each.

Item AR125415 – MITL – Base Mounted – per each.

Item AR125442 – Taxi Guidance Sign, 2 Character – 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 AR125446 – Taxi Guidance Sign, 6 Character – per each.
- Item AR125510 – MIRL, Base Mounted – per each.
- Item AR125515 – HIRL, Base Mounted – per each.
- Item AR125525 – HIRL, InPavement – per each.
- Item AR125545 – MI Threshold Light Base MTD – per each.
- Item AR125550 – HI 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 AR125903 – Remove InPavement Light – per each.
- Item AR125904 – Remove Taxi Guidance Sign – per each.
- Item AR125906 – Remove Splice Can – per each.
- Item AR800068 – Replace Isolation Transformer – per each.

APPENDIX 1
Requirements for Laboratory, Testing, Quality Control,
And paving of Superpave Bituminous Concrete Mixtures for Airports
-Policy Memorandum 2003-1
17 Pages

State of Illinois
Department of Transportation
Division of Aeronautics

POLICY MEMORANDUM

April 1, 2010

Springfield, Illinois

Number 2003-1

TO: CONTRACTORS

SUBJECT: REQUIREMENTS FOR LABORATORY, TESTING, QUALITY CONTROL, AND PAVING OF SUPERPAVE HMA CONCRETE MIXTURES FOR AIRPORTS

I. SCOPE

The purpose of this policy memorandum is to define to the Contractor the requirements concerning the laboratory, testing, Quality Control, and paving of HMA mixtures utilizing Superpave technology. References are made to the most recent issue of the Standard Specifications for Construction of Airports and to American Society for Testing and Materials (ASTM) testing methods. The Quality Assurance and acceptance responsibilities of the Resident Engineer are described in Policy Memorandum 96-3.

II. LABORATORY

The Contractor shall provide a laboratory located at the plant and approved by the Illinois Division of Aeronautics (IDA). The laboratory shall be of sufficient size and be furnished with the necessary equipment and supplies for adequately and safely performing the Contractor's Quality Control testing as well as the Resident Engineer's acceptance testing as described in Policy Memorandum 96-3.

The effective working area of the laboratory shall be a minimum of 600 square feet with a ceiling height of not less than 7.5 feet. Lighting shall be adequate to illuminate all working areas. It shall be equipped with heating and air conditioning units to maintain a temperature of 70° F ±5°F.

The laboratory shall have equipment that is in good working order and that meets the requirements set forth in the following ASTM test standards:

ASTM D 70	Test Method for Specific Gravity and Density of Semi-Solid Materials
ASTM C 117	Test Method for Materials Finer than 75 µm (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 136	Sieve or Screen Analysis of Fine and Coarse Aggregate
ASTM C 566	Total Moisture Content of Aggregate by Drying
ASTM D 75	Sampling Aggregates
ASTM D 2041	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D 2172	Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
IDOT	Ignition Method for Determining Asphalt Content
ASTM D 2726	Bulk Specific Gravity of Compacted Bituminous Mixtures using Saturated Surface Dry Specimens

ASTM D 3203	Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D 2950	Density of Bituminous Concrete in Place by Nuclear Method
ASTM D 4125	Asphalt Content of Bituminous Mixtures by Nuclear Method
ASTM C 127	Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate
ASTM C 128	Standard Test Method for Specific Gravity and Absorption of Fine Aggregate

The Asphalt Institute's *Superpave Mix Design, Superpave Series No. 2 (SP-2)*

The laboratory and equipment furnished by the Contractor shall be properly calibrated and maintained. The Contractor shall maintain a record of calibration results at the laboratory. The Engineer may inspect measuring and testing devices at any time to confirm both calibration and condition. If the Resident Engineer determines that the equipment is not within the limits of dimensions or calibration described in the appropriate test method, he may stop production until corrective action is taken. If laboratory equipment becomes inoperable or insufficient to keep up with mix production testing, the Contractor shall cease mix production until adequate and/or sufficient equipment is provided.

III. MIX DESIGN SUBMITTAL

Based upon data and test results submitted by the Contractor, the Illinois Division of Aeronautics Engineer of Construction & Materials shall issue the final Job Mix Formula (JMF) approval letter that concurs or rejects the Contractor's proposed JMF. The Contractor will be required to perform the sampling and laboratory testing and develop a complete mix design, according to the following guidelines: [Note: A testing summary chart can be found in Appendix B.]

- A. Material sources meeting the requirements of the contract shall be submitted in writing at or before the preconstruction conference (see BITUMINOUS WORKSHEET in Appendix A) in the following format:
 1. To: Steven J. Long, P.E., Acting Chief Engineer
Attn: Michael F. Wilhelm, P.E., Engineer of Construction & Materials
Division of Aeronautics
One Langhorne Bond Drive
Springfield, Illinois 62707
 2. Producer name and location of each aggregate
 3. Producer # for each aggregate (producers are assigned this number by IDOT Central Bureau of Materials)
 4. Material code for each aggregate
 5. Gradation and Quality designation for each aggregate (i.e. CA-11, etc.)
 6. Producer, producer #, and specific gravities of asphalt cement
 7. Performance Graded Binder 64-22 shall be used unless otherwise approved by the IDA Engineer of Construction & Materials.
- B. The Contractor shall obtain representative samples of each aggregate. The individual obtaining samples shall have successfully completed the IDOT Aggregate Technician Course under the

IDOT Division of Highways, QC/QA program. The sample size shall be approximately 280 lb. for each coarse aggregate, 150 lb. for each fine aggregate, 15 lb. for the mineral filler or collected dust, and 1 gallon of asphalt cement.

- C. The Contractor shall split the aggregate samples down and run gradation tests according to the testing methods referenced in Appendix B of this memorandum. The remaining aggregates shall be set aside for further Mix Design testing. The results of the gradation tests, along with the most recent stockpile gradations, shall be reported by fax to the IDA Engineer of Construction & Materials for engineering evaluation. If the gradation results are deemed non-representative or in any way unacceptable, new representative samples may be required at the direction of the IDA Engineer of Construction & Materials. Only composite gradations are required under this procedure.
- D. Based on the accepted gradation results, the Contractor will determine blend percentages in accordance with the contract specifications (see Section 401/403 – 3.2 JOB MIX FORMULA under Table 2) for each aggregate to be used in determining the Job Mix Formula, as well as mix temperature and asphalt content(s), and number of Gyration (N_{des}) for preparation of the Superpave Mix Design. The Contractor will verify the aggregate percentages, mix temperatures, asphalt content(s), and number of gyrations with the IDA Engineer of Construction & Materials before beginning any testing.
- E. After verification of the information from step D., the Contractor shall make specimens and perform the following tests at various asphalt contents in order to obtain the optimum mix design. [Note: Actual test designation is referenced in Appendix B of this memorandum.]

Tests

Maximum Specific Gravity -- G_{mm}

Bulk Specific Gravity -- G_{mb}

% air voids -- V_a

% VMA

VFA %

The JMF will be designed in accordance with TABLE 2 as modified in Section 401 – 3.2 or 403 – 3.2, depending on the type of mix being produced. Appendix C contains a copy of the TABLE 2 targets and ranges for the JMF.

- F. All technicians who will be performing mix design testing and plant sampling/testing shall have successfully completed the IDOT Division of Highways Bituminous Concrete Level 1 Technician Course “Bituminous Concrete Testing”. The Contractor may also provide a Gradation who has successfully completed the Department’s “Gradation Technician Course” to run gradation tests only under the supervision of a Bituminous Concrete Level 2 Technician.
- G. The mix design testing results and resulting optimal JMF shall be reported to the IDA Engineer of Construction & Materials with the following data included:
 - a) Aggregate & liquid asphalt material codes
 - b) Aggregate & liquid asphalt producer numbers, names, and locations
 - c) Aggregate Blend of each aggregate
 - d) Optimum Blend % for each sieve
 - e) AC Specific Gravity
 - f) Bulk Specific Gravity and Absorption for each aggregate
 - g) Summary of Superpave Design Data: AC % Mix, G_{mb} , G_{mm} , VMA, Voids (Total Mix), Voids Filled, V_{be} , P_{be} , P_{ba} , G_{se}
 - h) Optimum design data listing: AC % Mix, G_{mb} , G_{mm} , VMA, Voids (Total Mix), Voids Filled, G_{se} , G_{sb}
 - i) Percent of asphalt that any RAP will add to the mix

j) Graphs for the following: gradation on 0.45 Power Curve, AC vs. Voids (Total Mix), AC vs. Specific Gravities, AC vs. Voids Filled, AC vs. VMA

- H. The IDA Engineer of Construction & Materials shall generate and issue a concurrence or rejection of the Contractor's proposed Mix Design with the JMF for the manufacture of HMA mixtures based upon the Contractor's submitted testing and completed mix design results. The Contractor shall not be permitted to use the proposed HMA mix in production for the project until an approval letter is issued to the Contractor by the IDA Engineer of Construction & Materials, and the mix passes all test section requirements, when a test section is specified.
- I. The above procedure, III. MIX DESIGN SUBMITTAL, shall be repeated for each change in source or gradation of materials.

IV. MIX PRODUCTION TESTING

The Quality Control of the manufacture and placement of HMA mixtures is the responsibility of the Contractor. The Contractor shall perform or have performed the inspection and tests required to assure conformance to contract requirements. Quality Control includes the recognition of defects and their immediate correction. This may require increased testing, communication of test results to the plant or the job site, modification of operations, suspension of HMA production, rejection of material, or other actions as appropriate. The Resident Engineer shall be immediately notified of any failing tests and subsequent remedial action. Form AER M-14 shall be reported to the Engineer and Resident Engineer no later than the start of the next work day. In addition, AER M-9 and M-11 shall be given to the Resident Engineer daily. The Contractor shall provide a Quality Control (QC) Manager who will have overall responsibility and authority for Quality Control. This individual shall have successfully completed the IDOT Division of Highways HMA Concrete Level II Technician Course "HMA Proportioning and Mixture Evaluation." In addition to the QC Manager, the Contractor shall provide sufficient and qualified personnel to perform the required visual inspections, sampling, testing, and documentation in a timely manner. The following plant tests and documentation shall be required: [Note: A summary chart of testing can be found in Appendix B.]

- A. Minimum of one (1) complete hot bin or combined belt analysis per day of production or every 1,000 tons, whichever is more frequent.
- B. Minimum one (1) stockpile gradation for each aggregate and/or mineral filler per week when a batch plant is utilized. Minimum of one (1) gradation for each aggregate per day of production or every 1,000 tons when a drum plant is used, and one (1) gradation per week for mineral filler when a drum plant is used.
- C. A certification from the quarry for the total quantity of aggregate listing the source, gradation type, and quality designation of aggregate shipped. In lieu of a certification, the contractor may complete and submit an "Aggregate Certification of Compliance" form which may be obtained from IDA or found on the I.D.O.T. website.
- D. Original asphalt shipping tickets listing the source and type of asphalt shipped.

- E. One mix sample per 1,000 tons of mix. The sample shall be split in half. One half shall be reserved for testing by the Engineer. The other half shall be split and tested by the Contractor for Extraction, Gradation, Maximum Specific Gravity, and Air Void tests in accordance with the appropriate ASTM standard referenced herein. [See Appendix B.]
1. In place of the extraction test, the Contractor may provide the asphalt content by a calibrated ignition oven test using the IDOT Division of Highways' latest procedure. The correction (calibration) factor for aggregate type shall be clearly indicated in the reported test results.

From these tests, the Contractor shall interpret the test data and make necessary adjustments to the production process only in order to comply with the approved JMF.

V. QUALITY CONTROL

A. Control Limits

Target values shall be determined from the approved JMF. The target values shall be plotted on the control charts within the following control limits:

<u>Parameter</u>	<u>Control Limits</u>	
	<u>Individual Test</u>	<u>Moving Avg. of 4</u>
% Passing		
1/2 in.	± 7 %	±4 %
No. 4	±7 %	±4 %
No. 8	±5 %	±3 %
No. 30	±4 %	±2.5 %
No. 200 *	±2.0 % *	±1.0 % *
Asphalt Content	±0.45 %	±0.2 %

* No. 200 material percents shall be based on washed samples. Dry sieve gradations (-200) shall be adjusted based on anticipated degradation in the mixing process.

B. Control Charts

Standardized control charts shall be maintained by the Contractor at the field laboratory. The control charts shall be displayed and be accessible at the field laboratory at all times for review by the Engineer. The individual required test results obtained by the Contractor shall be recorded on the control chart immediately upon completion of a test, but no later than 24 hours after sampling. Only the required plant tests and resamples shall be recorded on the control chart. Any additional testing of check samples may be used for controlling the Contractor's processes, but shall be documented in the plant diary.

The results of assurance tests performed by the Resident Engineer will be posted as soon as available.

The following parameters shall be recorded on control charts:

1. Combined Gradation of Hot-Bin (Batch Plant) or Combined Belt Aggregate Samples (Drier Drum Plant). (% Passing 1/2 in., No. 4., No. 8, No. 30, and No. 200 Sieves)
2. Asphalt Content

3. Bulk Specific Gravity (G_{mb})
4. Maximum Specific Gravity of Mixture (G_{mm})

C. Corrective Action for Required Plant Tests

Control Limits for each required parameter, both individual tests and the average of four tests, shall be exhibited on control charts. Test results shall be posted within the time limits previously outlined.

1. Individual Test Result. When an individual test result exceeds its control limit, the Contractor shall immediately resample and retest. If at the end of the day no material remains from which to resample, the first sample taken the following day shall serve as the resample as well as the first sample of the day. This result shall be recorded as a retest. If the retest passes, the Contractor may continue the required plant test frequency. Additional check samples should be taken to verify mix compliance.
2. Asphalt Content. If the retest for asphalt content exceeds control limits, mix production shall cease and immediate corrective action shall be instituted by the Contractor. After corrective action, mix production shall be restarted, the mix production shall be stabilized, and the Contractor shall immediately resample and retest. Mix production may continue when approved by the Engineer. The corrective action shall be documented.

Inability to control mix production is cause for the Engineer to stop the operation until the Contractor completes the investigation identifying the problems causing failing test results.

3. Combined Aggregate/Hot-Bin. For combined aggregate/hot-bin retest failures, immediate corrective action shall be instituted by the Contractor. After corrective action, the Contractor shall immediately resample and retest. The corrective action shall be documented.
 - a. Moving Average. When the moving average values trend toward the moving average control limits, the Contractor shall take corrective action and increase the sampling and testing frequency. The corrective action shall be documented.

The Contractor shall notify the Engineer whenever the moving average values exceed the moving average control limits. If two consecutive moving average values fall outside the moving average control limits, the Contractor shall cease operations. Corrective action shall be immediately instituted by the Contractor. Operations shall not be reinstated without the approval of the Engineer. Failure to cease operations shall subject all subsequently produced material to be considered unacceptable.
 - b. Mix Production Control. If the Contractor is not controlling the production process and is making no effort to take corrective action, the operation shall stop.

VI. TEST SECTION AND DENSITY ACCEPTANCE (Note: Applies only when specified.)

- A. The purpose of the test section is to determine if the mix is acceptable and can be compacted to a consistent passing density.

A quick way to determine the compactibility of the mix is by the use of a nuclear density gauge in the construction of a growth curve. An easy way to construct a growth curve is to use a good vibratory roller. To construct the curve, an area the width of the roller in the middle of the mat is chosen and the roller is allowed to make one compactive pass. With the roller stopped some 30 feet away, a nuclear reading is taken and the outline of the gauge is marked on the pavement. The roller then makes a compactive pass in the opposite direction and another reading is taken. This scenario is continued until at least two (2) passes are made past the maximum peak density obtained.

The maximum laboratory density potential of a given mix is a direct function of the mix design air voids. Whereas, the actual maximum field density is a function of the type of coarse aggregates, natural or manufactured sands, lift thickness, roller type (static or vibratory), roller and paver speed, base condition, mix variation, etc. All of these items are taken into consideration with the growth curve.

1. High Density in the Growth Curve. If the growth curve indicates a maximum achievable field density of between 95 to 98 percent of the Theoretical Maximum Density (D), you can proceed with the Rolling Pattern. On the other hand, if the maximum achievable density is greater than 98 percent, a quick evaluation (by use of an extractor, hot bin gradations, nuclear asphalt determinator, etc.) must be made of the mix. When adjustments are made in the mix, a new growth curve shall be constructed.
2. Low Density in the Growth Curve. If the growth curve indicates the maximum achievable density is below 94 percent, a thorough evaluation of the mix, rollers, and laydown operations should be made. After a thorough evaluation of all factors (mix, rollers, etc.), asphalt or gradation changes may be in order as directed by the Engineer. Again, any changes in the mix will require a new growth curve. Note that the nuclear density test is a quality control tool and not an acceptance test. All acceptance testing is to be conducted by the use of cores, unless otherwise specified.
3. Acceptance of Test Section. The Contractor may proceed with paving the day after the test section provided the following criteria have been met:
 - a. Four random locations (2 cores per location cut longitudinally and cored by the Contractor) will be selected by the Engineer within the test strip. All the cores must show a minimum of 94% density.
 - b. All Superpave and extraction test results from mix produced for the test section must be within the tolerances required by specification.
 - c. The Contractor shall correlate his nuclear gauge to the cores taken in the test section. Additional cores may be taken at the Contractor's expense for this purpose within the test section area, when approved by the Engineer.

4. Density Acceptance under Production Paving. The responsibility for obtaining the specified density lies with the Contractor. Therefore, it is important that the nuclear density gauge operator communicate with the roller operators to maintain the specified density requirements. The Contractor shall provide a qualified HMA Density Tester who has successfully completed the Department's "HMA Nuclear Density Testing Course" to run all required density tests on the job site. Density acceptance testing, unless otherwise specified, is described as follows:
- a. The Contractor shall cut cores at random locations within 500 ton sublots as directed by the Resident Engineer.
 - b. The cores should be extracted so as not to damage them, since they are used to calculate the Contractor's pay.
 - c. The Engineer will run preliminary G_{mb} tests on the cores to give the Contractor an indication of how compaction is running for the next day's paving.
 - d. A running average of four (4) Maximum Theoretical Gravities (G_{mm}) will be used for calculating percent compaction.
 - e. Final core density tests and pay calculations will be performed by the Resident Engineer and delivered to the Contractor.
 - f. Should the contractor wish to resample the pavement as a result of pay calculations resulting in less than 100% payment, the request must be made within 48 hours of receipt of the original payment calculations.

Steven J. Long, P.E.
Acting Chief Engineer

Supersedes Policy Memorandum 2003-1 dated January 15, 2007

APPENDIX A

BITUMINOUS WORKSHEET

Airport: _____ Project No.: _____ AIP No.: _____

Mix Design #: _____ Material Code: _____ Producer: _____

Prod. #: _____

AGGREGATE

Mat'l. Code: _____

Producer #: _____

Prod. Name _____

Location: _____

Percent Passing

Sieve Size

1 inch _____

3/4 inch _____

1/2 inch _____

3/8 inch _____

No. 4 _____

No. 8 _____

No. 16 _____

No. 30 _____

No. 50 _____

No. 100 _____

No. 200 _____

Washed (y/n) _____

O.D. Gravity _____

App. Gravity _____

Absorption _____

Asphalt Gravity _____ Asphalt Source _____ Asphalt Producer No. _____

MARSHALL DATA

% Asphalt _____

M. Stability _____

Flow _____

D _____

0 _____

% Air Voids _____

Q.C. Manager Name: _____ Phone number: _____

Laboratory Location: _____ Fax Number: _____

Remarks: _____

APPENDIX B

QUALITY CONTROL TESTING (PLANT)

PARAMETER	FREQUENCY	SAMPLE SIZE	TEST METHOD	REPORT FORM
Aggregate Gradations: Hot bins for batch and continuous plants--- Individual cold-feeds or combined belt-feeds for drier drum plants.	Minimum 1 per day of production and at least 1 per 1000 tons.	CA07/11: 5000 gm CA13: 2000 gm CA16: 1500 gm Fine agg: 500 gm 1 gallon asphalt cement	ASTM C 136	AER M-9
Aggregate gradations: Stockpiles	Minimum 1 per aggregate per week per stockpile.	CA07/11: 5000 gm CA13: 2000 gm CA16: 1500 gm Fine agg: 500 gm *Note: The above test sample sizes are to be obtained from splitting down a larger sample from the stockpiles.	ASTM C 136	AER M-9
Maximum Specific Gravity	Minimum 1 per 1000 tons	1200 gm per test	ASTM D 2041	AER M-11 and AERM-14
Bulk Specific Gravity	Minimum 1 per 1000 tons	1250 gm per briquette	ASTM D 2726	AER M-11 and AERM-14
Marshall Stability and Flow	Minimum 1 per 1000 tons	1250 gm per briquette	ASTM D 1559	AER M-11 and AERM-14
% Air Voids	Minimum 1 per 1000 tons		ASTM D 3203	AER M-11 and AERM-14
Extraction	Minimum 1 per 1000 tons	1000 gm (surface) 1500 gm (base)	ASTM D 2172	AER M-11 and AERM-14
Ignition Oven Test	Minimum 1 per 1000 tons	1500 gm		AER M-14
Nuclear Asphalt Gauge	Minimum 1 per 1000 tons	1000-1100 gm	ASTM D 2145	AER M-14
Gyratory Brix	Minimum 1 per 1000 tons	4700-4800 gm 115 mm +/- 5 mm	AASHTO TP4-99	

MIX DESIGN TESTING

PARAMETER	FREQUENCY	SAMPLE SIZE	TEST METHOD	REPORT FORM
Representative samples of each aggregate and asphalt cement.	1 per aggregate and 1 asphalt cement.	280 lb. (coarse) 150 lb. (fine) 15 lb. (min. filler) 1 gallon asphalt cement	ASTM D 75	N/A
Aggregate Gradation	1 per aggregate	CA07/11: 5000 gm CA13: 2000 gm CA16: 1500 gm Fine agg: 500 gm	ASTM C 136	Bituminous Worksheet (Appendix A)
Maximum Specific Gravity	2 per specified asphalt content	1200 gm per test	ASTM D 2041	Bituminous Worksheet (Appendix A)
Bulk Specific Gravity	3 briquettes per specified asphalt content	1250 gm per briquette	ASTM D 2726	Bituminous Worksheet (Appendix A)
Marshall Stability and Flow	3 briquettes	1250 gm per briquette	ASTM D 1559	Bituminous Worksheet (Appendix A)
% Air Voids	1 per specified asphalt content (Avg. of G_{sb}/G_{mm})		ASTM D 3203	Bituminous Worksheet (Appendix A)
Gyratory Brix	Minimum 1 per 1000 tons	4700-4800 gm 115 mm +/- 5 mm	AASHTO TP4-99	

QUALITY CONTROL TESTING (PAVER)

PARAMETER	FREQUENCY	SAMPLE SIZE	TEST METHOD	REPORT FORM
Nuclear Density Test	As required by the Contractor to maintain consistent passing density	Various locations	ASTM D 2950	

APPENDIX C

AGGREGATE BITUMINOUS BASE COURSE

Percentage by Weight Passing Sieves Job Mix Formula (JMF)		
Sieve Size	Gradation B Range 1" Maximum	Ideal Target
1-1/4 in.	---	---
1 in.	100	100
3/4 in.	93 – 97	95
1/2 in.	75 – 79	77
3/8 in.	64 – 68	66
No. 4	45 – 51	48
No. 8	34 – 40	37
No. 16	27 – 33	30
No. 30	19 – 23	21
No. 100	6 – 10	8
No. 200	4 – 6	5
Bitumen %:		
Stone	4.5 – 7.0	5.5

AGGREGATE BITUMINOUS SURFACE COURSE

Percentage by Weight Passing Sieves Job Mix Formula (JMF)		
Sieve Size	Gradation B Range ^{3/4}" Maximum	Ideal Target
1 in.	100	---
3/4 in.	100	100
1/2 in.	99 - 100	100
3/8 in.	91 - 97	94
No. 4	56 - 62	59
No. 8	36 - 42	39
No. 16	27 - 32	30
No. 30	19 - 25	22
No. 100	7 - 9	8
No. 200	5 - 7	6
Bitumen %:		
Stone	5.0 - 7.0	6.0

APPENDIX 2
Density Acceptance of Bituminous Pavements
-Policy Memorandum 87-2
4 Pages

State of Illinois
Department of Transportation
Division of Aeronautics

POLICY MEMORANDUM

February 20, 2014

Springfield

Number: 87-2

TO: CONSULTING ENGINEERS

SUBJECT: DENSITY ACCEPTANCE OF BITUMINOUS PAVEMENTS

I. Introduction

This Policy Memorandum deals with the implementation of the bituminous density quality assurance specifications as outlined in the Standard Specifications for Construction of Airports, Sections 401-4.15 and 403-4.15.

II. Sampling

After completion of compaction and when the pavement has reached ambient temperature, the paved area shall be divided into Sublots of 500 tons per type of mix. One core sample (2 cores per sample) shall be taken from each Sublot. The longitudinal and transverse location for each sample shall be determined by use of a random number "Deck" provided by the Division. No core shall be taken closer than two (2) feet from the edge of the mat. A core extraction device shall be used to obtain all cores from the mat. All cores are to be taken by the contractor under the supervision and remain in the possession of the Engineer. It is imperative that the Engineer and the contractor realize that the cores are "money" and that improper coring, extraction, shipping and/or testing can be costly.

One mix sample per 1000 tons of mix laid shall be taken for Extraction, Maximum Specific Gravity (G_{mm}) and Air Void tests. The mix samples shall be sampled by the contractor and split in half.

The Resident Engineer shall randomly designate and send the split samples to an independent laboratory for testing. The laboratory will be verified to be ASTM- certified for all the required testing and be contracted through the Consultant. The frequency of testing split samples shall be 1 per 5000 tons. Higher frequencies may be necessary if the contractor's tests, and/or mix quality control are inconsistent.

III. Testing

All cores shall be tested for Bulk Specific Gravity (G_{mb}) in accordance with ASTM D2726 using Procedure 10.1, "For Specimens That Contain Moisture." The Theoretical Maximum Gravity (G_{mm}) shall be determined according to ASTM D2041. From these tests the in-place air voids of the compacted pavement are calculated according to ASTM

D3203 for "dense bituminous paving mixtures." Selection of the proper G_{mm} shall be based on a running average of four (4) tests per Lot.

- E.g. Lot 1 - Use the average of the two (2) tests for Lot 1.
 Lot 2 - Use the average of the four (4) tests from Lots 1 and 2.
 Lot 3 - Use the average of the four (4) tests from Lots 2 and 3.

NOTE: When more than four (4) Sublots are used, still use a running average of four (4) tests per Lot.

IV. Acceptance Calculations

The first step in calculating the quantities for pay is to calculate the Mean (\bar{X}) and the Standard Deviation (S) of the Sublot tests. From this data the Lot samples should first be tested for outliers. After consideration for outliers, the Percent Within Tolerance (PWT) and the Percent Within Limits (PWL) are calculated to determine the final pay quantities for the Lot.

EXAMPLE

1. Test Data

- Lot Quantity = 2000 tons
- Sublot Test 1 = 4.35 % Air Voids
- Sublot Test 2 = 3.96 % Air Voids
- Sublot Test 3 = 6.75 % Air Voids
- Sublot Test 4 = 6.25 % Air Voids

2. Calculating the Mean and Standard Deviation

Sublot	\bar{X}	$(\bar{X} - \bar{X})$	$(\bar{X} - \bar{X})^2$
1	4.35	-0.978	0.956
2	3.96	-1.368	1.871
3	6.75	1.422	2.022
4	<u>6.25</u>	0.922	<u>0.850</u>
Sum =	21.31		5.699

$N = 4$

Mean $\bar{X} = 21.34 / 4 = 5.328$

Variance $(S)^2 = \text{Sum } \frac{(\bar{X} - \bar{X})^2}{3} = \frac{5.699}{3} = 1.900$

Standard Deviation $S = \sqrt{1.900} = 1.378$

3. Test for Outliers

Check for Critical "T" Values

$$T = \frac{|(X_1 - \bar{X})|}{S} = \frac{|3.96 - 5.328|}{1.378} = 0.99$$

* Difference between the suspect test value (X_1) and the Mean (\bar{X}).

If the T value exceeds the critical "T" Value in the table below and no assignable cause can be determined for the outlier, discard the suspected test measurement and obtain another random sample from the Sublot in question. If the new test exceeds the Mean (\bar{X}) in the same direction from the Mean as the suspected test, recalculate the T value including all tests (original test, suspected test, and new test) for an outlier and for computing final payment.

TABLE OF CRITICAL "T" VALUES

Number of observations (N)	Critical "T" Value 5% Significance Level
3	1.15
4	1.46
5	1.67
6	1.82
7	1.94
8	2.03
9	2.11
10	2.18
11	2.23
12	2.29

Based on the above table, the "T" value of 0.99 does not exceed the Critical "T" Value of 1.46 for N = 4. Therefore, the value (3.96) is not an outlier and shall be used in calculating the Lot payment.

4. Calculation of Lot Payment

To calculate the Lot Payment use the Acceptance Criteria as outlined under Item 401-4.15(c) or Item 403-4.15(c).

$$Q_L = \frac{(\bar{X} - 1)}{S} = \frac{5.328 - 1}{1.378} = 3.141$$

$$Q_U = \frac{(7 - \bar{X})}{S} = \frac{7 - 5.328}{1.378} = 1.213$$

From this data the Percentage Within Tolerance (PWT) for both the lower and upper tolerance limits is determined by Table 6 (see Item 401 Bituminous Surface Course and/or Item 403 Bituminous Base Course in the Standard Specifications) for the number (N) of samples tested.

Eq. PWT (lower) = 99.0%
PWT (upper) = 90.4%

We now calculate the Percent Within Limits (PWL) for the Lot.

$$PWL = [PWT (lower)] + [PWT (upper)] - 100$$

$$PWL = (99.0 + 90.4) - 100 = 89.4\%$$

Using Table 5, the % Adjustment in Lot Quantity is:

$$\% \text{ Adjustment} = 0.5 \text{ PWL} + 55.0$$

$$\% \text{ Adjustment} = 0.5 (89.4) + 55.0$$

$$\% \text{ Adjustment} = 99.7$$

$$\text{Adjusted Quantities} = \% \text{ Adjustment} \times \text{Lot Quantities}$$

$$\text{Adjusted Quantities} = 0.997 \times 2000 \text{ tons}$$

$$\text{Adjusted Quantities} = 1994 \text{ tons}$$

5. Resampling and Retesting

The contractor has the right to request the resampling and retesting of a complete Lot. This privilege is only allowed once for each Lot and must be requested in writing by the contractor within 48 hours of receiving the official report from the Engineer.

6. Reporting

After completion of the tests for each Lot, the Engineer shall complete the necessary calculations for final adjustment in quantities on the Form AER-1 and have both the Engineer and the Contractor sign the report for copying to both the FAA and IDOA.

Steven J. Long, P.E. Acting Chief Engineer

Supersedes Policy Memorandum 87-2, dated April 1, 2010

APPENDIX 3
Determination of Bulk Specific Gravity (d) of
Compacted Bituminous Mixes
-Policy Memorandum 87-4
3 Pages

State of Illinois
Department of Transportation
Division of Aeronautics

POLICY MEMORANDUM

February 20, 2014

Springfield

Number: 87-4

TO: CONSULTING ENGINEERS

SUBJECT: DETERMINATION OF BULK SPECIFIC GRAVITY (d) OF COMPACTED BITUMINOUS MIXES

A. SCOPE

This method of test covers the determination of the bulk specific gravity and the percent air, of core samples from compacted bituminous mixtures using a saturated surface-dry procedure.

B. DEFINITIONS

1. Bulk Specific Gravity (G_{mb}) ASTM 2726 or density is the weight per unit volume (gms/cc) of a mixture in its existing state of consolidation. The volume measurement for this specific gravity will include the volume of all the aggregate, asphalt, and air spaces (voids) in the aggregate particles and between the aggregate particles.
2. Theoretical Maximum Specific Gravity (G_{mm}) ASTM 2041 is the weight per unit volume (grams/cc) of a mixture assuming complete consolidation; i.e., all the air spaces (voids) between the aggregate particles are eliminated.
3. Percent Density is a measure of the degree of compaction in relation to the Theoretical Maximum Specific Gravity.
4. Percent Air is a measure of the air voids in the compacted pavement.

C. APPARATUS

1. Balance - The balance shall be accurate to 0.1 gm throughout the operating range. It may be mechanical or electrical and shall be equipped with a suitable suspension apparatus and holder to permit weighing of the core in water while suspended from the balance. If the balance is a beam type, it shall be set up so that the core is placed in the basket that is suspended from the zero (0) end of the balance arm.
2. Water bath - The container for immersing the core in water while suspended from the balance shall be equipped with an overflow outlet for maintaining a constant water level. This water bath should be large enough to handle full-depth cores. When testing several cores at the same time, a dish-pan, sink or suitable container may be used for soaking.

D. PROCEDURE

1. Prior to testing, cores shall be sorted on a flat surface in a cool place. The sample(s) shall be brushed with a wire brush and/or other suitable means, to remove all loose and/or foreign materials, such as seal coat, tack coat, foundation material, soil, paper and foil prior to testing.
2. If a core contains binder and surface or multiple lifts, the lifts shall be separated. This may be done in the following manner:
 - a. Mark the separation line between the two lifts.
 - b. Place the core in a freezer for 20-25 minutes.
 - c. Place a 2 or 3-inch wide chisel on the separation line and tap with a hammer. Rotate the core and continue this process until the core separates. Brush loose pieces with a wire brush if needed.
 - d. Allow 2-3 hours for the core to return to ambient temperature before proceeding.
3. Prepare the water baths for soaking and weighing with water at 77° F. Water baths should be maintained at this temperature throughout testing. Saturate the cores by submerging in the water for a minimum of 20 minutes.
4. With the balance and water bath properly assembled and zeroed, suspend the sample from the balance and submerge it in the water bath. The core must be placed with the original top and bottom in a vertical position. If necessary, add sufficient water to bring the water level up to the overflow outlet. Permit any excess to overflow. Read and record the Saturated Submerged Weight. Designate this weight as (C).
5. Remove the core from the water bath and blot the excess water from the surface of the core with an absorbent cloth or other suitable material. This must be done quickly to prevent the internal water from escaping.
6. Place the core on the balance and read and record the Saturated Surface-dry Weight in air. Designate this weight as (B).
7. Place the core in a tared pan and dry in an oven. When the core is dry (less than 0.5 gm loss in one hour), record the weight and subtract the pan weight. Designate this weight as (A).
8. The following calculation is used to determine the Bulk Specific Gravity of the core.

$$G_{mb} = \frac{A}{B - C}$$

G_{mb} = Bulk Specific Gravity

A = Oven dry weight

B = Saturated surface-dry weight

C = Saturated submerged weight

E. PERCENT DENSITY

The following calculation is used to determine the percent density of the core:

$$\% \text{ Density} = 100 \times \frac{G_{mb}}{G_m}$$

G_{mb} = Bulk Specific Gravity

G_{mm} = Theoretical Maximum Gravity*

Note: The Theoretical Maximum Gravity (G_{mm}) is determined from the mix design until current Vacuum Pycnometer test are available.

F. PERCENT AIR. To calculate the percent air, use the following formula:

$$\% \text{ Air} = 100 - \% \text{ Density}$$

G. WEIGHT PER SQUARE YARD OF COMPACTED MIXTURE. The actual weight per square yard of a compacted mixture can be calculated by using the Bulk Specific Gravity (G_{mb}). The volume of a square yard of pavement one (1) inch thick is 0.75 cubic foot. Taking the weight of a cubic foot of water as 62.37 pounds, one square yard of compacted material, one (1) inch thick weighs:

$$\text{Pounds / Sq. Yd. (1" thick)} = 0.75 \times 62.37 \times G_{mb}$$

Steven J. Long, P.E. Acting Chief Engineer

Supersedes Policy Memorandum 87-4, dated January 1, 2004

APPENDIX 4

Item 610, Structural Portland Cement Concrete:
Job Mix Formula Approval & Production Testing
-Policy Memorandum 96-1
2 Pages

State of Illinois
Department of Transportation
Division of Aeronautics

POLICY MEMORANDUM

April 1, 2010

Springfield

Number 96-1

TO: CONSULTING ENGINEERS

SUBJECT: ITEM 610, STRUCTURAL PORTLAND CEMENT CONCRETE:
JOB MIX FORMULA APPROVAL & PRODUCTION TESTING.

- I. This policy memorandum addresses the Job Mix Formula (JMF) approval process and production testing requirements when Item 610 is specified for an airport construction contract.
- II. PROCESS
 - a. The contractor may submit a mix design with recent substantiating test data or he may submit a mix design generated by the Illinois Division of Highways with recent substantiating test data for approval consideration. The mix design should be submitted to the Resident Engineer.
 - b. The Resident Engineer should verify that each component of the proposed mix meets the requirements set forth under Item 610 of the *Standard Specifications for Construction of Airports* and/or the contract special provisions.
 - c. The mix design should also indicate the following information:
 1. The name, address, and producer/supplier number for the concrete.
 2. The source, producer/supplier number, gradation, quality, and SSD weight for the proposed coarse and fine aggregates.
 3. The source, producer/supplier number, type, and weight of the proposed flyash and/or cement.
 4. The source, producer/supplier number, dosage rate or dosage of all admixtures.
 - d. After completion of Items b and c above, the mix with substantiating test data shall be forwarded to the Division of Aeronautics for approval. Once the mix has been approved, the production testing shall be at the rate in Section III as specified herein.

III. PRODUCTION TESTING

- a. One set of cylinders or beams, depending on the strength specified, shall be cast for acceptance testing for each day the mix is used. In addition, at least one slump and one air test shall be conducted for each day the mix is used. If more than 100 c.y. of the mix is placed in a given day, additional tests at a frequency of 1 per 100 c.y. shall be taken for strength, slump, and air. The concrete shall have a maximum slump of three inches (3") and minimum slump of one inch (1") when tested in accordance with ASTM C-143. The air content of the concrete shall be between 5% and 8% by volume. At no time shall the temperature of the concrete exceed 90 degrees Fahrenheit.
- b. If the total proposed amount of Item 610 Structural Portland Cement Concrete as calculated by the Resident Engineer is less than 50 c.y. for the entire project, the following shall apply:
 - The Resident Engineer shall provide calculations of the quantity of Item 610 to the Division of Aeronautics.
 - One set of cylinders or beams, depending on the strength specified, shall be cast for acceptance testing.
 - One air content and one slump test shall be taken for acceptance testing.
 - The concrete shall have a maximum slump of three inches (3") and minimum of one inch (1") when tested in accordance with ASTM C-143. The air content of the concrete shall be between 5% and 8% by volume. At no time shall the temperature of the concrete exceed 90 degrees Fahrenheit.
- c. The Resident Engineer shall collect actual batch weight tickets for every batch of Item 610 concrete used for the project. The actual batch weight tickets shall be kept with the project records and shall be available upon request of the Department of Transportation.

Steven J. Long, P.E.
Acting Chief Engineer

Supersedes Policy Memorandum 96-1 dated January 1, 2004

APPENDIX 5
Requirements for Quality Assurance
On Projects With Bituminous Concrete Paving
-Policy Memorandum 96-3
3 Pages

State of Illinois
Department of Transportation
Division of Aeronautics

POLICY MEMORANDUM

January 1, 2004

Springfield, Illinois

Number 96-3

TO: CONSULTING ENGINEERS

SUBJECT: REQUIREMENTS FOR QUALITY ASSURANCE ON PROJECTS
WITH BITUMINOUS CONCRETE PAVING

I. SCOPE

The purpose of this policy memorandum is to define to the Consulting Engineer the requirements concerning Quality Assurance on bituminous concrete paving projects. Specifically, this memo applies whenever the Contractor is required to comply with the requirements set forth in Policy Memorandum 96-2, "*Requirements for Laboratory, Testing, Quality Control, and Paving of Bituminous Concrete Mixtures*".

II. LABORATORY APPROVAL

The Resident Engineer shall review and approve the Contractor's plant laboratory to assure that it meets the requirements set forth in the contract specifications and Policy Memorandum 96-2. This review and approval shall be completed prior to utilization of the plant for the production of any mix.

III. QUALITY ASSURANCE DURING PRODUCTION PAVING

A. At the option of the Engineer, independent assurance tests may be performed on split samples taken by the Contractor for Quality Control testing. In addition, the Resident Engineer shall witness the sampling and splitting of these samples at the start of production and as needed throughout mix production. The Engineer may select any or all split samples for assurance testing. These tests may be performed at any time after sampling. The test results will be made available to the Contractor as soon as they become available.

B. The Resident Engineer may witness the sampling and testing being performed by the Contractor. If the Resident Engineer determines that the sampling and Quality Control tests are not being performed according to the applicable test procedures, the Engineer may stop production until corrective action is taken. The Resident Engineer will promptly notify the Contractor, both verbally and in writing, of observed deficiencies. The Resident Engineer will document all witnessed samples and tests. The Resident Engineer may elect to obtain samples for testing, separate from the Contractor's Quality Control process, to verify specification compliance.

1. Differences between the Contractor's and the Engineer's split sample test results will be considered acceptable if within the following limits:

<u>Test Parameter</u>	<u>Acceptable Limits of Precision</u>
% Passing	
1/2 in.	5.0 %
No. 4	5.0 %
No. 8	3.0 %
No. 30	2.0 %
No. 200	2.2 %
Asphalt Content	0.3 %
Maximum Specific Gravity of Mixture	0.026
Bulk Specific Gravity of Marshall Sample	0.045

2. In the event a comparison of the required plant test results is outside the above acceptable limits of precision, split or independent samples fail the control limits, an extraction indicates non-specification mix, or a continual trend of difference between Contractor and Engineer test results is identified, the Engineer will immediately investigate. The Engineer may suspend production while the investigation is in progress. The investigation may include testing by the Engineer of any remaining split samples or a comparison of split sample test results on the mix currently being produced. The investigation may also include review and observation of the Contractor's technician performance, testing procedure, and equipment. If a problem is identified with the mix, the Contractor shall take immediate corrective action. After corrective action, both the Contractor and the Engineer shall immediately resample and retest.

- C. The Contractor shall be responsible for documenting all observations, records of inspection, adjustments to the mixture, test results, retest results, and corrective actions in a bound hardback field book or bound diary which will become the property of IDA upon completion and acceptance of the project. The Contractor shall be responsible for the maintenance of all permanent records whether obtained by the Contractor, the Contractor's Consultants, or the producer of bituminous mix material. The Contractor shall provide the Engineer full access to all documentation throughout the progress of the work.

Results of adjustments to mixture production and tests shall be recorded in duplicate and sent to the Engineer.

IV. ACCEPTANCE BY ENGINEER

Density acceptance shall be performed according to Policy Memorandum 87-2, or according to the acceptance procedure outlined in the Special Provisions.

Steven J. Long, P.E.
Acting Chief Engineer

Supersedes Policy Memorandum 96-3 dated January 1, 1997

APPENDIX 6
Buy American Requirements
Chapter 501
Buy American Preference
Section 50101
3 Pages

49 U.S.C.

United States Code, 2009 Edition
Title 49 - TRANSPORTATION
SUBTITLE VII - AVIATION PROGRAMS
PART E - MISCELLANEOUS
CHAPTER 501 - BUY-AMERICAN PREFERENCES
Sec. 50101 - Buying goods produced in the United States
From the U.S. Government Printing Office, www.gpo.gov

§50101. Buying goods produced in the United States

(a) Preference.—The Secretary of Transportation may obligate an amount that may be appropriated to carry out section 106(k), 44502(a)(2), or 44509, subchapter I of chapter 471 (except section 47127), or chapter 481 (except sections 48102(e), 48106, 48107, and 48110) of this title for a project only if steel and manufactured goods used in the project are produced in the United States.

(b) Waiver.—The Secretary may waive subsection (a) of this section if the Secretary finds that—

- (1) applying subsection (a) would be inconsistent with the public interest;
- (2) the steel and goods produced in the United States are not produced in a sufficient and reasonably available amount or are not of a satisfactory quality;
- (3) when procuring a facility or equipment under section 44502(a)(2) or 44509, subchapter I of chapter 471 (except section 47127), or chapter 481 (except sections 48102(e), 48106, 48107, and 48110) of this title—
 - (A) the cost of components and subcomponents produced in the United States is more than 60 percent of the cost of all components of the facility or equipment; and
 - (B) final assembly of the facility or equipment has occurred in the United States;
or
- (4) including domestic material will increase the cost of the overall project by more than 25 percent.

(c) Labor Costs.—In this section, labor costs involved in final assembly are not included in calculating the cost of components.

(Pub. L. 103–272, §1(e), July 5, 1994, 108 Stat. 1298, §49101; renumbered §50101 and amended Pub. L. 104–287, §5(88)(D), (89), Oct. 11, 1996, 110 Stat. 3398.)

Historical and Revision Notes
Pub. L. 103–272

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
49101(a)	49 App.:2226a(a).	Nov. 5, 1990, Pub. L. 101–508, §9129, 104 Stat. 1388–371.
49101(b)	49 App.:2226a(b).	
49101(c)	49 App.:2226a(c).	

In this chapter, the word “goods” is substituted for “product” and “products” for consistency.

In subsection (a), the words “Notwithstanding any other provision of law” are omitted as surplus. The words “after November 5, 1990” are omitted as obsolete.

In subsection (b), before clause (1), the words “The Secretary may waive” are substituted for “shall not apply” for consistency. In clause (2), the words “steel and goods” are substituted for “materials and products” for consistency. In clause (4), the word “contract” is omitted as surplus.

Pub. L. 104–287, §5(89)

This makes a clarifying amendment to 49:50101(a) and (b)(3), 50102, 50104(b)(1), and 50105, as redesignated by clause (88)(D) of this section, because 49:47106(d) was struck by section 108(1) of the Federal Aviation Administration Authorization Act of 1994 (Public Law 103–305, 108 Stat. 1573).

Amendments

1996—Pub. L. 104–287, §5(88)(D), renumbered section 49101 of this title as this section.

Subsecs. (a), (b)(3). Pub. L. 104–287, §5(89), substituted “section 47127” for “sections 47106(d) and 47127”.

Use of Domestic Products

Pub. L. 103–305, title III, §305, Aug. 23, 1994, 108 Stat. 1592, provided that:

“(a) Prohibition Against Fraudulent Use of ‘Made in America’ Labels.—(1) A person shall not intentionally affix a label bearing the inscription of ‘Made in America’, or any inscription with that meaning, to any product sold in or shipped to the United States, if that product is not a domestic product.

“(2) A person who violates paragraph (1) shall not be eligible for any contract for a procurement carried out with amounts authorized under this title [enacting section 47509 of this title, amending sections 44505 and 48102 of this title, and enacting provisions set out as notes under this section and section 40101 of this title], including any subcontract under such a contract pursuant to the debarment, suspension, and ineligibility procedures in subpart 9.4 of chapter 1 of title 48, Code of Federal Regulations, or any successor procedures thereto.

“(b) Compliance With Buy American Act.—(1) Except as provided in paragraph (2), the head of each office within the Federal Aviation Administration that conducts procurements shall ensure that such procurements are conducted in compliance with sections 2 through 4 of the Act of March 3, 1933 (41 U.S.C. 10a through 10c [41 U.S.C. 10a—10b–1], popularly known as the ‘Buy American Act’).

“(2) This subsection shall apply only to procurements made for which—

“(A) amounts are authorized by this title to be made available; and

“(B) solicitations for bids are issued after the date of the enactment of this Act [Aug. 23, 1994].

“(3) The Secretary, before January 1, 1995, shall report to the Congress on procurements covered under this subsection of products that are not domestic products.

“(c) Definitions.—For the purposes of this section, the term ‘domestic product’ means a product—

“(1) that is manufactured or produced in the United States; and

“(2) at least 50 percent of the cost of the articles, materials, or supplies of which are mined, produced, or manufactured in the United States.”

Similar provisions were contained in the following prior authorization act: Pub. L. 102–581, title III, §305, Oct. 31, 1992, 106 Stat. 4896.

Purchase of American Made Equipment and Products

Pub. L. 103–305, title III, §306, Aug. 23, 1994, 108 Stat. 1593, provided that:

“(a) Sense of Congress.—It is the sense of Congress that any recipient of a grant under this title [enacting section 47509 of this title, amending sections 44505 and 48102 of this title, and enacting provisions set out as notes under this section and section 40101 of this title], or under any amendment made by this title, should purchase, when available and cost-effective, American made equipment and products when expending grant monies.

“(b) Notice to Recipients of Assistance.—In allocating grants under this title, or under any amendment made by this title, the Secretary shall provide to each recipient a notice describing the statement made in subsection (a) by the Congress.”